ISSN No 2347-7075
Impact Factor- 7.328
Volume-4 Issue-20

INTERNATIONAL JOURNAL of ADVANCE and APPLIED RESEARCH

Chief Editor
Publisher: P. R. Talekar
Secretary,
Young Researcher Association
Kolhapur(M.S), India

Editor
Dr. Chandrashekar M. Mathapati,
Assistant Professor,
Department of PG Studies and Research in Management,
Karnataka State Akkamahadevi Womens University,
Vijayapura.

Young Researcher Association

International Journal of Advance and Applied Research (IJAAR)
Peer Reviewed

ISSN – 2347-7075
Impact Factor –7.328
Bi-Monthly

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.

International Journal of Advance and Applied Research (IJAAR)
Peer Reviewed Bi-Monthly

ISSN – 2347-7075
Impact Factor –7.328
Vol.4 Issue-20 May-June - 2023

International journal of advance and applied research (IJAAR)

A Multidisciplinary International Level Referred and Peer Reviewed Journal

Volume-4 *Issue-20*

Chief Editor
P. R. Talekar
Secretary,
Young Researcher Association, Kolhapur(M.S), India

Editorial & Advisory Board

Dr. S. D. Shinde	**Dr. M. B. Potdar**	**Dr. P. K. Pandey**
Dr. L. R. Rathod	Mr. V. P. Dhulap	Dr. A. G. Koppad
Dr. S. B. Abhang	Dr. S. P. Mali	Dr. G. B. Kalyanshetti
Dr. M. H. Lohgaonkar	Dr. R. D. Bodare	Dr. D. T. Bornare

Published by: Young Researcher Association, Kolhapur, Maharashtra, India

The Editors shall not be responsible for originality and thought expressed in the papers. The author shall be solely held responsible for the originality and thoughts expressed in their papers.

© All rights reserved with the Editors

International Journal of Advance and Applied Research (IJAAR)
Peer Reviewed Bi-Monthly

ISSN – 2347-7075
Impact Factor –7.328
Vol.4 Issue- 20 May -June -2023

CONTENTS

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Digitalization Programme in India: Challenges and Way forward

Dr.Ch. Krishna Rao
Faculty in Sociology at Centre for Economic and Social Studies (CESS), Hyderabad.
Corresponding Author- Bhimasheppa Muddapur
Email: krishnarao@cess.ac.in.

DOI-10.5281/zenodo.8035730

Abstract

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. This programme was started to change India into a digitally empowered society. It was launched on 2 July 2015 to ensure that government services are made available to people electronically by improving online infrastructure and by growing internet connectivity or by building our nation digitally empowered in the field of technology. Digital India is a dream to ensure that government services are made available for all citizens electronically by improving online infrastructure and by increasing the effectiveness of Internet connectivity with one mission and one target that is to take nation forward digitally and economically. This initiative was taken to ensure that the citizens are getting engaged in the innovation process which is necessary for the economic growth and sustainable development of the country. In order to realize the full potential of this programme, it is necessary to address certain challenges in the way of its successful implementation like digital illiteracy, poor infrastructure, low internet speed, lack of coordination among various departments, issue pertaining to taxation etc. If implemented properly, it will open various new opportunities for the citizens of the country and therefore it requires a lot of efforts and dedication from all departments of government as well as private sector considering the current status of the programme. The current study focused on different aspects of digitalization and its impact on society, economy, environment and nine pillars of digital India. This paper not only discussed about the benefits of digitalization but also about different challenges in the successful implementation of this programme.

Key Words: Digital India, Infrastructure, E-governance, Society, Economy.

Introduction

Digital India (DI) was launched by the Prime Minister of India in 2015 with well-defined objective of connecting rural areas with high-speed Internet networks and improving digital literacy. The vision of DI is inclusive growth in many areas such as electronic services, products, manufacturing and job opportunities etc. DI aims to provide the much needed focus on the nine pillars of growth areas, namely Broadband Highways, Universal Access to Mobile Connectivity, Public Internet Access Programme, e-Governance, Reforming Government through Technology, e-Kranti-Electronic Delivery of Services, Information for All, Electronics Manufacturing, IT for Jobs and Early Harvest Programmes. Each of these areas is a complex program in itself and cuts across multiple Ministries and Departments. DI is to be implemented by the entire Government with overall coordination being done by the Department of Electronics and Information Technology. DI Programme is a vision of transforming India into a "digitally empowered knowledge economy". It can be thought of as renovative makeover of e-governance project in its extended form which is in place since mid-1990 and is a precursor to DI initiative. It is the application of ICT in government operations, achieving public ends by digital means. Under India's e-governance programme of mid-1990, several states/UTs projects were implemented which although being citizen-centric, were unable to produce desired impact. However, continuing in this direction, GOI launched National E-

governance plan (hereinafter NeGP) in 2006 under which as many as 31 central, State and Integrated level Mission Mode Projects (MMP) were initiated which collectively covered a wide range of domain; including the projects like e-office, Immigration, Visa and Foreigner's Registration & Tracking (IVFRT), UID, Pensions, Banking and posts at central level; e-Governance in Municipalities, Crime and Criminal Tracking Network & Systems, PDS, Health, e-panchayat, e-District and National Land Records Modernization Programme (NLRMP) at state level; e-procurement, e-Courts, e-Biz and Common Services Centres at integrated level.

Objectives

1) To understand the concept of DI and its services.
2) To examine the nine pillars of DI.
3) To study the impact of digitalization on society, environment and economy.
4) To evaluate the opportunities and challenges with special reference to DI.

Methodology

This paper is based on the secondary data of National & International Journals, articles, government reports, books, newspapers and magazines covering wide collection of academic literature on DI.

Review of Literature

According to Shamim (2016) DI initiatives were undertaken to attain the goals of "Education for All," "Information for All," "Broadband for All," "Leadership Structure," and "Global Industry Participation".Gupta and Arora (2015) examined the impact of DI project on India's rural sector. The study found that many schemes have been launched in DI to boost agriculture sector and entrepreneurship development in rural areas. Khan et al (2015) studied the concept of digitization along with the social economic and ecological benefits of digitization of knowledge and information. Digitization is the social transformation started by the massive adoption of digital technologies to share and manage digital information. Rani (2016) concluded that the DI project provides a huge opportunity to use the latest technology to redefine India the paradigms of service industry. It also pointed out that many projects may require some transformational process, reengineering, refinements to achieve the desired service level objectives. Midha (2016) concluded that DI is a great plan to develop India for knowledge future but its improper implementation due to inaccessibility and inflexibility to requisite can lead to its failure. Though DI programme is facing number of challenges yet if properly implemented it can make the best future of every citizen. Olalere et al. (2013) studied the concept of digitalization, its significance, features and challenges for the broadcast media in Nigeria. The study also analysed literatures on digitization and the extent to which it has impacted on the operations of broadcast media in Nigeria. Gulati (2016) study also highlighted the opportunities that pave the way for achieving the program's aim of making India the preferred choice for digital activities by both global and domestic investors and also how far the DI model can prove to be an attraction for the investors to invest in the sectors which are yet to achieve their full potential in India. Priyadarsini and Vijayaratnam (2016) discussed about components of DI and its nine pillars, adaption of 'look at Villages' policy and the smart villages driving towards smart India and the prerequisites of a smart villages cluster. The study concluded that Indian villages need to be more focused on basic things such as health care, sanity and education. Gawade et al (2016) in their paper studied that Digital Divide (DD) between different segments in the society. And identified the causes of the gap as a poor education system, a low literacy rate, and language barriers. It provides an overview of DI's vision, pillars, services and projects. Role of DI in empowering women is another aspect that has been looked upon in the study of Onkaragouda, Tattimani (2021). The survey discovered that women thought that DI aided in the development of their skills and positioned women as confident decision-makers and leaders. It was greatly improving the quality of women's lives through various initiatives. It was also seen that DI had the potential to digitally empower women through universal digital literacy and the availability of digital materials and services in Indian languages.

DI: A Step ahead towards Digital Empowerment and Knowledge Society

India has a vast digital footprint with a huge user base. There are 624.0 million internet users in India by January 2021. DI campaign was launched on 1st July 2015

with a vision to transform India into a digitally empowered society and knowledge economy' (Digital India, 2021). Its objective is to bring transformation to realize IT (Indian Talent) + IT (Information Technology) + IT (India Tomorrow). Digital governance, where people can act and react in accessing the government policies will reduce the paperwork and red-tapism that exist in the traditional bureaucratic governance.DI not only increased accessibility to education, health, agriculture and PDS but also took the governance to people's fingertips with the introduction of digital governance. Implementation of initiatives like Aadhaar, UPI and Digi Locker is ensuring faceless, cashless and paperless Governance that has laid the foundations of a strong, robust and secure DI. Thus, the idea of minimum government and maximum governance thrives for 'ease of doing business' principle. DI has set nine ambitious pillars for achieving digital empowerment of citizens and of the Knowledge Society in India. The nine pillars of DI aim at empowering the last person in the society to participate in the governance and to reap the benefits from the state's policies and contribute for national growth as well.

Impact of Digitalization

The consequences of the developments in the technicalities of ICT introduce the concept of digitization. The transformation from print to digital media for communication of information to the larger community is resulted from the growth of the Internet and now enables the tremendous amount of information accessible to every citizen. By the process of digitization, knowledge to an ever greater amount is being produced, processed, communicated and preserved digitally.

Social Impact:

Social sectors such as education, healthcare, and banking are unable to reach out to the citizens due to obstructions and limitations such as middleman, illiteracy, ignorance, poverty, lack of funds, information and investments. These challenges have led to an imbalanced growth in the rural and urban areas with marked differences in the economic and social status of the people in these areas. Modern ICT makes it easier for people to obtain access to services and resources. The penetration of mobile devices may be highly useful as a complementary channel to public service delivery apart from creation of entirely new services which may have an enormous impact on the quality of life of the users and lead to social modernization. Digital platforms can help farmers in know-how (crop choice, seed variety), context (weather, plant protection, cultivation best practices) and market information (market prices, market demand, logistics). The poor literacy rate in India is due to unavailability of physical infrastructure in rural and remote areas. This is where m-Education services can play an important role by reaching remote masses. According to estimates, the digital literacy in India is just 6.5% and the internet penetration is 20.83 out of 100 populations. The DI project will be helpful in providing real-time education and partly address the challenge of lack of teachers in education system through smart and virtual classrooms. Education to farmers, fisher men can be provided through mobile devices. The high speed network can provide the adequate infrastructure for online education platforms like MOOCs. Mobile and internet banking can improve the financial inclusion in the country and can create win-win situation for all parties in the value-chain by creating an interoperable ecosystem and revenue sharing business models. Factors such as a burgeoning population, poor doctor patient ratio (1:870), high infant mortality rate, increasing life expectancy, fewer quality physicians and a majority of the population living in remote villages, support and justify the need for telemedicine in the country. Digital platforms can help farmers in know-how (crop choice, seed variety), context (weather, plant protection, cultivation best practices) and market information (market prices, market demand, logistics).

Environmental Impact:

The major changes in the technology will not only bring changes in the economic system but also contributes to the environmental changes. The next generation technologies will help in lowering the carbon footprint by reducing fuel consumption, waste management, greener workplaces and thus leading to a greener ecosystem. The ICT sector helps in efficient management and usage of scarce and non-renewable resources. Cloud computing technology minimizes carbon emissions by improving mobility and flexibility.

Economic Impact:

According to analysts, the DI plan could boost GDP up to $1 trillion by 2025. It can play a key role in macro-economic factors such as GDP growth, employment generation, labour productivity, growth in number of businesses and revenue leakages for the Government. As per the World Bank report, a 10% increase in mobile and broadband penetration increases the per capita GDP by 0.81% and 1.38% respectively in the developing countries. India is the 2nd largest telecom market in the world with 915 million wireless subscribers and world's 3rd largest Internet market with almost 259 million broadband users. There is still a huge economic opportunity in India as the tele-density in rural India is only 45% where more than 65% of the population lives. Future growth of telecommunication industry in terms of number of subscribers is expected to come from rural areas as urban areas are saturated with a tele-density of more than 160%.

Challenges for DI

The main challenge is theDigital Divide (DD). The DD is a phenomenon wherein those who have access to ICT are benefited by the use of it. Their economic wellbeing is ensured in the form of highly paid jobs and more business opportunities, while those who do not have the access to ICT remain aloof of these benefits and hence comparatively they are in a disadvantageous position. The divide does not affect economicallyonly but socially as well. Hence the digital divide is the socio-economic difference between peoples in their access to ICT. The term also refers to gaps between groups in their ability to use ICTs due to varying literacy and technical skills and the gap in availability of quality, useful digital content. The divide is seen as a socio-economic problem. There are few challenges like most of people are not capable of using a simple mobile phone and there are many uneducated people who cannot understand the digital devices and technology. This digital illiteracy creates digital divide which leads to digital inequality and digital discrimination which needs to be addressed by the government. Although, government has initiated this programme but, it still lacks the basic infrastructure required to move digitally ahead. Few people are not able to afford all these facilities because of higher cost of electronics devices and internet. This created DD and reproducing digital inequality along with existing political, economic, educational and social inequalities. Cyber-crime is the most important significant issue nowadays. We don't feel safe about our data and details. Government should do work on it and engineers must be trained well in this endeavour.

Recommendations

1. Indian government need to start providing di literacy to every other citizen.
2. The government took initiatives could only be successful if people get involved in the ongoing digital transformation. The Educational Institutes like Schools, Colleges and Universities can create social awareness among the people of their locality about the initiatives and impart digital knowledge to the people.
3. to create awareness they also need to have the technical knowledge about the program and how to use the facilities provided by the government is required.
4. Social Community centres could be formed. People who are more digitally literate about the issues can help the digital illiterate people and experts can visit them to give the guidance from time to time.
5. People should be imparted with the Digital knowledge of factors which affect their savings and how they can maximise their saving or the facilities available for them to help them to do so.
6. People should also be made aware about the cyber security of their personal information regarding their accounts, online frauds and cyber-crimes.
7. The banking system must also be made robust as people need to trust the system before they go with the technological advancement.
8. For digital technology to be accessible to every citizen, significant efforts are needed to customise apps and services to cater to local needs.
9. The government should also focus on sustainable development and basic facilities of rural area before providing them digital services. These two have to go hand-in-hand.
10. It is recommended that every citizen must realize that such an important and enormous vision cannot be the government's job alone. We have to be an equal partner in this journey.

Conclusion

DI can help and aid us in making our country's condition socially and economically strong. But, the most important part of this initiative is realizing the value of digitalization and instead of depending only on ICT alone, one should be focused on the enhancement of following elements, such as literacy, basic infrastructure, overall business environment, regulatory environment, etc. Although, DI programme is facing some barriers, yet it has a great impact on India to make the best future of every citizen. A digitally empowered economy develops much faster, effectively and efficiently due to better utilisation of its capital as well as human resources. And India being a country with such a huge manpower resources, if utilised properly, can achieve unprecedented growth rate and put the country in top position along with the developed economies.

The Way Forward

Digitalization technology applications should be widespread to cover the rural and remote areas of the country so that the rural population can access internet for information that is useful to them. The government should examine the problems which pose a challenge for the e-governance projects and DI Transformation Project. The induction of technology alone will not improve people lives and governance rather there is a need to adopt a balanced approach for implementation of e-governance initiatives along with digitalisation programmes. With firm commitment towards digital empowerment, nation has the potential to transform itself and accomplish the desired goals of inclusive development and growth.

References

1. Digital India. (2021). https://www.digitalindia.gov.in/.
2. Gawade, Khandare, Raikar, Chopade (2016), Survey on Digital India Campaign, International Journal of Engineering Research in Computer Science and Engineering (IJERCSE) Vol 3, Issue 12, December 2016, ISSN (Online) 2394-2320.
3. Gbikpi, B., & Grote, J.R. (2002). From democratic government to participatory governance. In Participatory governance (pp. 17–34). versusVerlagfürSozialwissenschaften, Wiesbaden.
4. Gulati M. (2016) Digital India: Challenges & Opportunities, International Journal of Management, Information, vol. 10(4): pp.1-4.
5. Gupta, N., & Arora, K. (2015). Digital India: A Roadmap for the Development of Rural India. International Journal of Business Management, 2(2), 1333-1342.
6. Khan, S., Khan, S. and Aftab, M, (2015), Digitization and its Impact on Economy, International Journal of Digital Library Services, vol. 5(2), pp.138-149.
7. Kohli, A. (1991). Democracy and discontent: India's growing crisis of governability. Cambridge University Press.
8. Midha, R. (2016), Digital India: Barriers & Remedies, International Conference on Recent Innovations in Sciences, Management, Education and Technology, pp. 256-261.
9. MyGov.in. (2021). https://www.mygov.in/
10. Olalere, A.Q., Oyeyinka, O.T., Lateef, O, Olakunle, O.R., Kenneth, T.A., Rauf, G., Omolayo, J. and Nancy, N.O. (2013), The challenges of Digitization on the Broadcasting media in Nigeria, Arabian Journal of Business and Management Review, vol. 3(5), pp. 88-98.
11. Onkaragouda, Tattimani (2021)," The Role of Digital India in Rural Women Empowerment- A Case Study of Vijayapura District" OSR Journal of Humanities and Social Science (IOSR-JHSS) Volume 26, Issue 5, Series 2 (May. 2021) 37-48e-ISSN: 2279-0837, ISSN: 2279-0845.
12. Prainsack, B. (2020). The political economy of digital data: Introduction to the special issue. Policy Studies, 41(5), 439–446. https://doi.org/10.1080/01442872.2020.17235 19.
13. Shamim (2016), "Digital India – Scope, Impact, and Challenges" International Journal of Innovative Research in Advanced Engineering (IJIRAE), ISSN: 2349-2763, Issue 12, Volume 3 (December 2016).
14. Sheokand, K. and Gupta, N. (2017) "Digital India programme and impact of digitalisation on Indian economy, "Indian Journal of Economics and Development, vol. 5(5), pp.1-13.

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Revitalizing Trends towards Digitalized Banking: A Green-Sustainability Approach

Mr. Biki Digar[1], Dr. Partha Naskar[2]
[1]Doctoral Research Scholar, Vidyasagar University, Midnapore, West Bengal, India
[2]Joint Director (Accounts) Netaji Subhas Administrative Training Institute, Kolkata, West Bengal, India Personnel & Administrative Department, Government of West Bengal, Kolkata, India
Corresponding Author- Mr. Biki Digar
Email: biki21296@gmail.com
DOI-10.5281/zenodo.8035735

Abstract

The unprecedented Covid-19 pandemic ruined the world economies and has resulted threat in perennial long-term existence of long-term triple bottom line 'people, planet and profit'. At this intermittent phase the need for sustainable, digitalized eco-friendly green-banking practices is the call of the hour.The paper coverage attempts to explore the recent trends of adopting green banking practices in digitalized platform as a mediator of sustainable growth and development of the economy at large. The study focuses to identify perception level about green banking concept and traits, banking operations, lending policies and adoption level of delivery channels about green banking among general public. The research design is exploratory in nature and involves the usage of primary and secondary data. The primary data collection is done through non-probabilistic convenient sampling technique. The study derived multidimensional analysis of data in the domain of awareness and preference, traits, benefits, lending policy and delivery channels in the perspective of green banking. The coverage of the paper makes a realistic attempt in upholding the promotion and adoption of green banking through proponents of digital banking. The central theme of the study focuses the avenues of digitalized banking for spreading awareness of digitalized literacy and practices through green banking countrywide for sustainable economic progression in the days to come.

Keywords: Green-banking, Green-communication, Digitalization, Government

The unprecedented pandemic waveshave figured at every layer of the global economy leading to uncertainty-volatility-fluctuation across the globe. The disastrous impact poses a question mark on the long-term existence of business, economy, and society. Thus it's quite pertinent to reorient and rebuild the forces underlining the economy leading to the perennial development of the society at large. The context and the concern for change in financial diversity is the call of the hour and continuous effort needs to be initiated for adopting e-way in the development of green banking practices. With the recent increase in environmental awareness in the last decade many financial institutions are building agenda towards sustainable and responsible functionating keeping in mind the societal, human, environmental aspect at large. The traditional banking is predominantly aligned with achieving economic benefit. At this juncture the evolution of green banking comes into the scenario where banks visualised not solely the fund houses but responsible growth engine towards society and the environment. The sustainability in 21st century is become one of the most pertinent issue and adoption with utilization with green banking practices need to be prioritise in order to enable bank to grow as a socially responsible institution. The key objectives of profit maximisation in the banking business needs changes, transformation and makeover. In the post pandemic platform green banking business practices has assured a pathway to show consumers that's the financial institution think, care and concern about them along with the environment.

Review of Literature

Impact of Green Banking in India and Overview

Green banking is the new phenomenon evolve in today's financial sphere. The concept of green banking in India dates back in the year 2009 with State Bank of India (SBI) taking the whole hearted initiative in establishing high sustainability towards green banking. In broader aspect green banking maybe viewed as in developing inclusive banking practices which ensures sustainable economic development. In the new millennium the relevance for green banking its quite pertinent in every business activity which in turn creates environment platform for the business hemisphere. The demand and popularity of green banking its gaining momentum with potential to gain market share and substantial profit in the coming days. In India the benefits of green banking practices can be witnessed through reducing the carbon footprints and adaption of green street lending, recycling program, paperless banking, using energy efficient resources, green mortgages, green credit card, green saving account, uses of recycled material – all contributing towards promoting environmental sustainable business practices for creating a positive impact of the environment. 'Green banking' is the king of banking functionaries and the change factor for business survival across the growth. The optimistic and positive vibes of green banking is a new panacea for economic innovation, novel opportunities for financial and investment sector in India.

Unfolding Avenues of Bank Green Bonds: A Changing Paradigm of Financial Sector

In the present environment banks are expected to perform consistently and continuously amid transition phases of the pandemic climate. The growing popularity of banks is not only confine towards financial or non-financial interest but playing a promising role in attaining greener, sustainable, contributory real economy worldwide. Green bonds represent a vital tool available to financial institution for green lending purposes. The potential for the development of the green bonds is quite intended towards initiating sustainable finance objectives for different green bond customers. The very essence of green bank initiative viz, the environmental score from environmental-social-governance (ESG), direct and indirect carbon dioxide emission and a proxy for the proportion of the credit exposure for adhering the significant and immediate changes in the environment practices. Study reveals that in the process issuance bank green bond the impact is less effective and less transparent in the domain of green lending practices and intensive recourse to green banking financing projects that the issuance of green bond induces a credible signal towards organisation engagement with regards to climate factor for equity investor at large.The impact of bank environmental metrices is quite pertinent in the present-day business hemisphere. Awareness and willingness followed by initiative and implementation should be the prime focused towards green bond practices and the positive drive for immediate commitment to reduce the environmental degradation. The potential bank green bond represents the key instrument to achieve the climate alignment for consistent and sustainable future for banking sector in the coming day.

Collaborating Environmental Sustainability and Green Banking: An Outline

The most magnificent gift bestowed upon mankind is the nature-environment. This planet is the resting ground for the all the living being and hence concern, care and commitment should be priority for every individual. In recent time sustainability has emerged as a growing consensus in business environment. The twin feather of globalisation and industrialisation has kept a symbolic mark of prosperity and progression of present-day economy. Instances are there in recent time that occurrence of industrialdisaster and natural disaster in the last three decade has a close connectivity with uneven industrialisation. At this very juncture the need and the emergence of environmental sustainability has become the four most strategy in most organisation around the globe. Initiatives and offering of environmentally friendly product, green outputs and services to the consumer has become the realistic way of organisational practices.The contribution of banking industry in Indian financial system has undergone frequent reformed in 1990. Green

banking approach blended with environmental sustainability is not only benefiting the environment but act as a lifeline for organisation. In the present turbulent fluctuating economy, the banks should understand the relevance and necessity of the environment towards economic progress of a nation. Banks should build agendas focusing green initiative which interned benefit environment on one hand and helps in cost and operational efficiency on the others. Can be rightly opined that willingness and arch to adopt, accept and adhere green practices will result 'living well within the environment'.

The Dimensions of Green CSR and Green Banking: People-Planet-Profit Approach

In recent times business houses are emphasizing more on the parameters of qualitative excellence and performance level at large. The socio-economic benefit offered by organisation play a positive impact on organisation goodwill and trustworthiness. The prime focus of green CSR ends toward the creation of customer loyalty and protecting the environment for sustainable work life. The mediating role played by Green CSR is not only confined towards moderating variable but consider as a firm investment with in turn creates the value for the firm. The proponents of Green CSR initiative can be outline.

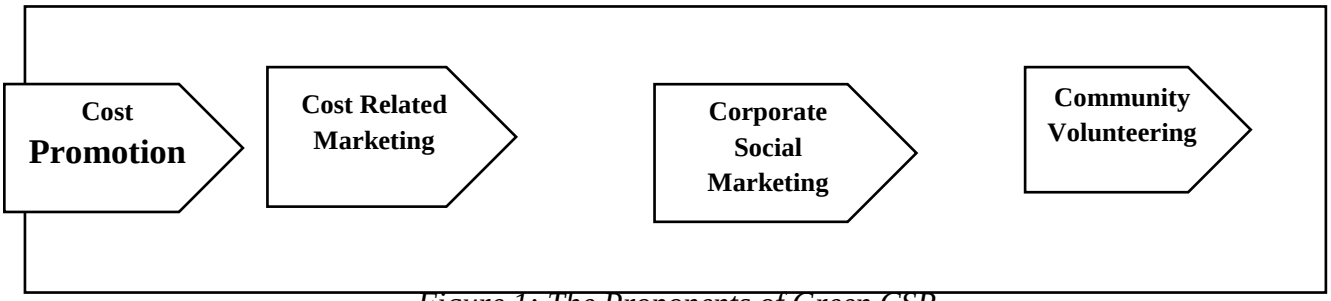


Figure 1: The Proponents of Green CSR

The conceptualisation of CSR promotes an understanding to develop the efforts to reduce negative impact on one hand and building a value system in business. In the present cybernetic platform green CSR can play a inducement factor to manage organisation people, environment leading to socially responsible organisation concern about the environment with the ability to compete economically in the days to come.

Green Financing for Corporate Governance: Prospect and Challenges

In the present global context sustainability has emerged as buzzword in corporate hemisphere. The vibes and waves of sustainability has touched all sectors of the economy at large. Coincidently the lifeblood of all industries happens to be financial sector the backbone of banking economy. It is the banking industry which act as a financial flow of the economy with due care, concern and creativity for the environment. Greenery and environment are complementary to each other. The environmental footprints can be traced through green financing in the banking industry to the various development model, design with sustainability and environment. It can be widely accepted that the contribution of financial services sector to the global economy plays a pivotal role in industrialisation development and progress. Thus, the relevance and importance of banks towards developing a sustainable economy for a sustainable financial system is the call of the hour. Applicability of green concept automatically add value for the economy with the commitment towards activation of green concept in the banking sector. Focusing attention in creating equitable balance between economy and environment is the noble dimension of green financing in the banking sector.It is widely understood that our global habited has undergone severe climatic changes and environmental issue due to industrialisation. Therefore, the role of banking institution to handle financial flow of the economy with a bonding relationship between green finance and corporate sustainability comes into the scenario. It is recommended that green finance concept ands corporate governance should function simultaneously which will create long tern economic sustainability for mankind across the globe.

Customer Perspective on Green Banking: A Changing Scenario

The present society is confronting complicated issues in climate change. Though banking activities are physically related to the environment but external impact of the customer activities affect substantially on banking operation. Customers perception has gone a drastic makeover in the post pandemic climate where a positive attempt is drawn in building harmonious

relationship within man and nature. Recent initiative taken by public and private sector bank has pave the way implementing green processes through green reward taking account, use of solar and wind energy, energy consciousness and use of recycled waste paper all adding towards change in the customer behavioural pattern towards green banking. Green banking is the future of upcoming economy consisting smarter pool of customers, clients and functionaries. Adopting green banking practices with environmental awareness will lead and create long-term values of banking business in the coming era.

Objectives of the Study

- To understand the level of perception among general public about green banking as an effective tool of green communication for holistic development of beneficiaries of banking services.
- To identify perception level about green banking concept and traits, banking operations, lending policies and adoption level of delivery channels about green banking among general public.

Research Methodology

The research design is exploratory in nature and involves the usage of primary and secondary data. The primary data collection is done through non-probabilistic convenient sampling technique. The sample size comprises of 103 respondents located in and around Kolkata region. Likert scaling technique is used to obtain data in a scale of 1 to 5. The mean score of the responses are calculated by dividing the total score obtained by total number of respondents. The mean scores describe the whole data which is then ranked accordingly from highest to lowest. Rank comparison is used for further analysis of data.

Data analysis& Findings

The study derived a multidimensional analysis of data, a brief of which are explained in the given illustrations.

Awareness and Preference of the General Public about the Green Banking Concept

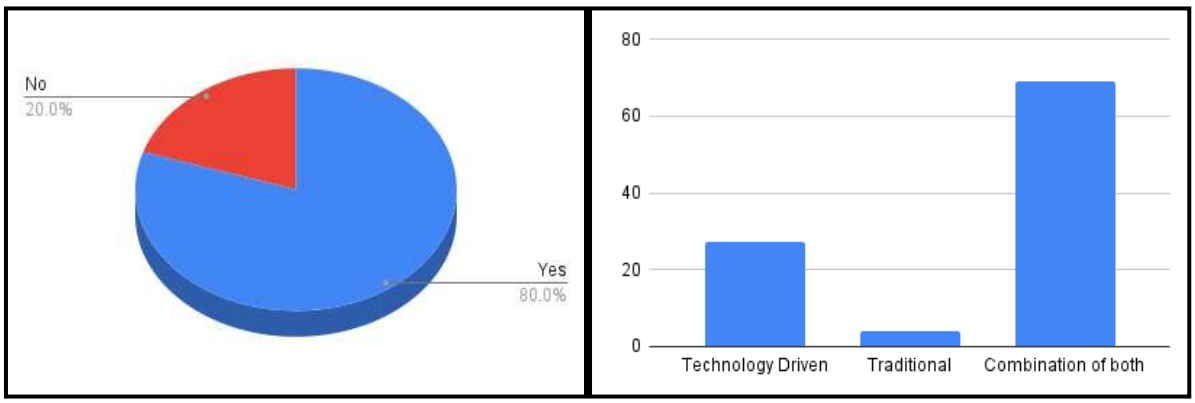


Figure - 2Figure - 3

The data shows more than 80% of people are aware of green banking concept and nearly of 70% prefer combined banking services. It shows that 77.7% of the total 103 respondents are well apprehended with the concept of green banking. Again 26.2% of the total samples are infavour oftechnology driven services and. 72% samples are favour ofcombination of both services.

Benefits in Day to Day Banking Operations

Green banking in the form of digital banking through digitization of banking operations provides banking services at the touch of the finger. The digital banking is well accepted among customers. Customers prefer digital banking due to fast and efficient services, so it is ranked highest.

Benefits in Lending Policy

The perception of people that if green banking adopted by banks in lending policy it will lead to development of sustainable and social infrastructure. Moreover the credit policy of banks will be guided by ethical principles. These parameters are ranked topmost by people.

Implications of the Study

The proponents of green banking and its practices can usher a new stepping stone to move forward in this pandemic-stricken banking through a mix of ethical and digital connotations for holistic transformation of the banking sector. The issue of global warming can also be addressed as the green banking practices will prevent banks from funding industries contributing to the pollution or promoting polluting technologies. Thus, it can be rightly claimed that green banking and its practices will lead to the cleanliness of nature, society, business culture and the people living in the society thereby leading to sustainability of people,

planet and profit in the true sense of the term.

References

1. Berman, S., & Marshall, A. (2014). The next digital transformation: from an individual-centeredto an everyone-to-everyone economy. Strategy & Leadership, 42(5), 9-17. Development.
2. Dipika(2015), Green banking in India: A study of various strategies adopt by banks for sustainable development, International Journal of Engineering Research and Technology, ISSN: 2278-0181, Volume 3, Issue 10.
3. Dr. Sarita Bahil, (2012). Green Banking "The new strategic imperative, Asian journal of research in business economics and management (ISSN: 2249-7307) Vol 2, issue 2.
4. Gianfrate, G., and Peri, M. (2019). The green advantage: Exploring the convenience of issuinggreen bonds. Journal of Cleaner Production 219, 127–135.
5. Khosla, R. & Munjal, P. (2013) Demographic Inequalities in Using E-Banking Services: A Studyof Chandigarh, Indian Journal of Finance, 7(4), 13-18
6. Krushelnytska, G., (2016)., Introduction to Green Finance., Global Environmental Facility., PP 1-4
7. Siemens, G., (2014); Connectivism: A Learning Theory for the Digital Age.
8. Sharlyn Lauby(2018) Brace for Changing Times: Digital Transformation Opens a Window forthe Future of Employee Engagement, Retrieved fromhttps://www.talentmap.com/change-digitization-employee-engagement/
9. Sneison J., (2009)., Green is Good: Sustainability, Profitability and a New Paradigm for Corporate Governance. PP 989 - 1022.
10. Westerman, G., Bonnet, D., & McAfee, A. (2014). Leading digital: Turning technology intobusiness transformation. Harvard Business Press.

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Awareness of Digital Literacy in Rural Areas: A case of Karnataka State

Ashwini Indargi [1] , Pooja Lutimath [2]
[1]Assistant Professor, Department of Commerce. SJMVS Arts & Commerce College for Women, J.C. Nagar Hubballi
[2]Lecturer, Department of Commerce. SJMVS Arts & Commerce College for Women, J.C. Nagar Hubballi.
Corresponding Author- Ashwini Indargi
Email: ashviiniindargi@gmail.com
DOI- 10.5281/zenodo.8035745

Abstract:
Digital literacy means acquiring the knowledge& Skills to communicate information by utilizing digital media platforms like internet,smartphones,laptops,tablets.ICT acts as a catalytic intervention for empowering rural India as it accelerates economic development in rural areas by helping the people in accessing the information in order to bridge the gap.In this paper we will study the meaning of Digital literacy, Percentage of awareness of digital literacy in rural areas of Karnataka State, Opportunities & Challenges among Rural areas for this researcher collected and analysed Secondary data and recommended suitable suggestions.

Keywords: Digital literacy, Technology, Opportunities and Challenges.

Introduction:

Digital literacy is the ability to use digital tools and platforms to access, evaluate, and communicate information effectively. In today's world, where technology has become an integral part of our lives, digital literacy is a crucial skill that enables individuals to participate in the digital world.. Digital literacy has become essential in various areas, including education, healthcare, business, and government, as it offers many benefits such as increased efficiency, improved communication, and access to information. The Government of India has been taking several measures to promote and encourage digital payments in the country. Digital India Programme: National Digital Literacy Mission (NDLM) or Digital Saksharata Abhiyan (DISHA) or Digital India is a flagship programme of the Indian government led by Prime Minister Shri Narendra Modi. To transform India into a digitally inclusive and leading knowledge society, Hon' Prime Minister Shri Narendra Modi launched the Digital India programme on July 1, 2015. This vision can become a reality only when villages across the country become a vibrant part of this mission. Common Services Centres (CSCs) are enabling this vision as access points for delivering e-governance services and digital literacy in rural and remote areas. The mission aims to make one person in every family e-literate, empowering them digitally and mainly focusing on rural population. The government has set up state-wise training centres and partners who are engaged in conducting the course and educating the citizens enrolled in the programme.

Methodology:In this paper the data collected fromSecondary data such as Journals, websites, Government records, Newspapers etc.

Objectives of the paper:

1. To know the initiatives taken by the government to increase the digital literacy in rural area of Karnataka.
2. To know the opportunities available to improve the digital literacy in rural area of Karnataka.
3. To know the challenges faced by the government to improve the digital literacy in rural area of Karnataka.

Government of Karnataka have taken various initiatives to increase digital literacy in rural area of Karnataka

The government of Karnataka has been implementing various initiatives to

increase digital literacy in the rural areas of the state. These initiatives include the following training programs:Digital Saksharata Abhiyan (DISHA): The DISHA program is a part of the National Digital Literacy Mission (NDLM) and aims to provide digital literacy training to people in rural and remote areas of Karnataka. The program provides training on basic computer skills, accessing the internet, using digital devices, and using digital services.Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA): The PMGDISHA program aims to provide digital literacy to people in rural areas of Karnatakaespecially women, Scheduled Castes (SC), Scheduled Tribes (ST), Minorities, and Below Poverty Line (BPL) households.The program is implemented by Common Service Centres (CSCs) in various districts of Karnataka.Digital India Internship Scheme: The Digital India Internship Scheme is aimed at providing internship opportunities to young people in Karnataka to work in the digital sector. The program provides training on various aspects of the digital economy, including digital marketing, e-commerce, and online entrepreneurship. National Institute of Electronics and Information Technology The

Karnataka has taken several e-governance initiatives to improve digital literacy and promote technology adoption among rural communities

The policy-makers in India tend to justify the adoption and expansion of e-governance on the grounds that it costs less, reduces waste, promotes transparency, eliminates corruption, generates possibilities to resolve rural poverty and inequality, and guarantees a better future for citizens.

1. **Government to Citizen Initiatives:** • Computerization of land records: In collaboration with NIC. Ensuring that landowners get computerized copies of ownership, crop and tenancy and updated copies of Records of Rights (RoRs) on demand. • Bhoomi project: Online delivery of Land Records. Self-sustainable e-Governance project for the computerized delivery of 20 million rural land records to 6.7 million farmers through 177 Government-owned kiosks in the State of Karnataka.
2. **Gram Panchayat Services**: The Karnataka State Government has initiated the e-Governance project called Bhoomi to provide computerized land records and other services to the rural population. The project has digitized land records of 20 million farmers in the state and is available in more than 6,000 villages through 177 Citizen Service Centres (CSCs) and 250 AtaljiJanasnehiKendras (AJKs).
3. **CSCs:** The state has set up more than 700 Common Service Centres (CSCs) across rural areas in Karnataka. These centres provide access to digital services such as Internet, computer education, and digital literacy training, online bill payments, and various government schemes.
4. **Digital Literacy Mission:** The state government has launched the Digital Literacy Mission to promote digital literacy among rural communities. Under this initiative, various digital literacy programs are conducted in government schools and colleges, and community centres.
5. **Mobile Computer Literacy:** The Karnataka State Government also runs a Mobile Computer Literacy program to provide computer education and digital literacy training to the rural population. The program is conducted using a mobile van equipped with computers and Internet connectivity, which travels to different villages and provides training to the locals.

The Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) is being implemented since February 2017 as a flagship programme of the government of India's Digital India campaign. The main objective of this scheme is to impart IT literacy to the rural masses for bridging the rural–urban digital divide. Following are the criteria for participation in the scheme:

- the beneficiary should be digitally illiterate.
- only one person per eligible household would be considered for training.
- the beneficiary should be in the age group of 14–60 years.

Priority would be given to:

Non-Smartphone users, Antyodayahouseholds, College drop-outs, beneficiaries of Adult literacy mission; and

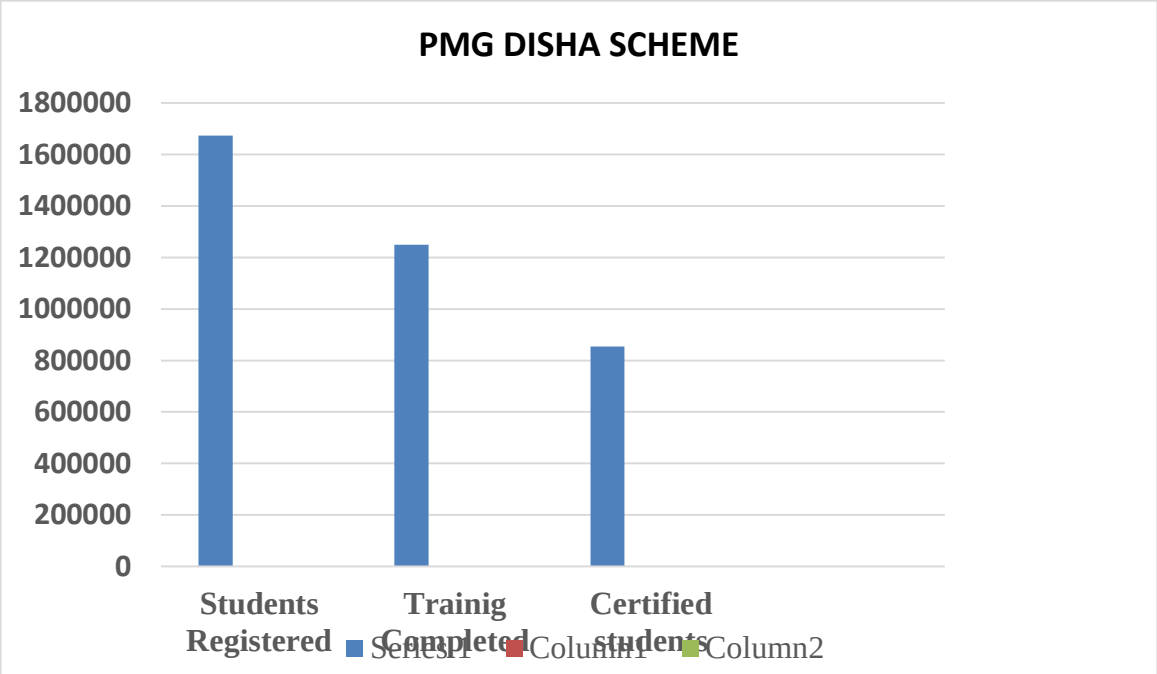
digitally illiterate school students of standards 9th to 12th, who are not being provided ICT training in their school. Preference would also be given to Scheduled Castes (SCs), Scheduled Tribes (STs), Minorities, Below the Poverty Line (BPL) families, women, and differently abled persons.

Indicative Karnataka State Targets for Digital Literacy through Pmgdisha Scheme

Sl. No	State	Target
1	Karnataka	2705000

Table 1. The students registered for PMGDISHA scheme in Karnataka

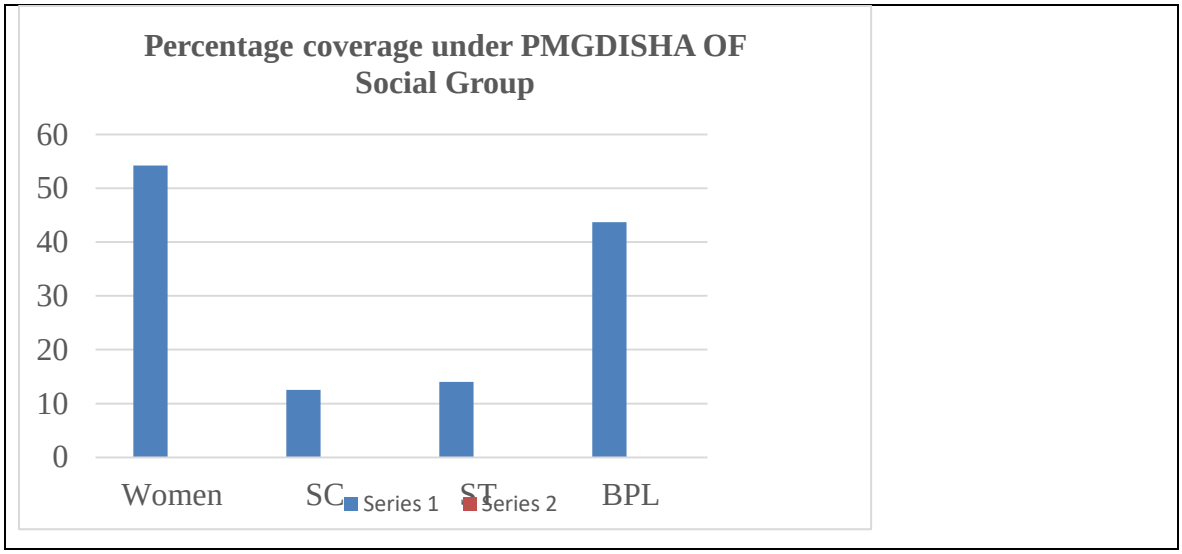
Sl. No	State	Students Registered	Training Completed	Certified Students
1	Karnataka	1673200	1249322	853840



Out of the total number of students who registered for the PMGDISHA scheme in Karnataka, which is 1,673,200, 74.6% of them (1,249,322) completed the training. This indicates a significant interest among the people in Karnataka to learn about digital technologies and become digitally literateHowever, the percentage of students who completed the training but did not get certified is quite high at 31.7% (396,482). This indicates a need for the program authorities to look into the reasons why these students did not get certified and take measures to improve the certification rate.

Table 2. The table shows percentage coverage under **PMGDISHA of Social group of Karnataka**

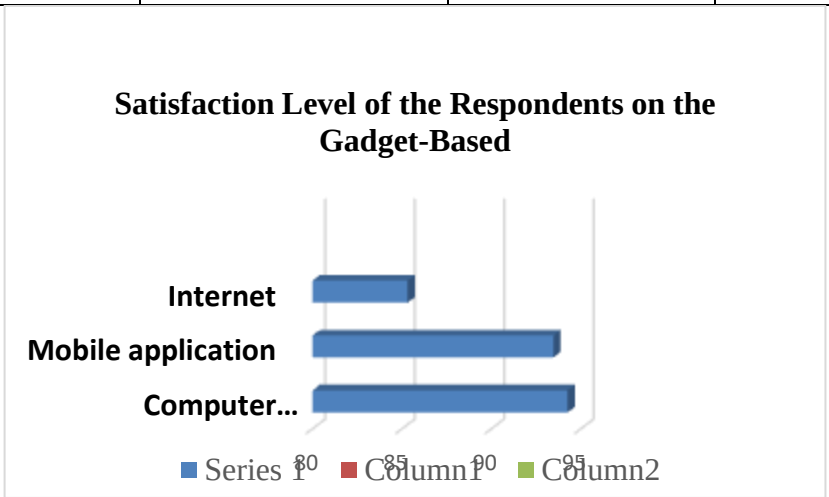
Women	Scheduled Caste	Scheduled Tribe	BPL
54.27%	**12.53%**	**14.00%**	**43.73%**



From the analysis of the data, we can see that the coverage across prioritized social groups in Karnataka is not uniform. Women have the highest coverage percentage at 54.27%, while SC and ST have lower coverage percentages of 12.53% and 14.00%, respectively.Furthermore, the coverage percentage for BPL/Antyodaya is 43.73%, which is higher than the coverage percentages for SC and ST but lower than the coverage percentage for women. This suggests that efforts may need to be made to improve the coverage of SC and ST in Karnataka..

Table 3. Satisfaction Level of the Respondents on the Gadget-Based Content of PMGDISHA (%)

State	Computer application	Mobile Application	Internet
Karnataka	**94.27**	**93.47**	**85.33**



Conclusion:

From the analysis of the data, we can see that the satisfaction level of respondents on the gadget-based content of PMGDISHA is quite high in Karnataka state. The satisfaction levels for computer application and mobile application are almost the same, at 94.27% and 93.47%, respectively, indicating that respondents are equally satisfied with both applications.However, the satisfaction level for the internet is slightly lower, at 85.33%. Overall, the data indicates that the gadget-based content of PMGDISHA has been well-received by respondents in Karnataka state, with high satisfaction levels reported for both computer and mobile applications.

II. There are several opportunities available for rural people in Karnataka to increase their digital literacy. Some of these opportunities are:

1. **CSC (Common Service Centres):** The government has set up Common Service Centres (CSCs) in many rural areas of Karnataka. These centres provide various digital services to people such as internet access, computer education, and digital payment services. Rural people can take advantage of these services to enhance their digital literacy.
2. **Digital Literacy Programs**: Many organizations and NGOs run digital literacy programs in rural areas. These programs aim to provide basic computer and internet skills to rural people..
3. **Mobile Internet:** With the availability of affordable smartphones and mobile data, people in rural areas can easily access the internet. There are many apps and online courses available that can help rural people to learn digital skills.
4. **E-Governance:** The Karnataka government has implemented various e-governance initiatives such as e-panchayat, e-District, and many othershows to access and use these services to increase their digital literacy.
5. **Community Learning:** Community learning can also be a great way to increase digital literacy among rural people. Local community centres, schools, and libraries can organize digital literacy workshops and classes for the benefit of rural people.Overall, there are several opportunities available for rural people in Karnataka to increase their digital literacy. It is important for government and private organizations to continue to invest in these initiatives to bridge the digital divide between urban and rural.

III. Improving digital literacy in rural areas of Karnataka presents several challenges for the government. Some of these challenges include:

Lack of Infrastructure: One of the primary challenges that government is facing is the lack of infrastructure and many rural areas do not have access to reliable electricity, let alone internet connectivity.

Limited Access to Technology: In addition to infrastructure challenges, many rural areas have limited access to technology. Rural households may not have access to computers or smartphones, which can limit their ability to participate in digital literacy programs.

Language Barriers: Karnataka has a diverse population, and many people of rural areas may know the English or even the official language of the state. This language barrier can make it difficult for them to understand digital concepts and participate in digital literacy programs which is provided by the government.

Lack of Awareness: Another challenge is the lack of awareness of the benefits of digital literacy. Many people in rural areas may not understand the importance and benefits of being digitally literate and how it can improve their present and future lives. The government needs to create awareness campaigns to educate people about the benefits of digital literacy.

Lack of expertise- Expertise are not available in different department of government for immediate repair of hardware/networking

Struggle to change-There is hesitation in the mind of citizens to move from manually maintained system to automated based system.

Improving digital literacy in rural areas of Karnataka is essential for the overall development of the state. However, it presents several challenges that the government needs to overcome to ensure that digital literacy programs are successful.

Conclusion:

Digital literacy among people plays very important role for the development of the country, Both the Rural and Urban areashould be literate with digitalization and how to use the digital products .In this paper I have discussed what are the initiatives have taken by government to improve the digital literacy among rural people of Karnataka ,but still government have to take some more measures to increase the percentage of Pradhan Mantri Gramin DISHA Scheme in rural area of Karnataka to get digital literate among people, This suggests that there may be some areas for improvement in the content related to internet usage, or there may be challenges in providing access to internet services in certain areas of Karnataka. Overall, there are several opportunities available for rural people in Karnataka to increase their digital literacy. It is important for government and private organizations to continue to invest in these initiatives to bridge the digital divide between urban and rural. However, it also

presents several challenges that the government needs to overcome to ensure that digital literacy programs are successful. The government needs to address issues such as lack of infrastructure, low internet penetration, and limited access to technology. Additionally, they need to create awareness about the importance of digital literacy and provide training and support to people in rural areas.

Reference

1.Suhasini Srivastava, "Role of ICT in E-governance and Rural Development: An Indian Scenario", New Delhi Publishers, 2017.1

2. Veeranjeaneyulu K and Sudha Rani D V, "Information Sources and Services for Rural Development", IJILS, Vol. 3(3-4), 2000.

3.http://www.ictsds.karnataka.gov.in/?q=project/chetana-empowering-girls-with-technology-department-of-it%2C-bt-and-s%26t%2C-government-of-karnataka

4.Government of India (2017). Telecom Statistics India 2017.New Delhi: Department of Telecommunications, Ministry of Communication, Government of India.

5.Reddy, P.B.S. (2020) 'Review of Literature in Digital Literacy.', International Journal of Technoethics, Volume 11(Issue 2).

6. IOSR Journal of Humanities And Social Science (IOSR-JHSS) Volume 26, Issue 5, Series 2 (May. 2021) 37-48 e-ISSN: 2279-0837, p-ISSN: 2279-0845

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Digital India: Emerging Technology to Lead the World

Dr. Namrata M[1], Dr. Vadiraj B Tangod[2]
[1]Assistant Professor. Department of Home Science and Fashion Technology
[2]Associate Professor, Department of Physics
Government First Grade College for Women's, Opposite to R N Shetty Stadium office,
Dharwad – 580008. Karnataka, India
Corresponding Author- Dr. Namrata M
Email- dr..nsagadi@gmail.com
DOI-10.5281/zenodo.8035755

Abstract

Digital India is an ambitious program to transform India into a digitally empowered economy and emerge as one of the strongest countries in the world. This program was launched on July 1st, 2015, by our honorable Prime Minister, Mr. Narendra Modi. The goal of this idea is to create a responsible, transparent, and participatory system. These improve people's lives in a variety of ways and will have a positive impact on the economy and society. By bringing synchronization and coordination to public accountability, digitally connecting and delivering government programs and services, and mobilizing the capability of information technology across government departments, the Indian government hopes to transform India into a knowledge-based, economically robust, digitally empowered society with good governance for citizens. The 'Digital India' effort can bring immense changes in the fields of banking, agriculture, education, medical care, administrative services, insurance, infrastructure, automation, etc. Applications of digital India are innumerable, and all these applications make India one of the most emerging nations in the world.

Keywords – Digital India, Digital Technology, E-governance, Innovations

Introduction

Today, living without technology is unthinkable. The power of digitization is one of the most significant technologies of the twenty-first century. It is the system that makes it possible for people to communicate internationally. A digitally empowered society and knowledge economy are the goals of the plan called "Digital India." It was introduced on 2nd July 2015 with the goal of ensuring that residents may access government services online by enhancing online infrastructure, expanding internet connectivity, or giving the nation digital empowerment. It is made up of the following three primary components are Digital infrastructure, Digital service delivery and Digital literacy

Several departments are part of the overall "Digital India" plan. The government will be ready for the huge program by connecting every service e-power and ensuring that information and services provided by the government are available anywhere, anytime, on any user-friendly and secure device. The aim of Digital India is to make available Digital services in Indian languages. The Digital India initiative could help in achieving the objectives of: Universal education, General information, Broadband access for everyone and The leadership structures

India's Vision For Digital

The vision centers on three key areas:

1. The utility of digital infrastructure for every citizen: According to this vision, public services like property records, certifications, and many others would be made available online or via the public cloud and will include high-speed internet as a key utility. It provides a safe and secure online environment for the nation.
2. Governance and services on demand: In accordance with this vision, all government information and services are accessible in real-time via online and mobile platforms. It offers everyone a single point of access and makes financial transactions electronic and cashless.

3. Digital citizen empowerment: All digital resources would be widely accessible in Indian languages. All records and certificates will be accessible to everyone via the cloud.

Pillars Of Digital India

The government aims to target nine 'Pillars of Digital India' which are as follows:-

1. Broadband highways - Broadband for all rural and urban

2. Universal access to mobile connectivity - Increasing networking services

3. Public Internet access program – Concept of CSCs (Common Service Centres)

4. Post offices - Upgradation of all kind of services

5. e-Governance - To reform government through technology, Online application and tracking interface between departments, Quick response, analyze and resolve persistent problems and much more.

6. e-Kranti - Technology for Education, Health, Farmers, Security, Justice and Financial inclusion

7. Information for all citizens

8. **Electronic manufacturing** – Make in India implementation

9. IT jobs - Train people in the small town & villages for IT sector jobs

10. Early harvest program - e-greetings, e-books, e-entertainment, weather updates and Public Wi-Fi hotspot, live locations etc

Digital India Initiatives

A new idea for connecting with people in times of demographic and socioeconomic catastrophe is digital connectedness. By putting a focus on digital literacy, Digital India promises to transform India into a nation that is digitally enabled. The actions conducted as part of the Digital India program include

a. **Digital payments in India**- The transition from a cash-based to a card-based and mobile transaction economy has been significant. All modes of transfer have exhibited positive growth, including Real Time Gross Settlement (RTGS), National Electronic Funds Transfer (NEFT), debit cards, digital wallets, and Unified Payments Interests (UPI).

b. **Bharat Net** - Bharat Net is the world's largest rural broadband project, connecting 2.5 lakh Gramm Panchayats across India using optical fiber to provide broadband connectivity. Prior to 2014, just a few dozen Panchayats were linked to an optical fiber network. By March 2023, the Bharat Net scheme had linked 1.5 lakh gram Panchayats.

E – health transformation in the health industry- Because of the role played by technology, the delivery of health services has become an efficient service. The healthcare industry is facing major changes in data storage, sharing, and access, as well as how services are delivered. The following are health-related ICT initiatives. Electronic health records such as Individual health record, Telemedicine, Systems for chronic disease management, Clinical decision support, Electronic prescription transfer, Radio frequency identification and Bar-coding, Business intelligence in disease pattern detection etc.

d. **Digital health with e-hospital** - E-hospital is an initiative of the Ministry of Electronics and Information Technology's Digital India plan. The e-Hospital application is a Hospital Management Information System (HMIS) for internal hospital operations and processes.

e. **Smart Cities** – On June 25, 2015, the government of India launched the Smart Cities Mission with the goal of improving the quality of life and accelerating growth in the urban sector. It prioritizes the development of 109

smart cities by 2022. The mission strategy for smart cities includes. Three models of area -based development are presented in a step-by-step manner are Retrofitting, Redevelopment and Pan - city initiative in which at least one Smart Solution has been applied city-wide.

f. **My Gov** – My Gov is a one-of-a-kind citizen engagement and crowd sourcing platform that engages citizens in policy formation and program implementation, as well as fosters citizen-government partnerships to drive inclusive growth in India.

g. **Digital farming** - The state government has also set up a network of weather stations and soil sensors to collect data on weather patterns, soil moisture, and nutrient levels. This data is used to help farmers make informed decisions about crop planting, irrigation, and fertilization. Our Karnataka state government has also set up a network of weather stations and soil sensors to collect data on weather patterns, soil moisture, and nutrient levels. This data is used to help farmers make informed decisions about crop planting, irrigation, and fertilization.

h. **Common Services Centers (CSC**) - The CSC is a strategic cornerstone of the National E-governance Plan (NeGP) approved by the government in May 2006. CSCs are the centers through which e-governance is made available to the villagers as a way of the village-level Entrepreneur model being followed to empower locals. The main focus of CSCs is Agriculture service, Education and training services, Health services, Rural banking and insurance services, Entertainment services, Utility services and Commercial services.

i. **Digitization of post offices** - networking all post offices, and enabling digital payments.

j. **Universal Access to mobile** - 55600 villages have been given mobile coverage.

k. **Public WiFi hotspots** - provision of local area hotspots especially public places.

New-Age Digital Technologies routing India towards growth

The Indian technological environment has undergone a significant transition during the last 20 years. The introduction of cutting-edge technology has elevated the position of telecom players, who are now more than just providers of voice and data services but also enablers of the nation's growing digital revolution. The top technologies, both established and developing, that are revolutionizing the nation are listed below:

1. Cloud computing gets popular

The use of cloud computing is rapidly expanding in this nation. India is the second-largest and fastest-expanding market for cloud services in the Asia-Pacific region, after China. Cloud computing, in its broadest sense, refers to the provision of IT services via the internet without the use of extra infrastructure.

2. Automated Business Processes

RPA (Robotic Process Automation) is gaining hold in a number of industries and is modernizing how business processes, IT support, workflow, remote infrastructure, and back-office labour are managed. RPA is a superior resource-saving method for large call centres and for customer interactions since it can respond to questions in natural language.

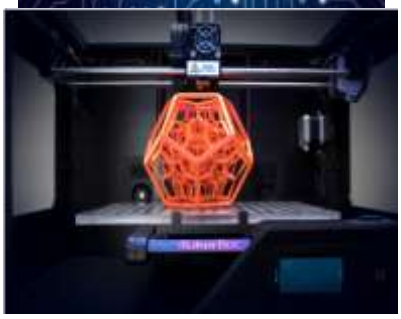
3. AI makes telecom smart

The next wave of automation has been brought on by the development of artificial intelligence (AI). AI has allowed businesses to reduce human interaction and drive growth by modernizing business processes and producing cognitive insights. Deep-learning algorithms make it easier to analyze past behaviour to forecast clients' future purchasing decisions. Digital platforms powered by AI, like chatbots, have created new opportunities for elevating the consumer experience.

Block chain buzz

The banking industry is drawn to block chain because of its salient characteristics, including decentralization, immutability, and transparency. The sector can gain from blockchain applications by reducing the likelihood of fraud. Additionally, it offers an extremely high level of safety and security for the transfer of data, information, and money.

3D printing for prototyping



Businesses continue to use 3D printing mostly for prototyping since it offers the chance to shorten time to market for new products and new product development. The use of technology may enable manufacturers to switch from mass manufacturing to fully customised production as well as from centralised to distributed production.

Pay with a tap and NFC

Near-field communication (NFC) is a short-range connectivity technology that designed specifically for intuitive, simple, and secure communications between electronic devices. It is a development of radio frequency identification (RFID) technology. For smooth transactions, NFC is used by a number of digital wallets, including Google Pay.

4. Future 5G

Given its enormous potential to boost network speeds and connectivity, 5G has generated buzz in the industry. In comparison to 4G, 5G is anticipated to provide network speeds of up to 10 Gbps and 1,000 times more bandwidth per unit area.

Barriers & Remedies

Digital India is a great plan, but its improper implementation due to inaccessibility & inflexibility to requisite can lead to its failure. There are few barriers to the Digital India program such as Each pillar has its own barriers, Infrastructure deficit such as lack of towers, especially in the countryside, Implementing entities in the actual field and Auxiliary services such as health, education, banking, governance, etc may not be well developed

We can overcome these barriers by following these remedies such as A few new programs may be needed particularly in electronics manufacturing and skill development; the Government should conduct seminars to aware people of digital services, mandate a lecture about Digital India in every educational institute and provide a help center in each state to solve public issues.

Conclusions

To conclude the Digital India program is a flagship program of the government of India to shape by connectivity and technological opportunity. It is a vision to transform India into a digitally empowered society and knowledge economy. It is a good effort to develop India. Although the digital India program is facing some barriers, it has a great impact on India to make the best future for every citizen. We Indians and others should work together to shape the knowledge economy. More employment prospects will open for the youth, which will boost the nation's economy. The Digital India campaign is a welcome step in shaping India of the 21st century powered by connectivity and technological opportunity. In short, this paper focuses on the key of barriers and provides remedies to prevent the challenging facing the Indian people.

References

1. Borah B. (2021). Digital India: Challenges & prospects. *European Journal of Molecular & Clinical Medicine*, 7(3), 525-530.
2. Goswami, H. (2016). Opportunities and challenges of digital - India program. *International Education and Research Journal*, *2*(11), 78-79.
3. Kedar, M. S. (2015). Digital India's new way of innovating- India

digitally. *International Research Journal of Multidisciplinary Studies*, *1*(4), 34-49.
4. Athique, A. (2019). A great leap of faith: The cashless agenda in Digital India - *new media & society*, *21*(8), 1697-1713.
5. http://www.csiindia.org/communications/CSIC_April_2015.pdf
6. https://tele.net.in/20-tech-trends-new-age-technologies-steering-indias-growth-2/
7. http://www.ijarcsse.com/docs/papers/Volume_5/8_August2015/V5I8-0192.pdf
8. http://pib.nic.in/newsite/PrintRelease.aspx?relid=108926
9. http://digitalindia.gov.in/content/approach-and-methodology

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

"A Study on the implications of Cashless Transactions on Indian Economy"

Miss. Amita S. Sannaki[1], Dr. S. R. Ganesh[2]
[1]Research Scholar, Department of Commerce KSAWU,Vijaypura
[2]Assistant Professor, Department of Commerce KSAWU, Vijayapura
Corresponding Author- Miss. Amita S. Sannaki
Email: amitasannaakki123@gmail.com
DOI- 10.5281/zenodo.8035764

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. 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.
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) .
3. **Odlyzko (2003):**In his article he stated thatE payment is a subset of an e-commerce transaction to include electronic payment for buying and selling goods or services offered through the Internet. As technology is developing, the range of devices and processes to transact electronically continues to increase.
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 (Digicash), dropped the product (Cybercash), or moved into another business (First

Virtual). 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.

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:

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)

2. 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.

4. **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.

5. **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.

6. **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.
7. **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, UBI UPI App, PNB UPI, PhonePe, TranZapp etc.
8. **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.
9. **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.
10. **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

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.

The Benefits of Using Cashless Transactions:

The benefits of using cashless transactions are as follows(Source: RBI, NPCI and banks).

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).
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:

Digital transactions will bring the transparency and accountability to the monetary system. 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.Cashless economy reduces the chance of black money entering the system and completely decrease nefarious activities. Cash-based economy usually facilitates easy abatement of criminal activities such as money laundering, terrorism, extortion etc. All the Fake currency notes can be curbed. In a cashless society, paying tax cannot be avoided, and this violation can be greatly reduced. This increased tax value causes increased revenue for the state, which can be further used for welfare programmes.It helps reduces the risk of carrying and transporting huge amounts of cash. 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.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 increased year of year.
3. Total Value of cashless transactions in Indian economy has increased year of year.
4. Found the digital transactions will bring the transparency and accountability to the monetary system. And also its impact 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.

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.
2. Proper communications should be developed in the remote areas so that this facility should be taken to the rural and remote India.
3. 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.
4. The government schemes should communicate with people about the security and safety of using cashless transactions.

References:

1. Akhalumeh, P.B., and Ohiokha, F. (2011): Nigeria's Cashless Economy; The Imperatives. International Journal of Management & Business Studies. vol.2 pp. 12 – 17.
2. Akintaro, S. (2012): Going Cashless. IT & Telecom digest, online magazine, august,2012 CENTRAL BANK OF NIGERIA (2011): Towards a Cashless Nigeria: Tools & Strategies. Nigerian Journal of Economy. 3(2), 344 – 350.
3. Echekoba, F.N., and Ezu, G.K. (2012): Electronic Retail Payment Systems: User Acceptability & Payment Problems in Nigeria. Arabian Journal of Business & Management Review. vol.5, pp. 60 – 63.

4. Ejiro, O. (2012): What Nigerians Think of the Cashless Economy Policy. Nigerian Journal of Economy. 4(6), 97 – 102. Humphrey.
5. D. B. (2004): ―Replacement of cash by cards in U.S. Consumer Payments, Journal of Economics and Business, 56, 211–225.
6. Marco, A. and L. Bandiera (2004): - Monetary Policy, Monetary Areas and Financial Development with Electronic Money, IMF Working Study, IMF.
7. Moses-Ashike, H. (2011),"Cashless Economic can Reduce Risk of Carrying Huge Cash", [Online] Available: http://www.businessdayonline.com/…/222 17. Odior.
8. DonalO.Mahony, Michael Peirce, Hitesh Tewari(2001): Electronic Payment Systems for E-Commerce Second Edition.
9. Efraim Turban, David King, DennisViehland, Jae Lee (2006): Electronic Commerce: A managerial perspective, Pearson Education, Fourth Edition.
10. H. Albert Napier, Philip J..Judd, Ollie N. Rivers, Andrew Adams (2003): E-Business Technologies, Thomson Course Technology.

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Digitalization and Rural Empowerment in India

Kavita Sankanoor[1], Dr. G. H. Kallimath[2]
[1]Research Scholar, Department of Commerce, Karnataka State Akkamahadevi Women's University, Vijayapura SJMVS Arts & Commerce College for Women, Hubli
[2]Research Guide, Department of Commerce, Karnataka State Akkamahadevi Women's University, Vijayapura The Retired Principal, SJMVS Arts & Commerce College for Women, Hubli
Corresponding Author- Kavita Sankanoor
DOI-10.5281/zenodo.8035781

Abstract:
"Digital India is all about Inclusive growth" as said by Shri. Ashwin Vaishnav, The honorable Ministry of Electronics, and Information Technology. Digitalization aims at reaching the remotest area to provide equal opportunity to all for providing technology-based services. DIP's vision is to transform the country in to digitally empowered and knowledgeable economy. The paper focuses on the concept of Digitalization, DIP and its pillars and the digital India various services to empower rural India.The present study is based on secondary source of information from the Digital India Portal and many other published sources like Journals, Magazines and Various Websites.The limitation of the study is only empowerment initiatives have been considered and not all the services are considered for the study due to time constraint.

Keywords: Technology, Digitalization, Digital India Programme (DIP),Rural Empowerment

Introduction

'Technology for me is discover, learn, evolve, and implement. It combines 3S's – Speed, Simplicity and Service. Technology is fast, Technology is simple, and technology is a brilliant way to serve people.' Said Shri. Narendra Modi, The present Prime Minister of India.

Technology is the application of scientific knowledge for fulfilling practical goals. This ever-changing environment needs ever-changing sophisticated technology to find solutions to the ever-changing problems.Digitalization is the use of technologies to change traditional models for proving new opportunities for improvement. Digitalization aims at reaching the remotest area to provide equal opportunity to all for providing technology-based services. DIP's vision is to transform the country in to digitally empowered and knowledgeable economy. DIP's vision areas are as follows:

1. 1.Providing Digital infrastructure to every citizen as a core utility
2. 2.Efficient Governance and services on demand to all
3. 3.Digital Empowerment to all citizens.

Pillars of Digital India Programme

The DIP's vision accomplishment is possible by successful implementation of these nine pillars:

Broadband Highways: This pillar is useful for providing broadbands highways for all including urban and ruralIndia and providing national information infrastructure to the nation.

Universal access to mobile connectivity: This initiative focuses on providing network connectivity all over the nation even to the remotest village and filling the gaps in connectivity of network across the country.

Public Internet access programme: The two subcomponents involved in the programme are Common service centers (CSC) and multiservice centers in post offices. To provide Government to Citizens(G2C) services and other citizen centric e-services these CSCs have been started by Government of India in Gram panchayaths. There are in total 4,63,705 CSCs have been working across the country as on 28th February 2022. Post offices providing many new services like insurance, savings, Aadhaar, passport, CSC, India post

payment bank to reach to remote villages across the country.

E-Governance: Reforming Government through technology: Nowadays, through e-governance implementation,governance has become more flexible and transparent. The government forms have been simplified and made user friendly for the citizen. Everywhere Online applications accepted, tracking the application status is possible. In the e-governance electronic databases, workflow automation inside government, public grievance redressal systems have been implemented through which the efficiency in governance has been increasing.

E-kranti - Electronic Delivery of services: E-kranti started with the vision "transforming e-governance for transforminggovernance".E-kranti has developed various technologies for electronic delivery of services like Technology for e-Education, Technology for e-Health care, Technology for Farmers, Technology for security, Technology for financial inclusion, Technology for justice, Technology for planning, and Technology for Cyber security.

Information for all: The government has developedan open data platform and online hosting of information and documents facilitates citizens to get information easily. Government is engaging in social platforms like MyGov.in for exchange of ideas from citizen to Government. Hence provide two-way communication among both parties.

Electronics manufacturing: For NET ZERO IMPORTS' target, electronic manufacturing should be focused on. Manufacturing of Set top boxes, VSATs, Mobiles, consumer and medical electronics should be increased and should be produced and sold locally.

IT for Jobs: Students from small towns and villages are trained for IT sector jobs. The rural workforce is trained as service delivery agents and as service providers for telecom services.

Early harvest programmes: Early harvest problems include using IT platforms for messaging, using e-greetings by Government, biometric attendance usage, providing Wi-fi in all, using email as primary mode of communication by government and establishment of National portal for Lost and Found children. These are the pillars based on which the DIP's vision and objectives can be accomplished.

Review of Literature

(Tukesh kumar, 2017), The paper analyzes the impact of digitalization on Rural Development in India. It is based on secondary data, benefits of DIP, Empowerment of rural entrepreneurs under Digital India, challenges and changes needed. It concludes by stating that with adoption of Digital India Project, India will have a powerful digital infrastructure. All educational institutions and government services will soon be able to provide digital services round the clock. (Aneja, 2019)**,** The conceptual paper shows the impact of Digital India in Rural areas. The author concludes by saying digitalization improves the literacy level of rural areas, help the farmers are providing online facility regarding seeds, loans, schemes, techniques etc.(Bhatt, 2020)**,** The conceptual paper based on secondary data focuses on digital village and its schemes. The paper signifies the fact that Digitalization of village can create employment opportunities, increase the standard of living, ease the work, and increase the knowledge regarding internet. (Yadav, 2021)**,** The author explains key initiatives under DIP, DIP's vision, Objectives and its nine pillars. It also includes advantages and challenges. DIP is one of the best initiatives taken by Government of India for financial inclusion and rural development. (Choithrani, 2021), The paper focuses on various initiatives taken by the government in promoting digitalization for enhancing digital literacy and for improving digital infrastructure. The paper explains the concept of digital village, achievements of digital India campaign, focus areas of improvement, and complete digital literacy. The author states that digitalization has emerged as a driver of growth as it reduces cost and quick in terms of access.From the above literature review it is understood that many studies have been conducted on digitalization, impact of digitalization in rural areas, digitalization in rural India; but no study or very few studies have been conducted on rural empowerment through digitalization. The present study is needed to focus on the rural empowerment through DIP initiatives by Government of India.

Objectives of the study:

1. To understand the concept of Digitalization, DIP with its pillars.
2. To analyze empowerment of rural peoplein particularand all people in general with the help of DIP.

Research methodology:

The present study is conceptual in nature. It is based on secondary sources of information from DIP website, and various research articles,books, government websites, magazines, and newspapers.

Rural Empowerment through the DIPinitiatives:

DIP's initiatives include many Empowerment services, following are empowerment schemes introduced for the purpose.

Aadhar Enabled Payment System [AEPS]: In rural areas, to develop banking habits among people every bank provides banking service through Business Correspondents (BCs). These BCs provide basic banking services to rural people in unbanked areas. AEPS is bank led model for financial inclusion. This digital initiative model is used by banks for providing basic banking services through BCs in unbanked areas using Aadhar card as identification proof to operateaadhar enabled bank account. This scheme helps rural people conduct basic banking services like balance enquiry, cash deposit and cash withdrawal, hence develops banking habits and empowers rural people in India.

BPO Scheme: In recent years, IT sector in India is developing at rapid rate and contributing for increasing GDP directly. The India BPO Promotion Scheme [IBPS] under DIP established for employment generation and creation of 48,300 seats in respect of Business Process Outsourcing [BPO]/Information Technology Enables Services [ITES] operations all over the country. In the scheme around 1.5 lakh direct jobs, considering three shifts of operations are created and a good number of indirect jobs. The scheme provides special incentive for employment of women and specially enabled persons. It also encourages localentrepreneurs. The scheme helps in capacity building of smaller cities in terms of infrastructure and manpower which enables next level growth in IT/ITES. Hence creates employment and empowers smaller cities people.

Digidhan Abhiyan: This incentive of DIP focuses on creating awareness among the people of using various digital payment apps. The scheme enables the people and merchants to use digital platforms for conducting real time digital transactions through DIGIDHAN Bazar. DIGIDHAN mela's are conducted to promote cashless society. The scheme promotes the users to download, install, and use the various digital payment apps to conduct digital transactions. Nowadays no long ques are there for payment of bills like electricity, telephone and water. Everything is available at the tip of fingers of people, sit at home and make all the payments and shop online.These are all the indicators of becoming cash less economy. Lifestyle of people is developing even in rural India because world has become a global village and any foreign product can be accessed and purchased by village people. Hence rural people have more choices and hence empowerment takes place.

MyGov: This scheme is a unique and path breaking initiative by the government of India. Here the common people can exchange their healthy ideas with the government for developing and transforming India. MyGov is a social platform that helps for participatory governance. As on3rd May 2023, 3,08,94,663 MyGov Saathis (followers) are there. The activities here involve Polls/surveys, Discussions, Tasks, Blogs, Talk, Quiz, Campaign, pledge, and podcast. Here the people can discuss their local problems and get them solved through ideas. Hence the app empowers all the citizens.

National Mission on Education using Information and Communication Technology [NMEICT]:

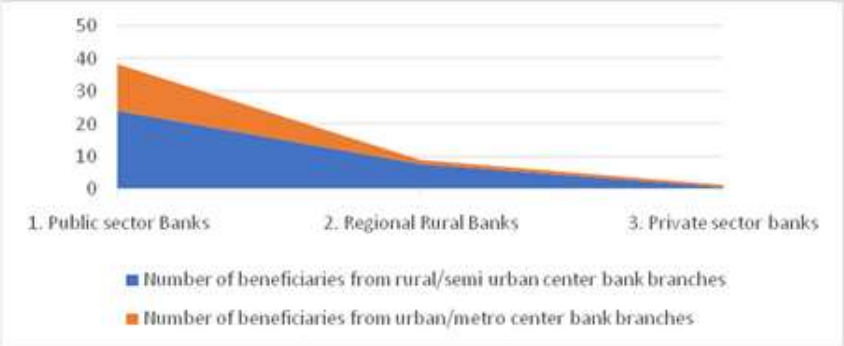
Objective of the mission is to meet the requirements and learning needs of learning community in India. One stop knowledge center for all the working population of about 50 crores for knowledge expansion, nurturing talents, and lifelong learning sources. The scheme includes National Digital Library of India- over 3.5 crore free content is used by 25 lakh active users and browse in more than ten languages, Swayam Prabha- Free educational TV channel,Samarth- e Gov Suite for universities and higher education institutions, fossee better education – free/libre open-source software, Virtual Labs, spoken tutorial – open source software audio video Tutorials, Swayam free online education, E-Yantra – Lab setup initiative, Farm setup initiative, Resource Development Center, Ideas Competition, Robotics

competition, and summer internship program. 'Knowledge is power' this mission provides sources to acquire and increase knowledge and hence empower the people.

Pradhan Mantri Gramin Digital Saksharata Abhiyan [PMGDISHA]: The scheme PMGDISHA is a new vision of rural India for providing digital literacy. The scheme is to bridge the digital divide especially for backward classes, marginalized sections, and rural poor people. The aim of the scheme is to digitally empower at least one person from each rural family. It empowers the rural people by training them for operating computer or digital accessing devices, sending or receiving emails, browsing the internet, accessing government services, and undertaking digital payments.

Pradhan Mantri Jan-Dhan Yojana [PMJDY]: The scheme was introduced with the mission of national financial inclusion. It develops banking habits among unbanked people and areas. Under this scheme one basic savings account is opened for an unbanked person; the person can open an account in any bank or with a BC (Bank Mitra). It's being zero balance account; no minimum balance is required to open the account. The person can get interest on deposit that is maintained in the account, and he/she is eligible to get Rupay debit card. There is an overdraft facility of Rs.10,000 and an accident insurance cover of Rs. 2,00,000. The account is eligible to get all Direct benefit transfers and benefits from social security schemes.

Chart I : PMJDY Number of Beneficiaries as on 26/04/2023 (Figure in Crores)



From the above chart I, it is clear that the scheme is successful; the number of beneficiaries is more from rural/semi urban areas as compared to number of beneficiaries from Urban/metro cities. Banking habits among rural poor have been developed and financial inclusion is increasing; hence rural empowerment is taking place through the scheme.

Pradhan Mantri Kushal Vikas Yojana [PMKVY]: The scheme was introduced by the Ministry of skill development and Entrepreneurship for training with various entrepreneurial skills for making youth self-secured and leading better life. Large number of Indian youths are given industry relevant skill training and skill certification. The scheme empowers the rural youth for better livelihood by providing industry related and entrepreneurship skills.

Targeted Public Distribution [TPD]: Distribution of food grains to Poor people who have Below Poverty Line (BPL) card under Antyodaya Anna Yojana (AAY) produced by farmers and incentivizing them based on minimum support price mechanism. The scheme provides food security to rural poor people and adds stability to their lives in terms of hunger.

The above are the initiatives by Government of India through DIP for the empowerment of rural people in Particular andall others in general. Therefore, many of them are successful and achieved empowerment of youths in the country.

Conclusion:

"Digital India our dream for the Nation. When I say 'Digital India' it is not meant for the Rich but those who are for Poor" – Said Shri. Narendra Modi, The present Prime Minister of India. Digital India Programme is successful and still on its way to achieve more. The programme provides many services and undertakes several initiatives to make India a digital country and also a cash less country through which transforming India is possible. In this study digitalization concept, DIP and its pillars, the various initiatives for empowerment of rural people in general and

empowerment youths of the country in general has been analyzed. The limitation of the study is only empowerment initiatives have been considered and not all the services are considered for the study due to time constraint. The scope for further studies is to analyze each and every service provided under DIP for the empowerment of rural poor in particular and for the development of the country in general.

References

1. Aneja, A. (2019). The impact of Digital India in Rural Areas. *Journal of Emerging Technologies and Innovative Research*.
2. Bhatt, s. (2020). Digitalization of Rural India : Digital Village. *In Vision : Journal of Indian Taxation*.
3. Choithrani, S. (2021). Rural India and Digitalization : Ways and opportunities. *Journal of Reaserch in Humanities and Social Science, 9*(7), 78-80.
4. Tukesh kumar, S. P. (2017, March). Role of Digitl India in Rural Areas. *International Journal of Advance Engineering and Resaerch Developments*.
5. Yadav, S. (2021). Digital India Programme : An overview . *International Journal of Creative Research Thoughts*.
6. Pradhan Mantri Kaushal Vikas Yojana (PMKVY) (pmkvyofficial.org)
7. https://digitalindia.gov.in/
8. https://www.pib.gov.in/PressReleasePage.aspx?PRID=1814030#:~:text=As%20on%2028%20February%202022,functional%20CSCs%20across%20the%20country.
9. http://pmjdy.gov.in/
10. http://dfpd.nic.in/
11. https://digidhan.mygov.in/

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

"A study on Occupational Stress of Women Employees in Indian Banking Sector – with special reference to select Public and Private Sector Banks"

Sneha Hiremath[1], Dr. S. R. Ganesh[2]
[1]Research scholar Department of Commerce KSAWU, Vijayapura
[2]Assistant Professor, Department of Commerce, KSAWU, Vijayapura
Corresponding Author- Sneha Hiremath
Email Id: sneehahh24@gmail.com
DOI-10.5281/zenodo.8035785

Abstract
The contribution of women for the country's GDP is one of the lowest in the world with 25% of labor force being female in India. The data also reveals that the growth of women employees in Indian banking sector is even slow that is with 24.17%. Here the study involves the analyses of growth of women employment in Indian banking sector considering public as well as private sector with the sample of two banks in each sector. The study is also made to know the factors leading to occupational stress for women employees in Indian banking sector.The data collected is from secondary sources and the research methodology is based on descriptive statistics. The study indicated that the women employment is increasing in Indian banking sector and it is found at clerical grade. It also reveals the factors that cause stress in public sector may be family-oriented and personal stress whereas in private sector along with lack of job security is found more. The stress level is high at officer's cadre.

Keywords: women employment, occupational stress, Indian banking sector.

Introduction:

Stress refers to a reaction to a situation or event, not the situation or event itself. Stress can be impacted by individual differences. It is excessive psychological and/or physical demands can produce stress. Stress cannot be avoided completely because eustress is something which is a positive form of stress which prepares one's mind and body for the imminent challenge that it has perceived. Stress can be in negative form, that is, it occurs when the mind and body is unable to cope with changes and usually occurs when there are deviations from the normal. Stress is inevitable; distress may be prevented or can be effectively controlled.Occupational stress can be explained as the physiological and emotional responses that originate when workers feel an imbalance between their work demands and their capability and/or resources to meet these demands.

Review of Literature

Dr. Thera Rajesh & et.al (2019) in his titled "Women Empowerment – Role of Women in Banking Sector"states that the service conditions in banks provide a conductive atmosphere for women. They conduct their work in a safe atmosphere for defined working hours.KrishnasamySrinivasan&et.al(2022) in his titled "Effects of Demographic Factors on Job Stress Level: Evidence from Women Bank Employees in Tamil Nadu" revealed that stress was generally experienced by most women employees working at banks than men.Monika Mittal & et.al(2018) in her titled "Examining the Impact of Role Overload on Job Stress, Job Satisfaction and Job Performance-A study among Married Working Women in Banking Sector" shows that Role Overload has positive impact on Job stress and Job Performance and negative impact on Job Satisfaction.Ms. Elizabeth Paul Chakkachamparambil (2021) in her titled "A Study on Occupational Stress Among Women Employees in Private Banking Sector with Special Reference to Thrissur District". Ms. R. Sundari & et.al(2020) in her titled "Women Employment in Indian Banking Sector- a Trend Analysis"analyzed that women employment

in Indian banking sector though in increasing trend is less than quarter in proportion to men employees.OkonkwoEjike&et.al(2014) in his titled "Influence Of Marital Status And Work Role On Job Stress Among Female Bank Workers" recommended that employers in the banking sector should take steps towards identifying factors that contribute to job stress in the banking sector and controlling them.Parvathy Mohan(2016) in her titled "Occupational Stress Among Women Employees In Banking Sector: A Study With Particular Reference To Kottayam District" reveals that the level of occupational stress is more among private sector bank employees and Personal stress is found among Public sector bank employees.R. M. AlaguKrithika&et.al(2016) in her titled "A Study on Occupational Stress Among the Women Employees in Banking Sector at Trichy District" reveals that majority of the employees face severe stress- related ailments and a lot of psychological problems.

Research Gap:

The previous study is based on employees working in banking sector and their role in banking sector. This research makes an attempt to study the growth of women employees in Indian banking sector and factors leading to occupational stress for women employment has been focused.

Significance of the Study:

Occupational stress also known as job stress/work stress affects people's physical and emotional health. As compared to the male counterpart, women face more stress at the work place since they have to perform the dual role of house wife and office staff. In this regard, the study has been undertaken to know the growth of Women Employment in Banking sector and the factors affecting occupational Stress among women employees in select Public and Private Sector Banks.

Objectives of Study:

1. To find out the growth of women employees in banking sector.
2. To find out the factors that influence occupational stress among women employees in the banking sector in India.
3. To provide suitable suggestions and conclusions for the improvement of performance.

Scope of The Study:

The researcher has taken two public and two private sector banks and they are State Bank of India, Punjab National Bank, ICICI bank and HDFC bank. In this research paper,the study period for the growth of women employees in Indian banking sector taken for three years that is 2019, 2020& 2021.

Research Methodology:

This study is Conceptual in nature which will be based on employee-centered approach. The researcher used secondary data method for collecting the data for achieving the objective, the past review of literature are studied.Secondary data was also obtained from journals, articles, books, reports, publications, electronic books and from the internet.

Results and Discussion

Objective 1: To find out the growth of women employees in banking sector.

A recent report in The Wall Street Journal has revealed that despite India's issues with women's rights, more women are rising to top positions in the banking industry. The revelation came after the recent appointment of ZarinDaruwalaas chief executive to Standard Charter's Indian division. **(Source: www.thehindubusinessline.com).** India has been taking many measures in recent years to introduce gender equality to the workplace, but some could argue that a few women in top positions aren't enough to bring true equality to a traditionally male dominated industry. Women still make up only seven percent of board positions for publically traded companies while only eleven percent of Indian firms have women participating in ownership.The data clearly indicates that women employees in Indian banking sector remains less than a quarter(2020-24.00% to 2021-24.17%) that is the proportion of women employees to total employees, though is in increasing trend is far behind its global counterparts in terms of number of women employees working in banking sector. (www.thehindubusinessline.com)

Table 1.1 Showing Bank-Wise Distribution of Employees Working In Selected Banks

Banking company	YEAR	Women employees	Percentage of women employees (%)	Total workforce
State Bank of India	2021	63,673	25.92	2,45,652
	2020	63,061	25.28	2,49,448
	2019	62,615	24.33	2,57,252
Punjab National bank	2021	23,314	22.90	1,01,802
	2020	15,179	22.07	68,781
	2019	15,394	21.74	70,810
ICICI bank	2021	31,059	31.45	98,750
	2020	30,590	30.80	99,319
	2019	25,079	28.90	86,763
HDFC bank	2021	21,746	18.10	1,20,093
	2020	21,439	18.33	1,16,971

SOURCE https://bfsi.economictimes.indiatimes.com

In all scheduled commercial banks (SCBs), the proportion of total female employees to total employees over the 15-year period, rose only by **9.1 percentage** points — that is, from 14.8 per cent in 2006-07 to 23.9 per cent in 2020-21. In **public sector banks (PSBs)**, the proportion of women employees during this period rose by **12.7 percentage**points — from 14.3 per cent to 27 per cent. In **private and foreign banks**, the participation of women in the workforce registered only a small growth of **0.1 per cent** and **2.4 per cent**, respectively, in 2020-21.

Objective 2: To find out the factors that influence occupational stress among women employees in the banking sector in India.

Factors That Influence Occupational Stress For Women In Indian Banking Sector (Kamala Srinivasan (1991)

Daily distant travelling, difficulties in working late, dual responsibilities of managing household responsibility interferes banking activities that develops stress,frequent transfer policy,lack of health and safety concerns such as long working hours, lack of support system from their family, low opinion of their own abilities,techno-stress(craigbrod (1984)) is the negative psychological link between people and the introduction of new technologies, assumptions that women would not be interested in training or in promotions, attitude of trade unions of not giving key positions to women employees,dissatisfaction that they were not sent out for training, educating customers for it enabled services, glass ceiling, lack of flexible personnel policies,lack of guidance, lack of infrastructural facilities at work place, lack of job security in private banks, lack of organizational support and culture, lack of participation in decision-making process as male officers feel women not capable enough to be considered for making decisions.(ms.elizabethpaulchakkachampara mbil(2021)),lack of self-confidence, non-availability of exclusive forums to share their views,problem of social networking at work place due to family responsibilities, the resistance of men to accept women as worthwhile peers and bosses, work place discrimination like inequalities on pay and promotion.

Limitations of the Study:

The study is confined to women employees of Indian banking sector and due to time and cost constraints, researcher collected data from selected public and private sector banks in India.

Findings:

The proportion of women in the clerical grade is highest in comparison with officer grade and lower level grade that is 31.7 per cent in 2020-21.Stress level indicates that job oriented stress is high at officers and branch managers (Parvathy Mohan(2016)). Major factors that influencejob performance of women employees are dual responsibilities, daily distant travelling, working for long hours, frequent transfer policy, techno-stress, lack of family support, role conflict, changes in life structure, job rotation, increase in number of customers, lack of co-operation at work place.

Conclusion:

Women employees need to be provided training and overall development of women employees is required that are to manage their family –oriented stress along with job stress. Transfers and promotions of

bank policy is inevitable but women employees finds it difficult to switch to changed environment ,hence, to cope up with the changed environment they must be trained.

Suggestions:

Formulate stress alleviation programs like yoga, meditation etc. to reduce the impact of stress. Undertake stress audit at all levels in the organization to identify the areas of stress for improving the conditions of job. The grievance handling procedures should be made more transparent so as to increase the confidence level of employees and reduce their anxiety and tension related to their jobs. Women employees have to concentrate more on career advancement and personal growth activities and continual exercise, optimistic attitude and approach towards life and problems and meditations and yoga greatly help minimize their stress levels and enhance their work efficiency.There are very few or no initiatives taken by Government of India for women employment in the Indian banking sector. The government initiatives for women entrepreneurship are Bharathiya Mahila Bank Business Loan, Mudra Yojana Scheme, Dena Shakti Scheme, Udyogini Scheme, Cent Kalyani Scheme, MahilaUdyamNidhi Scheme, Women Entrepreneurship Platform (WEP) which has helped to generate more revenue for women-owned Businesses. So, this gap has to be filled by the government by making an attempt to train women for getting employed in the banking sector.

References

1. Dr. Therarajesh, Dr. K.A.Emmanuel(2019) ""Women Empowerment – Role Of Women In Banking Sector", Journal of Emerging Technologies and Innovative Research (JETIR), March 2019, Volume 6, Issue 3, ISSN-2349-5162
2. KrishnasamySrinivasan, John Wilson (2022) "Effects of Demographic Factors on Job Stress Level: Evidence from Women Bank Employees in Tamil Nadu", Vol.11, No 4, 04 August 2022, ISSN 1805-3602, pp. 946-960
3. Monika Mittal, Dr. S.S.Bhakar(2018) "Examining the Impact of Role Overload on Job Stress, Job Satisfaction and Job Performance-A study among Married Working Women in Banking Sector", International Journal of Management Studies ,Vol.–V, Issue –2(7), April 2018, ISSN(Print) 2249-0302 ISSN (Online)2231-2528
4. Ms. Elizabeth Paul Chakkachamparambil(2021) "A Study on Occupational Stress Among Women Employees in Private Banking Sector with Special Reference to Thrissur District", Volume 9, Issue 1, September 2021, ISSN 2581-9429
5. Ms. R. Sundari, Dr.P.A.Sathyanarayana(2020) "Women Employment In Indian Banking Sector- A Trend Analysis", researchgate, 339956327
6. OkonkwoEjike, Echezona-AnigboguJovita C, OkoroChinwendu M, EzeAdaobi C, Azike Irene N(2014) "Influence Of Marital Status And Work Role On Job Stress Among Female Bank Workers", Global Journal of Applied Management and Social Sciences (GOJAMSS),Vol.7, June 2014, ISSN: 2276 – 9013, pp.66 –72
7. Parvathy Mohan(2016) "Occupational Stress Among Women Employees In Banking Sector: A Study With Particular Reference To Kottayam District",Minor Research Project,May 2016
8. R. M. AlaguKrithika ,Prof. M. Robinson(2016) "A Study on Occupational Stress Among the Women Employees in Banking Sector at Trichy District", Volume 2, Issue 11,April 2016, ISSN : 2349-6010

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Digital Agriculture in India: Opportunities & Challenges

Dr. G.L Parvathamma[1], Nagma.N[2]
[1]Professor and Chairperson, Department of Economics, Bangalore University, Bangalore-560056.
[2]Research Scholar, Department of Economics, Bangalore University, Bangalore-560056.
Corresponding Author- Dr. G.L Parvathamma
Email– dr.parvathigutte@gmail.com
DOI-10.5281/zenodo.8035791

Abstract

India is having ever-evolving relationship with agriculture sector. It has a long standing history in Indian economy. This sector has gone through a lot of changes since 3-4 decades. After Green revolution, our food grain production increased and made us food sufficient, but still if we think about future of agriculture through the lenses of food security, water security and climate change, we need some changes. Rapid growth of population is the main feature of Indian economy; it has driven demand for food, fibre, energy & water which is associated with a usage of natural resources in more sustainable way. Since 1990's precision agriculture machinery and equipments provided important productive gains and also maximized the use of agricultural inputs. Hence Digital farming is emerging as one of the ways to increase efficiencies and enhance agriculture income in global level. For farmers, it offers an opportunity to increase yields, save long term costs & eliminate risks. In the rural environment with growing connectivity in addition to its greater integration with data from sensor systems, remote sensors, equipment and smart phones have paved the way for new concepts so called agriculture 4.0 or digital agriculture. There are different forms of digitalization in agriculture such as internet of things (IoT), augmented reality, big data, robotics, sensors, ubiquitous connectivity, artificial intelligence (AI), 3D printing, digital twins, system integration, block chain among others etc. In this backdrop the present study is mainly focusing on concept of digital agriculture, practices and their effects on agricultural productivity, also examines how digital farming came into force in agriculture sector. Further it identifies the benefits and challenges followed by the conclusions.

Key Words: Digital Agriculture, Remote Sensors, Robotics, Artificial Intelligence, Green Revolution, System Integration, Block Chain.

Introduction

India has made incredible progress in agricultural growth. It ranks first in production of milk, jute, pulses and 2nd in producing wheat, rice, groundnut, vegetables, fruits, cotton & sugarcane. Also it is the leading producers of poultry, fish, spices, livestock and plantation crops. Hence in this extent production is not a biggest problem in Indian agriculture, whereas tiny land holdings & farmers income are exactly not sufficient. So for that one of the way to increase farmers income is the use of digital technology in agriculture it leads to increase overall efficiency of agriculture production as well as entire value chain. From self-driving tractors to soil detection disease drones, from farm management apps to milking robots digitalization become increasingly integrated into agriculture sector. By using digital equipments, all parts of the agri-food production will be modified, since connectivity and processing of large amount of information in an instant allows for more efficient work, greater environmental benefits, economic returns and better working conditions in the field. In this context digital agriculture is part of the so-called fourth agricultural revolution and it is associated with Agriculture 4.0.

Agricultural revolutions include (a) Arab Agricultural revolution (b) British Agricultural revolution (c) Scottish Agricultural revolution (d) Green revolution. In one hand agricultural productivity is increased but on the other hand past

agricultural revolutions has left so many problems in farming. For example, Green revolution had unpremeditated consequences such as inequality & environmental damage, it increased inter-farm and interregional inequalities, biased towards large farmers regard to capital investment in new technologies. Usage of heavy inputs and dependence on agro chemicals leads to adverse environmental effects such as soil degradation and chemical runoff. Hence digital agriculture has the potential to overcome negative side effects of the Green revolution.

In general the concept of smart farming or digital agriculture comes from scientific knowledge, techniques and equipments from precision agriculture started from 1990s. the term smart farming used in development perspective it emphasizes the ICT in digital farm management cycle through intensive use of new technologies such as artificial intelligence (AI), Internet of things (IoT), big data & cloud computing. The concept of digital agriculture encompasses communication, information and spatial analysis technologies it allows rural producers to plan, monitor & manage the operational and strategic activities of the production system. In addition to this it also involves orbital remote sensors, field sensors, UAV-Unmanned Aerial Vehicle, telemetry & automation, global positioning system, digital maps – soil relief, production, productivity, block chain and cryptography, big data, cloud mounting, IoT, Artificial Intelligence, mobile applications and digital platforms etc. All these technologies support to pre & post production decisions and greater sustainability.

Review of Literature

Dennis Pauschinger, Francisco R. Klauser (2022)[1]- in their article authors focused on how expert knowledge and authority are making a considerable contribution to smart farming technologies in Switzerland and also how it is linked with spatial- material dimensions. Further authors says that smart farming technologies are advancing rapidly and proliferating in Switzerland agriculture sector.**Edson Luis Bolfe, Lucio Andre de Castro Jorge, Ieda Del Arco Sanches (2020)[2]** - in their article authors found that 84% of farmers using at least one digital technology in their production system with increased productivity but still cost of machine, equipment, software and connectivity are the challenges. Furtherauthors says that 95% of the farmers interested to know more about new technologies to strengthen agricultural development. **AbhishekBeriya (2020)[3]** - in his working paper author found that lower cost of technology, pay per use renting models, easy to use portable hardware, policy support and harnessing power of farmer collectives are essential for success of digital agriculture in India.

BurakOzdogan, Anil Gacar, HuseyinAktas (2017)[4]–in their article authors says that the selected companies have made meaningful progress regarding raising awareness among farmers and other involved parts of agriculture sector in Turkey.

Methodology

The present research paper is completely based on secondary sources such as published articles in journals, working papers and websites related to the topic.

Objectives

The present research paper is based on following objectives.

1. To know the concept of digital agriculture, practices and their effects on agricultural productivity.
2. To study various government digital technological programmes and their applications in India.
3. To identify the benefits and challenges of Digital Agriculture.

[1]Dennis Pauschinger, Francisco R. Klauser (2022) - The introduction of Digital technologies into agriculture: Space, materiality and the public-private interacting forms of authority and expertise, Journal of Rural Studies, ELSEVIER, www.elsevier.com/locate/jrurstud

[2]Edson Luis Bolfe, Lucio Andre de Castro Jorge, Ieda Del Arco Sanches (2020) – Precision and Digital Agriculture: Adoption of technologies and perception of Brazilian farmers

[3]AbhishekBeriya (2020) – Digital Agriculture: Challenges and Possibilities in India, CAD Working Paper Series: Towards a New Indian Model of Information and Communications Technology – Columbia universiy

[4]BurakOzdogan, Anil Gacar, HuseyinAktas (2017)- Digital Agriculture Practices in the context of Agriculture 4.0, Journal of Economics, Finance and Accounting, ISSN: 2148-6697, Volume 4, Issue 2

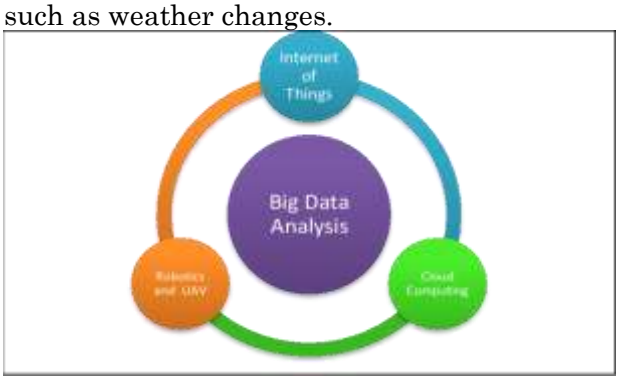
Conceptualisation of Digital Agriculture

Digital agriculture, sometimes known as smart farming or e-agriculture. It is the tool that digitally collect, store, analyze and share electronic data or information in agriculture sector. It differs from first three agricultural revolutions, so primarily it impacts on production techniques and on-farm technologies, farmers required more data analytical skills and less physical interaction with livestock or fields. It always relied on empirical evidence, data and methods of analysis will undergo drastic changes in smart farming. Finally big data may increase the power differential between farmers & information service providers or between farmers & large value chain actors (like supermarkets). Emerging digital technology have the potential to be game changer for traditional agricultural practices, Food & Agricultural Organization of United nations has referred this change as a revolution. It is the newest shift which ensures needs of the global population into the future. It also denotes technological transformation and increased the farm productivity.

Different entities have been defined the concept of digital agriculture/smart farming, precision farming in different ways.

1. **According to EU funded BIOPRO Baden**-Wurttemberg GmbH project dossier (2018) Precision farming is an agricultural concept involving new production and management methods that make intensive use of data about a specific location and crop. Sensor technologies and application methods are used to optimize production processes and growth conditions. In contrast to conventional agricultural methods, using digital data can increase resource and cost efficiency as well as reduce environmental impact. Further smart farming or farming 4.0 or digital farming is the application of information and data technologies for optimizing complex farming systems. The integration of smart agricultural technologies and modern data technologies enables seed planting to be adapted to a specific field to ensure an efficient production process. The application of information and data technologies support farmers in making informed decisions based on concrete data.
2. **The media organization specializing in IoT, IoTfor all describes** "smart farming is an emerging concept that refers to managing farms using modern information and communication technologies like IoT, robotics, drones and AI to increase the quantity and quality of products while optimizing the human labour required by production. They specifically identify sensors, software, connectivity, location (GPS, satellites), robotics and data analytics as the technologies that can be used for smart agriculture. Further they specify precision farming as an umbrella concept for IoT based approaches that make farming more controlled and accurate.
3. **According to Emerj AI research,** Artificial Intelligence (AI) is steadily emerging as part of the technological evolution in agriculture and can be categorized on to 3 main groups.
   Agricultural Robots – to replace human labour intensive tasks by robots.
   Crop and Soil Monitoring – leverage computer vision and deep-learning algorithms tp monitor crop and soil health.

Predictive Analytics – develop and use machine learning models to track and predict various environmental impacts on crop yield such as weather changes.



Practices & Effects of Digital Agriculture

Digital farming encompasses wide range of technologies most of these have multiple practices along the agricultural value chain. It includes

1. Machine learning
2. Artificial intelligence
3. Distributed ledger technologies, including block chain and smart contracts
4. Cloud computing/Big data analysis tools
5. Digital communication technologies like mobile phones

6. Digital platforms such as e-commerce platforms, agro-advisory apps, e-extension websites
7. Internet of Things (IoT), a principle developed by Kevin Ashton, it explains how simple mechanical objects can combined into a network to understainding of that object
8. Precision agriculture technologies includes

1. Guidance & Tracking system (GPS, GNSS, RFID, IoT)
2. Variable rate input technology
3. Advanced image technology including satellite and drone imagery, temperature gradients, fertility gradients, moisture gradients, anomalies in field
4. Sensors including food and soil sensors
5. Automated machinery and agricultural robots
6. Automatic section control
7. Machine learning is a subset of artificial intelligence, it can be used to identify patterns in data, make predictions and recommend actions. Artificial intelligence is to improve crop yield, control pests, helps in soil testing, provide actionable data for farmers and reduce their workload. Distributed ledger technology is a new and innovative way of managing transactions. It is used to improve transparency, trust & efficiency in digital farming. Block chain technology provides accurate data on farms, inventories, instant & secure transactions and food tracking. Thus framers no need to depend on files to record & store important data. Big data is an umbrella concept, it has revolutionized many industries, including digital agriculture by allowing more efficient analysis and prediction. IoTrefers to the number of devices connected to internet such as from cars to home appliances. By using sensors & software applications can communicate with each other. Remote sensors map environmental variables such as temperature, rainfall, soil moisture level. By this later it can diagnose diseases in crops or also monitor changes over time.

As compared to 2010 under business as usual growth FAO estimates world required 56% more food to feed over 9 billion in 2050. Furthermore, world faces intersecting challenges like climate change, malnutrition, food waste, changing diets etc. Hence to produce sustainable food future world must increase food production while cutting greenhouse gas emissions and maintaining land used in agriculture. In this context it addresses these effects by making agricultural value chain more efficient, equitable and environmentally sustainable.

1. Efficiency

Through lowering the costs of replicating, transporting, tracking, verifying & searching of data digital technology changes complete economic activities. Due to this low costs, digital technology will improve the efficiency throughout the value chain.

(a) On-farm efficiency

It will improve the allocative efficiency of physical capital within and between farms. Often called uber for tractors, equipment sharing platforms like Hello Tractor, TroTro Tractor, WeFarmUp, Tringo providing expensive machineries to farmers for rent. By providing a market for equipment sharing, it ensures few tractors sit idle and make owners to earn extra income. Furthermore, farmers to make big investments without the resources can better access equipment to improve their productivity. Also it improves labour productivity by reducing labor requirements. From milking robots in dairy farms to greenhouses with automated climate control can make crop and livestock management more efficient by decreasing required labor.

(b) Off-farm / Market efficiency

Digital technologies will make agricultural markets more efficient. E-commerce platforms, digital payment systems, online ICTs, mobile phones & other digital agricultural technologies mitigate market failures and reduce transaction costs throughout the value chain.

2. **Reducing information asymmetry** – price information affects efficiency of competitive markets because it impacts price dispersion, arbitrage, farmer and consumer welfare. Since the marginal cost of digitally delivering information approaches zero, it has the potential to spread price information. Other examples for digital platforms for price information are MFarm&Esoko.
3. **Matching sellers & buyers** – E-commerce reduces the costs of buyers and sellers, also potentially shortening the value chain. Rather than go through intermediaries, farmers can sell to consumers directly. Market access services can solve the matching problem

without necessarily hosting online transactions. For example, Esoko sends market information (prices for specific commodities, market locations etc) to agents & farmers connecting them to buyers. Finally, it is not just producer-to-consumer output sales can also facilitate matching in financial & input markets.

4. **Reducing transaction costs in commercial markets** – digital payments reduce transaction costs within agricultural markets also it can provide a gateway to bank account, insurance & credit. Smart contracts or distributed ledger technology is another way to reduce transaction cost in commercial markets.

2. Equity

Digital agriculture creates more equitable agri food value chain. Because it reduces transaction costs & information asymmetries, they can develop small farmers market access in number of ways:

1. Financial inclusion

Digital technology helps to improve information asymmetry exists between farmers & financial institutions. When lenders decide a farmers credit ceiling or insurance premium, they are usually uncertain about what risks the farmer presents. It reduces the costs of verifying farmers expected riskness. Block chain, distributed ledger technology, smart contracts, real-time digital communication platforms creates trust in between farmers & financial institutions.

2. Market inclusion

One who living in remote areas they may unaware of fair market prices. As a result one who typically have better information about market conditions & prices they accrue significant market power and profits. Compared to large producers, smallholders may produce tiny harvests, hence they are lack in bargaining power with middlemen. If smallholders can sell their products together, they have more leverage. Hence connecting producers with final consumers can eliminate intermediaries monopsony power by rising producers profits. As mentioned above e-commerce or other market linkage platforms can connect a small farmer directly to consumers around the world.

Potential inequalities resulting from digital agriculture

Digital technology can facilitate market access & information flow, though there is no guarantee that they won't exacerbate existing inequalities.

Large farms – when digital farming requires much upfront investment, only large farms with sufficient assets 7 credit access will adopt it. This trend enables smallholders to participate in digital agriculture,more evenly with larger farms as the upfront investment becomes more equal relative to the farm size.

Digital divide - The uneven access of information and communication technology may lead to uneven adoption and thereby get uneven gains from digital agriculture. When digital technologies require specific skills, benefits may accrue to digitally literate farmers to take advantage of such opportunities.

Gender – given gender based disparities in ICT and gender gap in agribusiness value chain, men seem more likely to adopt digital agriculture. Therefore it perpetuate gender inequalities in agriculture sector.

Unskilled labour - Advances in on-farm productivity, particularly through digitized automation and precision agriculture, may threaten unskilled labours.

Agribusiness and service providers – big data may increase the power differential between agribusiness/information service providers and farmers. If smallholders lack access to or control of their data, they may lose bargaining power with large value chain actors (like supermarkets) and data collectors.

3. Environment

According to World Resource Institute boosting natural resource efficiency is the single most important need for sustainable food future. It includes variable rate nutrient application, variable rate irrigation,machine guidance, and variable rate planting/seeding could minimize use of agricultural inputs for a given yield. This could mitigate resource waste and negative environmental externalities like greenhouse gas emissions, soil erosion, and fertilizer runoff.

1. Reduced food waste - in a year between on-farm production and consumers 25% are wasted .Traceability systems facilitate better identification of supply-side weaknesses, where food is lost downstream of the farm, and how much is wasted.Emerging digital innovations, such as milk cartons that track

milk from farm to fridge, can address demand-side waste by providing consumers with more accurate expiration dates.

2. Consumer trust -in high-income countries food safety, quality and authenticity has become an important regulatory requirement. To certify agri-food products RFID tags &blockchain technologies provide near-real-time quality signals to consumers.

3. Improved producer welfare – one who can leverage environmental certification could sell their products at premium, because block chain technologies enable greater trust in labels like sustainable, organic or fair trade.

Current Initiatives by the Indian Government

While several countries such as Netherlands, US, Australia, Israel have successfully adopted and exploited digital solutions to revolutionize agriculture, their adoption in India is still in infancy stage. The future adoption of digital farming in India is anticipated to nurture under the PPP (Public-Private Partnership) mode. The demand for digitization in Indian agriculture is well understood and acknowledged likewise efforts have also been made towards digitizing the prevailing value chain.

1. Bhoomi Project –State government project inaugurated in the year 2000. It is a land record management system.
2. Agristack - to improve digital agriculture in India among 100 villages across 6 states Ministry of Agriculture and Farmers Welfare signed an agreement with Microsoft in June 2021. Agristack is a unified platform it provides end-to-end services to farmers across the value chain. The government intends to issue unique IDs to farmers all over the country in order to integrate them with various government schemes and crates systematic digital agricultural ecosystems.
3. Unified Farmer Service Platform (UFSP) - it is a unique combination of core infrastructure, data, applications & tools that enables seamless interoperability of various private and public IT systems across the country. It also act as data exchange medium between various services and schemes to help farmers by allowing them to have comprehensive access to various schemes and services.
4. Digital Agriculture Mission - Union Minister of Agriculture & Farmers Welfare Mr. Narendra Singh Tomar announced Digital Agriculture Mission 2021-2015 in September 2021. It aims to support and accelerates project based on technologies such as block chain, artificial intelligence, use of drones & robots, GIS technology and remote sensing.
5. JioAgri (JioKrishi) - launched in February 2020, it aims to digitalize the agricultural ecosystem along the entire value chain in order to empower farmers. JioAgri platform was launched to take digital agriculture in India to the next level.
6. National Agricultural Market (E-NAM) - launched in 2016 April, it helps farmers to sell their products without intervention of mediators by generating competitive returns on their investments. As of 2021 November, 1.72 crore farmers and 2.05 lakh traders have been registered in e-NAM platform.
7. Direct Benefit Transfer (DBT) Central Agricultural Portal - launched in 2013 January, it helps farmers to adopt modern farm machinery with government subsidies.
8. KisanSuvidha App - it is developed to provide information on weather, plant protection, seeds, fertilizers, pesticides and machinery.
9. Agri Market App - it has been launched to provide farmers with updated information about crop prices in the market within 50km of their location.
10. National Mission on agricultural extension & Technology - it aims to strengthen agricultural extension to enable delivery of appropriate technology and improved agronomic practices to farmers.
11. E-governance efforts - government has put operation 3 portals viz. farmer portal, kisan call centre&mKisan portal to help farmers take informed decisions for efficient farming under varying agro-climatic conditions.

Applications of Digital Agriculture

There are wide variety of applications and use of digital technology in agriculture sector. Some examples are listed below.

1. Agropad- it is a paper device about the size of business card. The microfluidics chip inside the card performs on-the-spot

a chemical analysis of the sample, provides result in less than 10 seconds.
2. Plantix and crop disease identification over WhatsApp- infected diagnoses crops and offers treatments for any pest, disease or nutrient deficiency problems.
3. Pay per use based farm tech and mechanization - using their services through a mobile application or a phone call, farmers can rent their required farm machinery on a pay per use basis thus saving them time and ensuring reasonable costs while reducing uncertainty around availability.
4. Use of drones to fight locusts in India - Ministry of Civil Aviation granted for Rajasthan Agriculture Department. It is the first state affected to use drones for anti-locust operations.
5. Use of drones for rural property mapping in India - used to spray chemicals as they have reservoirs, which can be filled with pesticides and fertilizers for spraying on crops in very little time compared to traditional methods. Also used for seeding and land mapping.
6. Grain bank model of Ergos- it empowers farmers by providing when, how much quantity and at what price they want to sell their products, leads to maximize their income.
7. Quality assessment using technology - AGMARK (Agricultural Produce Grading & Marketing) is a certification mark given to agricultural products to assess the quality.
8. Digital tools for agriculture farm monitoring and risk management

Opportunities of Digital Agriculture

By implementing these technological solutions enable reliable management & monitoring of farms. If farmers got complete digital analysis of farms in real time, they can act accordingly and no need to apply excess pesticides, fertilizers and they can reduce overall water consumption. The other important opportunities are listed below:

1. Prevents soil degradation
2. It improves farmers socio-economic status
3. Increases agricultural productivity and reduces production costs
4. Reduces environmental and ecological impacts
5. Improves workers safety
6. Promotes the effective use of water resources
7. Reduction of chemical usage in crop production
8. Increases production efficiency and yield
9. It can help smallholders to access new markets for their products
10. Improves soil quality and fertility
11. Reduce dependence on inputs such as fertilizers & pesticides
12. Provides up-to-date information about weather patterns, prices of inputs etc., which may help farmers to make better decisions regarding agricultural practices.
13. Enable tracking of crops from seed to sale, providing valuable information about crop yields & marketing potential.

Challenges of Digital Agriculture

Each and every concepts they have their own pros and cons. In such a manner the concept of digital farming also have its own challenges. Some important challenges of digital agriculture are as below:

1. Lack of awareness about benefits of digital agriculture among farmers and rural residents
2. Inadequate infrastructure and resources
3. Unreliable internet connections
4. Lack of skilled professionals
5. The main challenge is lack of standardization across agricultural platforms.

Conclusion

The concept of digital farming is a set of technologies for information, communication & analysis it allows farmers to plan, monitor & manage the operational & strategic activities of agriculture production system from pre-production, in production & post production. In general smart farming will deliver step change in efficiency, production and agriculture sustainability. Agricultural producers and industry Organizations are working to define sustainability and to report sustainability improvements in agriculture sector. Indian agriculture and allied sectors is verge of adopting new technologies such as IoT, AI/ML, agridrones for unmanned aerial survey. Both India & foreign agritech players play a very prominent role in providing these advanced technologies to farmers. Digital farming in India is rapidly growing filed with immense potential to boost food security and rural development and creates new jobs. It is the application of modern technology in agriculture sector to develop production,

increase efficiency and reduce costs. Finally author concludes that it is rapidly growing field with great potential to improve food security and reduce environmental impacts. Also it is an important tool for the development of India as it provides an opportunity for farmers to adopt new technology and get better yields & helps in promoting organic farming. Emerging new applications will transform agriculture from traditional practices to a highly automated data intensive industry.

References

1. Dennis Pauschinger, Francisco R. Klauser (2022) - "The introduction of digital technologies into agriculture: Space, materiality and the public-private interacting forms of authority and expertise", ELSEVIER, Journal of Rural Studies, www.elsevier.com/locate/jrurstud
2. BurakOzdogan, Anil Gacar, HuseyinAktas (2017) - "Digital Agriculture Practices in the Context of Agriculture 4.0", Journal of Economics, Finance and Accounting, ISSN: 2148-6697 Volume 4, Issue 2
3. Laurens Klerkx, Emma Jakku, Pierre Labarthe (2019) - "A review of social science on digital agriculture, smart farming and agriculture 4.0: New contributions and a future research agenda", ELSEVIER, NJAS-WageningenLournal of Life Sciences, www.elsevier.com/locate/njas
4. Terry W.Griffin, Keith D.Harris, Jason K. Ward, Paul Goeringer, Jessica A. Richard (2020) – "Three Digital Agriculture Problems in Cotton Solved by Distributed Ledger Technology", Agricultural and Applied Economics Association (AAEA WILEY)
5. Edson Luis bolfe, Lucio Andre de Castro Jorge, Ieda Del Arco Sanches, AriovaldoLuchiari Junior, Cinthia Cabral da Costa, Deniel de Castro Victoria, Ricardo Yassushi Inamasu, Celia Regina Grego, Victor Rodrigues Ferreira and Andrea Restrepo Ramirez (2020) – "Precision and Digital Agriculture: Adoption of Technologies and Perception of Brazilian Farmers", www.mdpi.com/journal/agriculture
6. AbhishekBeriya (2020) - "Digital Agriculture: Challenges and Possibilities in India", CSD Working Paper Series: Towards a New Model of Information and Communications Technology
7. Digital Agriculture – The future of Indian Agriculture, IBEF Economic survey 2020-21, https://www.ibef.org/blogs
8. Digital Agriculture – Wikipedia https://en.wikipedia.org
9. Digital Agriculture in India – Challenges and Opportunities https://www.agrifarming.in
10. Julie Ingram, Damian Maye (2020) – "What are the Implications of Digitalization for Agricultural Knowledge", Frontiers in Sustainable Food Systems, Volume 4, www.frontiers.org
11. E.V.S.Prakasarao (2022) - "Digital Agriculture - A Future Disruption in India", Indian Journal of Fertilizers, https://www.researchgate.net/publication/359938430
https://www.blog.forumias.com

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Impact of E-HRM on Job Satisfaction (With Special Reference to College Teachers)

Dr.Anita R Natekar[1], Pooja N Chandakote[2]
[1]Professor & Research guide, Department of Management, K. S. A. W. U. Vijayapura
[2]Research scholar, Department of Management, K. S. A. W. U. Vijayapura
Corresponding Author- Dr.Anita R Natekar
Email : anitarnatekar4@gmail.com
DOI- 10.5281/zenodo.8035809

Abstract

The impact of E-HRM on job satisfaction of college teachers is a topic of growing interest as technology advances. Through the use of E-HRM, college teachers are discovering new ways to increase job satisfaction and stay informed on the latest trends in their field. By providing an improved system for managing personnel, E-HRM has the potential to create a positive impact on job satisfaction. With up-to-date information and improved management systems and have greater job security and be more confident in their work.This paper will seeks to explore the effect of E-HRM on job satisfaction among college teachers, and how it can be used to improve the overall performance of college educators.

Keywords : E-HRM, level of job satisfaction, college teachers, job security, quality education.

Introduction

E-HRM(electronic human resource management) is a form of HRM that uses digital tools and technology to automate and various HR processes and procedures. It is a systematic approach to identifying, recruiting, training, developing, and retaining employees. It helps organizations to manage their human resources in an efficient and effective manner. E-HRM helps organization to respond quickly and effectively to changing employee needs and to reduce manual paperwork associated with HR functions. It helps to provide better advanced education tostudents.

E-HRM applies to scheduling and networking, HR functions such as payroll processing, attendance, record keeping, and compensation are digitally maintained and activated and are therefore often subject to significant change. Technology helps with everything from hiring to retirement and has dramatically changed the way employees and managers access HR data. HR leaders face challenges in using technology from an HR perspective to connect and inform employees. People of the current generation have grown up with convenient access to digital information and communication technologies. The digital generation has grown up with nearly constant stimulus from computers and televisions.E-HRM is the use of web based technologies to deliver HRM services and practice within hiring firms.

Review of literature

1. Dr.M.Dhanabakyam & N.Shreejaa (2018) in their study titled "Impact of e-HR practices on job satisfaction in IT sectors with special reference to Coimbatore" the researcher concludes that this study was conducted to fill existing research gaps and explore the relationship between e-HR practices and job satisfaction in the context of the IT sector. There exist a significant association between demographic variables and influencing E-HRM factor.
2. Foiji (2019) in his study titled that "Strategic value of E-HRM in outsourcing HR functions" concludes that, Human resource management techniques are significantly impacted by technological advancements. Specifically, internet usage has altered a number of HR processes, including workflow, collection, preparation, training and compensation. Students all around the world are

becoming increasingly interested in E-HRM because it is now being used and improved by numerous organizations.

3. Foster. Hawing and Stein (2004) had depicted that using the internet and performing human resources functions e-HR had combined the use of electronic media with employee operating participation in the process to assist the organization in lowering administrative expenses, enhancing employee communication and contentment, and supplying real-time access to information. E-HRM systems have the advantage that management processes were likely modified and described during the system design phase.
4. Prakash (2019) in his study titled that "Digitalization of HRM practices in the Present Scenario" concludes that - Organizations are being transformed by digitalization, new technologies and skills related to this transition need to be identified and investigated. All firms are today regarded as being digital. In fact, HRM appears to be significantly influenced by digital technology in many different ways, as well as in the lives of workers.

Research gap

The previous study is based on employees working in IT sectors, banking sectors, etc,. And the level of job satisfaction, teachers effectiveness. Several of the studies emphasised the importance of job performance and job satisfaction.

Need of the study

One of the most important elements in job satisfaction is thought to be e-Human Resource practices. The e-HR activities are mostly used for the efficiency of the business and the employee because all education sectors have adapted to modern technology and innovation. However, there is no indication of how well employees have adapted to e-HR practices or their level of job satisfaction with them. It is important to determine how well the staff members can use software. It is important to measure the success of several E-HRM constructs, including job happiness and job satisfaction towards E-HRM, e-recruitment, e-performance and selection.

Objectives

1. To measure the impact of E-HRM on job satisfaction of college teachers.
2. To study the benefits of E-HRM.

Research Methodology

The present study focuses on the impact of E-HRM on job satisfaction (with special reference to college teachers).This study is based on secondary data,researcher used secondary data methods to achieve their goals. Secondary data were also obtained from articles, books,and google.

Impact of E-HRM on job satisfaction

In the current environment where technology is playing an increasingly important role in the education sector. College teachers have gained access to a wide range of tools and resources that can help them to manage their workload, improve their job performance, and increase in their job satisfaction. As such, it is essential for college administrators to understand the potential benefits of E-HRM and how it can contribute to higher job satisfaction amongst teachers. Furthermore, E-HRM has been credited with reducing the administrative burden on college teachers, which result in higher job satisfaction. It provide more accurate data for decision making. This leads to greater professional development as well as increased job satisfaction for those working in higher education institutions.

This has enabled them to focus more on their core teaching activities thus increasing their job satisfaction. The use of the E-HRM systems has also facilitated better communication between the college administration and teachers, enabling them to easily access information related to their job roles and responsibilities. It has also allowed college teachers to access their pay slips and other important document online, thereby providing them with more convenience and satisfaction. With the increased awareness and knowledge, college teachers can better understand the expectations of their job and make informed decisions in order to better manage their workload. And also they can access information about the performance of their students, providing them with a better understanding of their progress. This has allowed college teachers to become more engaged in the development and improvement of their students and had a positive effect on their job satisfaction.

Model of E-HRM

Advantages

1. E-HRMenables administrators to manage their human resource more efficiently and cost-effectively.
2. It reduces the workload of teachers and improve their job satisfaction.
3. Easy to access the information.
4. Increases access to HR information and tools.
5. Improves decision-making.
6. It enables remote working for college teachers.
7. Improving quality of services.
8. It helps to prepare the documents, and analyzing data quickly.
9. Storing workforce information for strategic decision-making.

Disadvantages

1. Security concern.
2. Privacy concern.
3. Implementation of cost.
4. Change management.
5. Technical issues.
6. Requires a high level of skills and knowledge.
7. Organizations need to invest more in training and development before adopting E-HRM.

Conclusion

The researcher concluded that the implementation of E-HRM can have a positive impact on job satisfaction for college teachers. It can reduce the time taken to process paperwork, improve communication between teachers and administrators, and provide teachers with access to a range of useful information and resources. With the right implementation and training, E-HRM can help improve job satisfaction among college teachers and lead to a better work environment and improved performance of college teachers.

References

1. Dr.M.Dhanabakyam & N.Shreejaa (2018) in their study titled "Impact of e-HR practices on job satisfaction in IT sectors with special reference to Coimbatore", International journal of creative research thoughts (IJCRT), Feb 2018, Vol 6, Issue 1, Page No. 2430 - 2437.
2. Prakash (2019) in his study titled that "Digitalization of HRM practices in the Present Scenario", International journal of research in management studies, Jan 2019, Vol 4, Issue 1, Page No. 1-5.
3. Parveen kaur (2012) in her study titled that "E-HRM : A Boon or Bane" A national journal of management, Aug 2012, Vol 1, Page No. 35-38.
4. Mazen J.AI Shobaki, Samy S. Abu Naser, Youssef M. Abu Amuna, Suliman A. El Talla " Impact of electronic human resources management on the development of electronic educational services in the universities"International journal of engineering and information systems (IJEAIS) , March 2017, Vol 1, Issue 1, Page No. 1-19.
5. https://www.marketing91.com/E-HRM/
6. https://encrypted-tbn3.gstatic.com/images?q=tbn:ANd9GcSxEw6EE3edGxwJ4ujvhgo06g7hARX50zjI9LXQ3GhjfY47al5O
7. www.google.com

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Understanding the Role of Women's safety mobile applications – a case study

Sushma Pawar[1], Dr. Tahmeena Nigar Sultana[2]
[1]Research Scholar, Department of Journalism and Mass Communication
Karnataka State Akkaahadevi Women's University, Vijaypura, Karnataka, India
[2]Assistant Professor, Department of Journalism and Mass Communication
Karnataka State Akkamahadevi Women's University, Vijayapura, Karnataka, India
Corresponding Author- Sushma Pawar
Email: sushmaanpawar@gmail.com
DOI- 10.5281/zenodo.8035827

Abstract

In 21st century the safety of women in India is widely discussed everywhere. Now it has become a serious issue. The crime rate is also increasing. Women safety is a major public challenge in India. Women are not safe either at home or outside. They are struggling to be protected and feel safe in the outside world. There are laws but there must be adequate security measures that must be strictly followed to protect women against violence. While the government organizations are trying their level best to fight against this issue. There are so many mobile phone applications for women safety. This study proposes to study the knowledge and user perception about women's safety mobile applications among women. This article intends to find out the utilization pattern of women safety mobile applications. Furthermore, this study also tries to identify how the mobile applications are promoting the women safety. For this article descriptive research was adopted and the primary Data is collected through a survey by using a structured questionnaire. A total of 120 respondents were selected randomly for the collection of primary data.

Keywords: Women, safety and Mobile application.

Introduction

In today's world women's safety is a very significant concern, particularly in a country like India, where robbery, sexual assault, rape, women trafficking and other domestic abuse are common. So in order to protect women form such a horrible situation, one must first indentify the resources like the best safety apps that may be called upon in an emergency to rescue them from any risky condition.

Nowadays, women safety has become one of the most critical issue. It is one of the important, undeniable concepts and strategies for any civilized society for centuries now. Rejecting fundamental rights to safety, freedom to follow whatever they want, personal decision, sexual and physical empowerment are not new issues but unfortunately, these are some of the issues that have not yet been managed in a way that could be eradicate even in recent times. "Majority of such cases are happened to women is getting kidnapped at every 44 minutes, raped at every 47 minutes, 17 dowry deaths every day. The fear of harassment against women is not only the condition at outside but it may also happen at homes; women are not so physically fit as compared to men so in case of a need a helping hand would be a boon for them". (Sathyasri, Jothi and etc, 2019) With the advancement in science and technology, we are glad that the idea of women's safety apps has been developed in the market to make sure that women in the general public are completely saved and mobile application development agency to guide us to develop women's safety apps. In today's world all of them using smart phones and smart phone give so many women safety apps and devices evolved for women safety which can be activated only by a touch or one click or shake the mobile. Women's safety apps are created to help women feel safe and secure when they are out alone travelling or doing other activities. In present year, there has been a surge in the development of safety

apps designed to help women to protect themselves from harm. When it comes to personal safety, there are several safety apps available that can help women stay safe.

Review of Literature:

Sharique Hassan Manazir, Madhav Govid and Rubina (2019) in their study 'My Safetipin Mobile Phone Application: case study of E-participation Platform for women safety in India' reveals that mobile applications like safetipin are a welcome to start, currently with all existing technical glitches and existing user data collection norms it is not even in the state of providing an alternative medium for raising awareness on women safety issues and hence cannot be termed as an e-participation platform. There are enough improvement areas where the application providers can work to make it more accessible and user-friendly measures only then can it create a healthy digital democracy infrastructure for everyone and females specifically. Mohamed Ashiq and Manivelprabhu (2013) in their Study 'Design of Electric Shock Anetenna Watch with Automated SMS facilities for women Safety in India under Government License' examines that since women safety is one of the major issues, it can be fulfilled by our project. Government should take not giving license of these watches only for women who want to save them or who feel they are in danger. If so, then misuse of this project its highly avoided. They also examines that additional equipments are needed for the women to protect themselves.

Sathyasri B, Jaishree, Jothi, Pratheeba T and Ragapriya K (2019) in their research 'Design and Implementation of Women Safety System Based on Iot Technology' reveal's that women's were critically faced so many issues and they help to solve them technologically sound equipment and ideas. The merit of this work is it not only provides safety and it also provides security by means of self-defence mechanism. The crime against the women can be now brought to an end with the help of real system implementation model.

Shivani R. Jadhav, Pushpa and Vaibhav Thigale (2020) in their study 'A ESP based smart device Women Safety using IOT' found that the existing systems don't seem to be powerful enough to stop crimes against ladies. Min purpose of the system is quick method, low price of development, correct trailing. This project places forth a method wherever a girl, once at risk, will in a flash intimate to the involved authorities. The projected technique uses GPS trailing of the sensible phone to urge the device co-ordinate. This system additional uses the image and alert message to tell the fa mily and police personnel.

Statement of the problem : Mobile phones are giving several women safety applications. Safety apps are designed especially for women to communicate with others that women may need help and access to help is an emergency so it felt necessary to know how many women's were using applications and understanding the role of women's safety mobile applications

Objective

1. To assess the socio-personal characteristics of the respondents
2. To study the knowledge and user perception about women's safety mobile application
3. To identify the how mobile application are promoting the women safety
4. To understand the role of women's safety mobile applications
5. Find out the utilization pattern of mobile application among women

Methodology

To understanding the role of women's safety mobile applications descriptive research design was adopted. The descriptive research method describes the characteristics of the population and phenomenon that is being studies. The primary data is collected through a survey method by using a structured questionnaire designed in Google form and shared through the online source like WhatsApp, Facebook, e-mail and Instgram. A total of 120 respondents were selected randomly for primary data collection.

Date analysis

Table 1: Age

Age	Frequency	Percentage
18 to 20	8	6.7%
21 to 25	40	33.3%
26 to 30	44	36.7%
31 to 35	16	13.3%
Above 35	12	10%
Total	120	100%

Table 1 reveals the age group of the respondents. It indicates that most of the women (36.7%, N=44) belonged to the 26 to 30 years age group, followed by 21 to 25 (33.3%, N=40), whereas (13.3%, N=16) respondents were belonged to 31 to 35, followed by 10 percent (N=12) were Above 35 year age groups and only 6.7 percent (N=8) were belonged by 18 to 20 year age groups.

Table 2: Education Qualification

Education qualification	Frequency	Percentage
Primary or Secondary	00	00
Pre University	20	16.7%
Under Graduation	36	30%
Post Graduation	48	40%
Other	16	13.3%
Total	120	100%

Table 2 reveals the educational qualification of the women. It indicates that the majority of the respondents (40%, N=120) had post Graduation, followed by Under Graduation studies (30%, N=36). Whereas (16.7%, N=20) were belonged to Pre University, 13.3 percent (N=16) were belonged to other educational categories and no one single respondents were belonged to Primary or Secondary education.

Table 3: Occupation

Occupation	Frequency	Percentage
Student	44	36.7%
Self Employee	16	13.3%
Private Sector	24	20%
Government Sector	28	23.3%
House wife	8	6.7%
Total	120	100%

Table 3 reveals the occupation of the women. The above table shows the most of the respondents (36.7%, N=44) were students, followed by 23.3 percent (N=28) were Government sector, whereas 20 percent (N=24) were private sector, followed by (13.3%, N=16) were Self Employee and only 6.7 percent (N=8) were House wives.

Table 4: Family Monthly Income

Monthly income	Frequency	Percentage
Less than 20,000	28	23.3%
20000-50000	64	53.3%
50000-1,00,000	20	16.7%
Above 1,00,000	8	6.7%
Total	120	100%

It is notice from table 4 reveals the family Monthly income of the women. It shows that (53.3%, 64) of the women have 20000 to 50000 family monthly Income, followed by 23.3 percent (N=28) respondents have less than 20000. Whereas (16.7%, N=8) were belonged to above 50000 to 1, 00,000 and only 6.7 percent (N=8) were belonged to above 1, 00,000 family monthly income.

Table 5: Marital status

Marital status	Frequency	Percentage
Married	36	30%
Unmarried	84	70%
Total	120	100%

It can be found from the table 5 that a great majority (70%, N=84) of the respondents were unmarried and only 30 percent (N=36) were married.

Table: 6 Knowledge about women's safety mobile applications

Opinion	Frequency	Percentage
Yes	68	56.7%
No	52	43.3%
Total	120	100%

It is Observed from table 6 the more than half of the respondents (56.7%, N=68) were agreed to they have knowledge about women's safety mobile application and only

43. 3 percent (N=52) respondents were said that they didn't aware about such mobile applications.

Table: 7 Opinion regarding Mobile applications are promoting women safety

Opinion	Frequency	Percentage
Yes	44	55%
No	4	5%
Sometimes	32	40%
Total	120	100%

It is observed from the data presented in table 7 that the Mobile application is promoting women safety. It shows that the more than half of the respondents (55%, N=44) opined that mobile applications are promoting women safety, followed by (40%, N=32) respondents said sometimes they promote women safety and only 5 percent (N=4) opined that not at all mobile applications were promoting women safety. This table results indicates that most of them agreed and trust that the mobile applications were promote women safety.

Table 8: Opinion about mobile applications plays an important role for women safety

Opinion about the respondents	Frequency	Percentage
Yes	52	65%
No	4	5%
Sometimes	24	30%
Total	120	100%

It is observed from the data presented in table 8 that the opinion about the mobile applications plays an important role for women safety. It shows that the majority of the respondents (65%, N=52) were agreed that women safety mobile applications were playing an important role for women safety, followed by sometimes (30%, N=24) and only 5 percent (N=4) respondents were disagreed to this opinion. This table results indicated that most of the women said mobile application are playing very important role for women safety.

Table 9: Opinion of having a mobile application for safety purpose

Opinion	Frequency	Percentage
Yes	65	54%
No	55	46%
Total	120	100

The results in table 9 stated that having mobile applications for safety purpose. That the half of the respondents (54%, N=65) were having mobile applications for safety purpose and 46 percent (N=55) were didn't have the women safety mobile applications. This table shows that most of the women were not aware of women safety apps.

Table 10: Number of mobile applications for women safety

Number	Frequency	Percentage
1 to 2	40	61.4%
3 to 4	16	25%
4 to 6	05	7.5%
Above 6	04	6.1%
Total	65	100%

Table 10 indicates the number of mobile applications for women safety. It shows that most of the respondents (61%, 4) have 1 to 2 number of safety application on mobile, followed by 25 percent (N=16) have the 3 to 4 number of apps. Whereas 7.5 percent (N=05) have 4 to 6 women safety mobile applications and only (6.1%, N=04) were have above 6 mobile applications.

Table: 11 duration of using mobile applications

Duration	Frequency	Percentage
7-5 years	00	00
5-3 years	03	5%
3-1 years	20	30%
Less than one year	42	65%
Total	65	100%

Table 11 reveals the duration of using mobile applications. The above table examined that majority of the respondents (65%, N=42) were using mobile applications from the period of less than one year, followed by 30 percent (N=20) respondents were using from the period of 3 to 1 year. While 5 percent (N=3) respondents were using mobile application from the period of 5 to 3 years. Whereas no one single respondents were opined that they didn't used from the period of 7 to 5 years. This means nowadays most of the women were not using mobile applications for women safety.

Table 12: Impact of Women safety mobile applications

Opinion	frequency	Percentage
Positively	13	20%
Negatively	00	00%
Both	52	80%
Total	65	100%

Table 12 reveals the impact of women safety mobile applications that agreat majority of the respondents (80%, N=52) opined they have both positive and negative impact, followed by 20 percent (N=13) respondents said it have impacted positively and not a single women opined that it have negative impact.

Table 13: Opinion of the respondents that facing any kind of problems

Opinion	Frequency	Percentage
Yes	20	31%
No	28	23%
Sometimes	32	46%
Total	65	100%

The results in table 13 stated that most of the respondents (46%, N=32) were sometimes facing problems, followed by 31percent (N=20) respondents were facing problem and only 23 percent (N=28) respondents said they didn't faced any kind of problems while using women safety mobile applications.

Table 14: Knowledge of using the safety apps

Opinion	Frequency	Percentage
Yes	53	81%
No	12	19%
Total	65	100%

Table 14 reveals the knowledge of using the safety apps that a great majority of the respondents (81%, N=53) have the knowledge of using women safety mobile applications, followed by 19 percent (N=12) respondents don't how to use it.

Table 15: facing any Technical issues while using safety apps through mobile

Opinion	Frequency	Percentage
Yes	16	25%
No	37	57%
Sometimes	12	18%
Total	65	100%

It is noticed from table 15 reveals the facing of technical issues while suing women safety apps through mobile that most of the respondents (57%, N=37) opined that they didn't faced any technical issues while using mobile applications for women safety, followed by 25 percent (N=16) respondents said they are facing technical issues and only 18 percent (N=12) respondents said sometimes they face technical problems.

Table 16: Types of mobile applications for women safety

N=65

Types of Mobile application	Frequency	Percentage
112 India	30	46.15%
My Safetipin	28	44%
SHEROES	25	38.4%
bSafe	25	38.4%
Smart 24X7	18	28%
Shake2Safety	12	18.4%
Himat App	8	12.3%

Table 16 reveals that that most of the respondents (46.15%, N=30) were using 112 India women safety app, followed by 44 percent (N=28) respondents were using MySafetipin app. whereas (38.4, N=25) respondents were equally using SHEROES as well as bSafe women safety mobile applications. While 28 percent (N=18) respondents were using Smart 24X7 women safety Applications, followed by 18.4 percent (N=12) respondents were using Shake2Safe aap and only (12.3%, N=8) respondents were using Himat App.

The above result shows that 112 India is the most popular application among the selected women. 112 India app is both for women and children safety. It provides a special SHOUT feature which alerts registered volunteers in the vicinity of victim for immediate assistance.

Table 17: Platform to communicate to mobile application for safety

N=65

Applications	Frequency	Percentage
Through the Whatsapp	45	69.2%
Through the location	53	81.5%
Through the calls	34	52.3%
Through the SMS	44	67.6%
Through the voice note	02	3.07%

Table 17 indicates the platform to communicate to mobile application for safety that the majority of the respondents (81.5%, N=53) were communicate through the location, followed by 69.2 percent (N=45) respondents were communicating them through the WhatsApp. Whereas 67.6 Percent (N=44) respondents were communicating through the SMS. While through the calls (52.3%, N=34) and only 3.07 percent (N=02) respondents were communicating through the voice note.

It is found form the study that most of the women were communicating or go through different platforms that easily they get help while they are in difficult situcation. Specially through the location, SMS, Calls and Whatspp Chating.

Table 18: Opinion of the following

Opinion of the respondents	Strongly Agree	Agree	Neutral	Disagree
Women safety mobile application build women empowerment	30 (46.2%)	24(37%)	11(16.9%)	-
Women safety app is developed from protecting lives of people in any emergency situation	24(36.9%)	26(40%)	15(23.01%)	-
Women safety app is the best app to inform and update your close ones if you are in an unsafe place	44(67.69%)	21(32.4%)	-	-
Safety of an area measured using various parameters like public transport, visibility, security etc	34(52.3%)	10(15.4%)	16(25%)	5(8%)
Mobile applications are best for women safety	55(84.6%)	7(10.8%)	03(4.6%)	-

The information presented in table 18 reveals the opinion about the Women safety mobile application build women empowerment. It shows that the most of the respondents (46.2%, N=30) were strongly agreed with this statement, followed by agree 37 percent (N=24). While (16.9, N=11) respondents were neutral and not a single respondents were opined.

The above table reveals the opinion about women safety app is developed for protecting lives of people in any emergency situation. It shows that most of the respondents (40%, N=26) were agreed, followed by strongly agree 36.9 percent (N=24). Whereas (23.1%, N=15) respondents were neutral and not a single respondents were disagreed.

The result presented in the above table reveals the opinion about women safety app is the best app to inform and update your close ones if you are unsafe. It shows that majority of the respondents (67.69%, N=44) were strongly agreed, followed by agree 32.4 percent (N=21) and not a single respondents were said neutral and disagreed to this statement.

It is found from the above table about the opinion of women regarding safety of an area

measured using various parameters like public transport, visibility, security etc. It shows that the most of the respondents (52.3%, N=34) were strongly agreed, followed by neutral (25%, N= 16). Whereas 15.4 percent (N=10) respondents were agreed and only 8 percent (N=5) respondents were disagreed to this.

It shows the opinion of women about mobile applications are best for them that majority of the respondents (84.6%, N=55) were strongly agreed, followed by 10.8 percent (N=7) were agreed. Whereas (4.6%, N=3) respondents were neutral and not a single respondents said disagree. This means that women were aware of women safety mobile application they all are strongly opined that the application were best for women safety purpose.

Suggestions:

1. The Government should take initiative to create awareness about women safety applications in all the institutions.
2. District wise NGO's were also create and spread the information's regarding how to use the women safety mobile applications for security purpose.
3. Media can create the women safety advertisements and spread them in several categories.
4. Social media take a responsibility to create awareness about women safety applications because nowadays everyone can using social media this is how they are knowing the women safety applications.
5. In Educational filed also take a responsibility to train the students and give knowledge about women safety apps.

Conclusion:

Nowadays even the most secured cities are not safer for women any more. Women's were facing so many problems but they are being aware of such women safety mobile applications. To help out women in such tough times, the companies have introduced security apps on mobile phones. The Smartphones loaded with women security apps can help emergency alter to selected people. However, it still remains a big question whether these security or safety apps can really using or aware of women's? Unfortunately still in 21st century some of place likes vijayapur districts women's most of them were didn't know the applications. This study reveals that most of them were not aware of these apps. When women can use such safety apps that time women can save themselves from the unfortunate incidents.

Reference:

1. Abantika D (2023). Women's day 2023: 7 Best Women's Safety Apps in India, https://www.cashify.in/womens-day-top-safety-apps.
2. 21Twelve Interactive, Why women's safety app is important (2021), https://www.21twelveinteractive.com/why-women-safety-app-is-important/ on 19 April 2023.
3. I'M SAFE, Why is Women's safety app like I'M SAFE Important?, (2022), https://www.imsafe.app/blog/why-is-a-womens-safety-app-like-im-safe-important on 19 April 2023.
4. Mohamed Ashiq and Manivelprabhu (2013) A study of 'Design of Electric Shock Anetenna Watch with Automated SMS facilities for women Safety in India under Government License', International Journal of Emerging Technology and Advanced Engineering, 3(3), https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=a587e2f1405f88d55c9e3738230794970a5d6c43 on 27 March 2023.
5. Sathyasri B, Jaishree, and etc (2019) A study of 'Design and Implementation of Women Safety System Based on Iot Technology', International Journal of recent Technology and Engineering, 7(6), http://ieeeprojectsmadurai.com/IEEE%202019%20IOT%20BASEPAPERS/2_WOMEN%20SAFETY.pdf on 27 March 2023.
6. Sharique Hassan Manazir, Madhav Govid and Rubina (2019) A study of 'My Safetipin Mobile Phone Application: case study of E-participation Platform for women safety in India', Journal of Scientometric, 8(1), PP-47-53, https://www.jscires.org/sites/default/files/JScientometRes-8-1-47.pdf on 27 March 2023.
7. Shivani R. Jadhav, Pushpa and Vaibhav Thigale (2020) A study of 'A ESP based smart device Women Safety using IOT', International Research Journal of Modernization in Engineering Technology and Science, 2(9), https://www.irjmets.com/uploadedfiles/paper/volume2/issue_9_september_2020/4030/1628083159.pdf on 27 March 2023.

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

A Comparative Analysis on Digital Marketing and Traditional Marketing: Consumer Perspective

Raksha Prabhu K
Lecturer in commerce, Trisha Vidya College, Katpadi, Udupi-574105
Corresponding Author- Raksha Prabhu K
Email- krakshaprabhu@gmail.com
DOI- 10.5281/zenodo.8035841

Abstract:

Throughout centuries marketing has always been consumer centric. The main reason behind marketing is to make goods and services available to the consumers as per their needs, wants and to identify the right channel of advertisement which becomes very crucial in marketing campaign. Marketing is the way to increase buying and selling speed at the market place. In the past few yearse-marketing technologies have become the fastest growing technology.The main objective of this study is to analyze consumer motives and reasons related to the purchase of goods or services and identifying the differences in marketing strategies used depending on the demographics of respondents. There is a drastic shift into digital marketing after covid-19 pandemic; hence it has negatively impacted the traditional marketing. The purpose of this study is to recognize the differences in consumer opinions by availing distinguished services of traditional and digital marketing strategies. Marketing is ongoing process since it has been shifted from traditional marketing to digital marketing. This paper has acknowledged the traditional and digital marketing with help of consumer opinion and after using the different service experience of traditional and digital marketing. The number of responses collected is 150 responses.

Introduction

Traditional marketing is regular mode of marketing which lead us to reach targeted audience with various offline advertising and promotional methods. The fundamental aspects remain the same because it was evolved over the past few decades. It is based on four Ps of marketing: Product, Price, Place and Promotion. Traditional marketing uses traditional media like TV, Radio, newspaper etc.

Digital marketing leads to any form of advertising or marketing on the web. It is also called as online marketing. It has become very easy for the marketers to grab the attention of the consumers. Digital marketing is a very broad field which includes attracting customers via email, search platforms, social media etc.

Problem Statement

The traditional market is dominated by digital market. Nowadays, online shopping is rising very fast in recent years. Today, more people are connected in internet and are ready to do business through digital marketing. Digital marketing is dominating to traditional business by continuous advertisement strategy like email marketing, social media marketing etc. Traditional marketing is been used by the marketers for a longer period of time without any help of technology like social media, web etc. They use traditional method like face to face communication, Banners, TV, radio and magazines etc.

The perception among the people as well as large firms toward this future is still in state so to find that the below statement will be helpful,

1. Comparative analysis of Digital and Traditional Marketing
2. Effectiveness and Efficiency of digital Marketing
3. Consumer preference on digital and traditional marketing

Needs for the study

1. To identify the efficiency of upcoming digital marketing
2. To understand the consumer preference on digital and traditional marketing

Objective of the study

1. To determine the loophole in Digital and Traditional marketing
2. To compare the insight of respondents on traditional and digital marketing.
3. To identify the satisfaction level of customers about digital and traditional marketing

Research Methodology

Research methodology is very important to systematically represent research on any problems. It helps the researcher in studying the research problem also the logic behind them. It helps the researcher to analyze the cause and effect of the relationship that is to recognize the customer behaviour and other variables. The research methodology will interpret the knowledge in systematic way and give a diverse outcome of the research problem.

Data Collection

Both primary and secondary data are used for the study. Primary data have been collected from the respondents through questionnaire. The secondary data have been collected from the journals, websites, magazines, newspapers and research studies in related fields.

Research Design

Descriptive design implies that, it gives a detailed sketch (or) profile of the respondent
population being studied. In general, it is more structured and formal in nature. The main
objective of this study is to provide a comprehensive and detailed explanation of the phenomena under the study. The research design selected for the study is descriptive research design. A simple random sampling technique was used to collect the data to examine the traditional and digital marketing with the sample size of 150.

Data Analysis and Interpretation

It has been observed that all thecustomers are aware about the concept of marketing.31% browse internet for 1-2hrs, and it is followed by 23% browse internet for 2-3 hrs. It is further identified that 20% browse internet more than 4 hrs. Customers use social media on regular basis but highly used social media app is WhatsApp 88% followed by YouTube 70.70%. The most effective form of advertising is Social Media apps 67.3%, followed by TV advertisement with 12.7%, YouTube advertisement 12.7%, Newspaper or magazine advertisement 3.3%. According to majority of customers 72% social media is the good medium to introduce new product in market. 46% of customers Agree that Branding Ads through digital media has more reach than any other platforms. 54% of the customers give neutral opinion on quality of products when compared with traditional and digital market. 53.3% customers believe that in traditional market customers can be more interactive when compared with digital marketing.The major loophole that digital marketing carries over traditional marketing is there is more scope for fraudulent activities 65.3% customers agree, another issue is privacy issue with 12%. One major loophole of traditional marketing is it is time consuming which is 40%, followed by limited choice which is 32.7%. According to customers the mode of marketing pre3fered is digital marketing with 60.7%. The market with 82.7% has more risk factor than traditional market. Customer agrees that digital market has more freedom of choice than traditional market.

Conclusion

The main purpose of this research was about the comparison between traditional marketing and digital marketing and the objective was to analyze and derive difference betweentraditional and digital marketing. In our country internet users are increasing each passing day. Due to this, companies are spending huge amount of their budget on digital marketing Traditional marketing comprises of print advertisement in newspapers, magazines, direct mail, business cards, posters, TV and radio commercials and brochures or leaflets. These were effective mediums until the advent of the internet and they are perhaps somewhat relevant even today, as a miniscule part of a brands marketing strategy. It has been found out that in digital marketing we are able to focus target market in a better way than traditional marketing. The study has also showed that in order to utilize the digital marketing in an effective way, the companies are required to design an effective platform. The transition of newspaper from the printed version to the online version exemplifies the current trends of the digitalization.

References

1. Davis, F. D. (1989). Perceived Usefulness, Ease of Use and User Acceptance of Information Technology.
2. MIS Quarterly, 13(3), 319-340. [2]. Gefen, D., Karahanna, E, E., & Straub, D. W. (2003).
3. Trust and TAM in Online Shopping: An Integrated Model. MIS Quarterly, 27(1), 51–90. [3]. Hoge, S., & Cecil , C. (1993).
4. The Electronic Marketing Manual. ABA Journal, 22, 175-185. [4]. Jarvenpaa, S. L., & Todd, P. A. (1997). Consumer Reactions To Electronic Shopping on the World Wide Web. International Journal of Electronic Commerce, 2, 59-88. [5].
5. **https://www.ijres.org/papers/Volume-10/Issue-5/Ser-2/H10053538.pdf**
6. **https://turcomat.org/index.php/turkbilmat/article/view/7055/5743**
7. **http://dspace.christcollegeijk.edu.in:8080/jspui/bitstream/123456789/1139/20/CCASBCM145.pdf**

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

A Study on the Impact of Digitalization in Educational Sector in India - Opportunities and Challenges.

Dr.Anita R Natekar[1] , Ashwini J Toravi[2]
[1]Professor & Research guide, Department of Management, K. S. A. W. U. Vijayapura
[2]Research scholar, Department of Management, K. S. A. W. U. Vijayapura
Corresponding Author- Dr.Anita R Natekar
Email : anitarnatekar4@gmail.com
DOI-10.5281/zenodo.8035847

Abstract
Every person needs education, and digital learning is the prevailing trend and essential for all students to improve their studies. Students and learners can now more easily and widely obtain knowledge due to digital education. The objective of the study is to know the impact of digitalization in education sector in India and also opportunities, drawbacks of digitalization in education. The information used in this study was gathered from secondary data. The study concludes that digitalization is most important element in education, if they adapt advanced tools and techniques in colleges it will improve the learning method. Formal and traditional method of education is also important for student, so if we combine both traditional method and digitalization in education it will be helpful for students and teachers to learn in a easy and innovative way and it will improve digital literacy level.

Keywords: digitalization, education, students, learning

Introduction

Education plays an important role in society, only with the good and quality of education, society and nation will develop. In the past few years education is one of the major sector globally which has experienced revolutionary changes. In general, digitization has been applied to an education in a slow and gradual manner. The transition from analogue electrical and mechanical equipment to the current digital technologies is referred to as the “digital revolution.” The time period began in the 1980s and is still going now. The information Era officially begins with the Digital Revolution.

Technology and digital devices are used in the strategy or process known as digital education. This is a young and expansive field that will aid any learner in learning and acquiring information from any location in the nation. It is thought that the next generation of schooling and learning in India is digital education. To adapt digitalization in education, there is a great need of
proper infrastructure, good internet connectivity, modern digital equipment, secure platforms and digital literacy.

This modern application of technology benefits instructors as well as students. By considering creative methods, educators develop a more effective and innovative method of educating students. As a result, learning becomes more engaging and enjoyable.There will be much more equality of education opportunities with the advent of digitalization. Students of today live more virtual lives. From elementary school children to college grads, students are seeing and exhibiting a change in communication styles.

However, the covid-19 pandemic has suddenly expedited this process overnight, leaving both teachers and students feeling uneasy about the unexpected change. Some are unimpressed by the full virtual experience of education and digital communication, while some are persuaded and exited by the accessibility of online learning. Learning is now dynamic, stimulating and practical thanks to the development of the internet and ever improving technology. Education is no longer just confined to textbooks and lecture halls it has merged with technology, creative teaching methods, and digital information.

As a result of the Internets increased affordability and accessibility, traditional and digital teaching approaches will increasingly converge. The government is constantly engaged in developing crucial policies that will expand the Indian market for digital education

Review of Literature

1. Dr. Puja Ahuja (2015) in their study entitled "The digital revolution and its impact on education". Concludes that- The digital revolution has impacted our lives in a number of positive as well as negative ways, as reduce the harm caused by the negative elements. However, we try to take advantage of the positive aspects for ourselves and our students, rather than ignoring them.
2. R. Raja, P.C.Nagasubramani (2018) in their study entitled "Impact of modern technology in education" concludes that- Technology influences education in a beneficial way, but it also has potential drawbacks. Teachers and students should make use of this in a positive way and remove the obstacles that prevent many students and schools from attaining success. Therefore, it is now necessary for every nation to establish a more technologically advanced education sector in the future.
3. Jirmalsingh (2019) in their study entitled "Impact of digitalization on education:opportunities and challenges" concludes that- An innovative form of education is digital learning. It is comprehensive approach to education that satisfies the demand of digital natives. A collaborative atmosphere with
4. freedom of choice and access to a wide range of technology tools is what makes online learning successful. However, the challenges of digital learning must be overcome with support and best practice solutions in order for students to succeed in this learning environment. Both teachers and students must accept the transition from conventional classroom methods to an e-learning strategy for education.
5. Dr.HimanshuRastogi (2019) in their study entitled " Digitalization of education in India- An analysis" concludes that- There is no denying the fact that digitizing education is urgently needed in order to connect it with the global education environment and system, but it is also important to consider how this system should be implemented in order to reduce the negative effects of youths' too much dependence on digital information sharing and safeguard them behavioural and psychological disorders. At the same time, it is imperative that policymakers create a system that combines conventional and contemporary teaching methods, safeguards the relationship between teachers and students, and supports digital education. Additionally, steps should be taken to ensure that students do not access information that is inappropriate for them and could lead to violent thoughts and unsocial behaviour in them. To turn our youth asset into a productive population consisting of capable and responsible citizens, we must approach the matter thoughtfully.
6. Jayaprakash M.G, Dr.vishalkhatri (2020) in their study entitled "Impact of technology and Digitization in Indian education and learning: A critical analysis". Concludes that - The study found that changing youth development is essential for the advancement of digital education at all levels. This will lead to a significant increase in investments in academic infrastructure. The development of online education in Indian society depends on successful legal and industrial individual ownership environments, speaking gadget people, and good politics.

Research gap

Many studies on the impact of digitalization on education in India were conducted a few years ago. I have included in my study the current scenario of digitalization and how it is affecting education, both positively and negatively, as well as the difficulties India is facing in adopting digitalization, in my study.

Need of the study

One of the most essential components in education nowadays is digitalization. Digitalization is mostly used for the efficiency of the colleges and the students because all educational sectors have adapted to modern technology and innovation. However, it is unclear how well students and educational institutions have adapted to digitalization.

Objectives

1. To study the impact of digitalization in education sector.

2. To study the drawbacks of digitalization in education.
3. To study the need of digitalization in education sector.

Research methodology

The information used in this study was gathered from secondary data. To collect the needed data different references were used such as websites, academic journals, publications and articles.

Impact of digitalization

The current period of time has been referred to as digital age. Almost every aspect of life was made possible by technology and automation and many indicators show that it has been beneficial to us. In the area of education, digitalization has number of benefits. The advantages and disadvantages in education can be explored endlessly.

The future, though, is undoubtedly digital. Education is only one element of life that has been affected by the trend of digitalization. Therefore, it is essential that learn to utilize this convenience as a tool to enhance life rather than one to replace essential components of it. As part of PM eVidya, the Ministry of Human Resource Development (MHRD) launched DIKSHA—Digital Infrastructure for Knowledge Sharing—under the AtmaNirbhar Bharat programme, which is the "One Nation; One digital platform" initiative aiming to coordinate the efforts of online, digital, and on-air educational modes towards education.It is a portal for schools all across India that offers courses and quizzes for both instructors and students. Similar to this severl other technology-based efforts on this platform, including Vidyadaan, SWAYAM, e pathshala, shikshavani and many more, have drastically changed how people live in the country.

Due to the requirement for less paper, this has a direct and positive influence on the environment while also reducing cost and utilizing resources to their fullest potential. India is thus in a good position to profit from the digitalization of education, which has the potential to profoundly alter how we learn as well as what we learn.

By adapting digitalization all the study material can be accessed over the internet such as pre-recorded teaching on video. In addition, they can choose to attend online courses which give them a certain degree of convenience and flexibility without physically being present in the institution. According to UNESCO, 1.37 billion students in 138 countries around the world have been affected by school and university closures since the start of the covid-19 outbreak. Almost 60.2 million school teachers and college teachers are no longer kept inthe classroom. Even though digitalization make easy access of education to students it have many drawbacks that cannot be avoided.

Advantages of digitalization in education

1.Easy access of data

Online research may be beneficial for students who wish to compose an essay or work on their research paper, even if school libraries lack some sections of information or have outdated books. Students who have access to the school's computer lab can find countless articles and content websites where they can conduct the research.

2.Time saving

Because the video lessons are only created once and then used. Additionally, it saves the student time because there are less journey to and from lectures.

3.Better communication

Students from all around the world may now contact with one another because of the internet. Due to this, learning a foreign language is incredibly simple, and young minds are exposed to more ideas. Students who want to speak with or meet with their international colleagues might benefit from video conferencing.

4.Improves digital literacy

In the age of technology, digital literacy is a necessity for everyone. Knowing how to find and share information using technology is known as digital literacy. It's a necessary life skill and a requirement for many jobs. Even submitting a job application will probably include technology.

5.Students can learn at their own pace

Students can learn at their own pace with digital education in addition to having access to it whenever and from anywhere. To get a better understanding of a subject, they can read the material again and again or go back and review earlier modules. The learning platform allows students 24/7 access to a variety of material, including recorded lectures that they may want to watch again. When a lecture is over, the information is kept, not lost.

6. Student progress tracking

It's important to track student progress to understand areas for improvement and areas to focus on. Technology allows educational

institutions to closely monitor student individual grades and attendance records. You use this information to plan your lessons and provide appropriate resources to help your students reach their goals.

Major drawbacks of digitalization in education

1. Online classes will distract the students

The decrease in attention spans is mostly due to the use of digital gadgets in classrooms. Children today have to switch between tabs while juggling a lot of information on one screen. Even in online sessions, we observe children managing three to four distinct applications at once. The potential effects of this short attention span worry a lot of people as well as organizations.

2. Mental health of the students

People are worried more and more that their children won't be able to adequately interact with the real world because of digital devices. Children's concern about social and mental health has only grown as result of a rapid increase in the amount of time they spend in front of devices.

3. Gender Differentiation

The distinction between males and girls in our nation is another negative. Only 28% of the 733 students in the government schools in Bihar had smartphones, compared to 36% of the boys, according to a recent survey. Furthermore, these smartphones belonged to men most of the time; girls had less access to

Challenges of digitalization in education

1. Lack of up to date computers - in India many colleges and universities still lack enough access to modern resources and tools.
2. Digital literacy: teachers must have advanced technology knowledge and skills to be able to teach students effectively.
3. In rural India, for instance, about 30% of people lack computer literacy, and many don't even know how to turn on a computer. If we want to offer online education across the nation, having a fundamental understanding of computers is crucial.

Conclusion

The digital revolution changed our lives both in positive and negative ways, as with other technological advances. It is undoubtedly part of our responsibility as learners to work to reduce any damages that comes from the negative elements. Analysis must be done to determine the best way to implement this system in order to safeguard young people from behavioural and psychological problems as well as the negative effects of too much dependence on electronic information exchange. At the same time, it is important that policymakers create

progress. This ranges from exam results to them than did boys. Children in the half of these families who could not afford internet packages, were forced to rely on the teaching that were broadcast on television. However, it was discovered that in those situations, girls spent more time than boys doing housework, which frequently fell during the time of telecast.

4. Socioeconomic divide

India is a ranged country, and these differences give rise to a vast variety of cultures and beliefs. As a result, India suffers from significant socioeconomic split, or the separation of classes into high, low, and middle classes, which is a significant disadvantage. Only a third of people receive their education online.

5. No power supply

India is ranked 108th out of 141 nations in the World Bank's 2019 Global Competitiveness Report for the reliability of its electricity supply. There is still an inadequate supply of power in India. Many rural areas still lack facilities for 24 hours electricity supply.

6. Lack of internet connectivity

In India there is still lack of mobile connection and internet facility. Out of the 5,97,618 settled villages in the country, 25,067 villages lack mobile connectivity and internet, the government informed the parliament in the month of February 2022.

4. Online classes do not permit practical learning. Students still require instruction to fully understand what they have studied even when professors can convey the theoretical components, which is most typical in disciplines like science and practical arts.
5. Due to the inadequate network access, conducting live sessions and streaming them for children who stay in rural area of India is not practicable. Even though people in rural areas are learning about new technologies like smartphones, laptops, tabletsand are working hard to afford them, there is still a major problem with the supply of internet networks.

a system that combines both traditional and modern teaching methods, protecting the teachers-student relationship and promoting a digital education system. The problems of digital learning must be solved through assistance and best practise solutions for students to succeed in this learning environment.

References

1. Dr. Puja Ahuja (2015) "The digital revolution and its impact on education", "International Journal ofBusiness Management". "VOL. 2(1),pageno. 1684-1692".
2. Jayaprakash M.G, Dr.vishalkhatri (2020) in their study entitled "Impact of technology and Digitization in Indian education and learning: A critical analysis". "Ilkogretim Online - Elementary Education Online", "Vol19 ,Issue 4, page. 7676-7681"
3. Dr.HimanshuRastogi (2019) in their study entitled " Digitalization of education in India- An analysis" "IJRAR-International Journal of Research and Analytical Reviews**" ,** "VOLUME 6, ISSUE 1 ,page no. 160-167**"**
4. R. Raja , P.C.Nagasubramani (2018) in their study entitled "Impact of modern technology in education", "Journal of Applied and Advanced Research" ," vol3, page no.- S33□S35"
5. Jirmalsingh (2019) in their study entitled "Impact of digitalization on education:opportunities and challenges", "International Journal of Applied Research" , "page no. 92-94"
6. http://ijrar.com/upload_issue/ijrar_issue_20543139.pdf.
7. https://www.softermii.com/blog/the-impact-of-digital-transformation-in-education-sector
8. https://iimskills.com/the-future-of-online-education-in-india/
9. https://timesofindia.indiatimes.com/blogs/voices/impact-of-digital-education-on-students/
10. https://www.jirs.ac.in/blogs/introduction-to-digital-education-and-its-benefits-for-students
11. https://www.raponline.org/blog/indias
12. https://timesofindia.indiatimes.com/india/all-inhabited-villages-in-northeast-to-be-connected-with-4g-network-by-december-2023-kiren-rijiju/articleshow/95377174.cms
13. https://www.dailypioneer.com/2022/columnists/digital-education-for-digital-india.html#:~:text=It%20is%20a%20national%20platform,the%20people%20of%20the%20nation.
14. https://www.launchne.com/wp-content/uploads/2020/09/Hierarchy-of-Digital-Learning-Needs-01.png
15. https://ed.stanford.edu/sites/default/files/news/image/shutterstock_1747360433.jpg

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

An Impact of Digital Initiatives of the Government on Society

Smt. Shaila[1], Dr. Suresha K. P[2]
[1]Research Scholar, Department of Economics, KSAWU Vijayapura
[2]Research Guied, Assistant Professor, Department of Economics, KSAWU Vijayapura.
Corresponding Author- Smt. Shaila
Email: patiilshaila034@gmail.com
DOI-10.5281/zenodo.8035865

Abstract.

The Government of India's main initiative, the Digital India programme, aims to make India into a knowledge-based society and economy. The goal of Digital India is to advance the nation's digital and economic development by ensuring that all residents have access to government services online. To achieve this goal, online infrastructure must be improved along with the efficacy of Internet connectivity. While labour, infrastructure, and investment on the one hand help the manufacturing sector of the economy grow and create jobs, innovation and technical improvement on the other hand drive down costs, raise standards, boost output, and simplify management. India presents a difficulty to the process of growth and development due to its massive population and extensive geographic area. Hence, a platform that allows all citizens of the country to access government services, programmes, and information is required. This platform should also bring together all beneficiaries under one system, including those who live in rural and distant locations. An economy with a population of more than 135 crores can only thrive and soar to new heights when each individual has an equal opportunity to show off their inherit potential and growing personal abilities. The nation requires a mechanism that ensures that the benefits of government-run programmes reach recipients in a transparent manner free from corruption or deals. In order to resolve this issue, On July 1, 2015, Prime Minister Modi unveiled the ambitious "Digital India" initiative with the tagline "Power to Empower" in an effort to bring the nation's people together. By utilising technology to link every individual and provide services in a transparent manner, it is a step towards digitalizing the entire economy.

Keyword: Digital, Government, Online, Development.

Introduction

The Digital India effort is an expanded and revamped version of the e-Governance project, which has been running since the middle of the 1990s. Numerous e-Government initiatives across the nation that involve every department of government have failed to produce the desired outcomes. Thus, the current administration felt that it was necessary to overhaul the e-governance plan's existing infrastructure and include new goals in the new initiative. This plan's adoption would reduce the distance between various government agencies and the common populace. The citizens would receive the services and benefits offered by the government quickly and easily. Additionally, it will guarantee local electronic manufacturing and Indian job creation. PM Narendra Modi therefore envisioned the "Digital India" plan in order to revolutionize the entire notion of governance by making it more transparent and available to the citizen in order to achieve the goal of making India a **"Digital Society" and a "Knowledge Economy".** The Department of Electronics and Information Technology is the organization behind the Digital India programme, although other ministries like the Ministry of Communications and Information Technology, Ministry of Rural Development, Ministry of Human Resource Development, Ministry of Health, and others are also involved.

PM Narendra Modi launched the ambitious Digital India initiative on 1 July 2015 at a ceremony held in New Delhi to celebrate first **Digital India Week**, in the presence of top CEOs from India and abroad. The industry lauded this new initiative as an

important milestone in transforming India's digital infrastructure for the next generation and also as a catalyst for investment in technology sector and in employment generation.

Vision Areas of Digital India

The main vision of Digital India initiative is to **'transform India into a digitally empowered society and knowledge economy'.**

To achieve this vision, the government has marked three Vision Areas, viz

1. Making digital infrastructure as a utility to every citizen.
2. Making Governance and public services on demand.
3. Making citizens digitally empowered.

In The Indian economy has piqued the interest of the world because of the increased rate of development due to industrialization& automation, increasing customer base due to population explosion and increase in ease of trade due to a reduction in regulation & entry barriers. The Indian economy has been divided into 3 major parts, namely, agriculture sector, industry sector and service sector. The Digital India programme is designed in a three components structure these are:

a. Creation of digital infrastructure
b. Digital delivery of government services.
c. Increasing Digital literacy

The Digital India Programme aims at overall and all-inclusive growth of the Indian Economy, be it agriculture, industry (manufacturing) or services. This programme will help in creating employment opportunities in the country so that the GDP and per capita income increases, and the lifestyle of people can be improved. It circulates around three key areas. These are- Developing digital infrastructure, e-governance and digitally empowering the citizens. Some of the facilities provided under this programme are, digital locker, e-mandi, e-education, e-hospitals, e -banking, e-government, e-sign, etc.

Concept of Digital India.

Digital India is a programme to transform India into a digitally empowered society and knowledge economy. The today's digital world where we are living is the result of many innovations and technological advancement which helps to improve the life of all citizens .The tag line of Digital India program is power to empower". Digital India thought is about growth in electronic sector such as service, products; manufacturing and job opportunities etc .and also concentrate on three key areas that is Digital Infrastructure as a Utility to Every Citizen, Governance & Services on Demand and Digital Empowerment of Citizens. First object behind Digital India programme is to provide all services electronically to citizen and spread digital literacy among people. This initiative is marked change in country and

Objective.

1. To understand the concept of Digital India
2. To discuss about the visions of Digital India
3. To understand the pillars and initiatives of Digital India
4. To study the impact of Digital India on the Indian society

Review Of Related Literature

1. Gupta and Arora (2015) studied the impact of digital India project on India's rural sector. The study found that many schemes have been launched in digital India to boost agriculture sector and entrepreneurship development in rural areas. Digital India programme has also set the stage for Empowerment of rural Indian women

2. Singh (2015) began with the basic overview of what Digital India entails and led a discussion of conceptual structure of the program and examined the impact of "Digital India" initiative on the technological sector of India. He concluded that this initiative has to be supplemented with amendments in labor laws of India to make it a successful campaign.

3. Midha (2016) concluded that digital India is a great plan to develop India for knowledge future but its improper implementation due to inaccessibility and inflexibility to requisite can lead to its failure. Though digital India programme is facing number of challenges yet if properly implemented it can make the best future of every citizen. So we Indians should work together to shape the knowledge economy.

Research Methodology

The paper is based on secondary data that have been retrieved from internet, magazines and journals .It is a conceptual paper. The focus is to know more about the concept, its application and the impact on economy. Therefore qualitative data have been used in this paper.

enhances the growth of economy. The digital India initiative brings growth with an image to convert India into a digitally knowledge economy and empowered society which mainly focuses on Digital India.

Major Projects under the Initiative

Digital India comprises of various initiatives under the single programme each targeted to prepare India for becoming a knowledge economy and for bringing good governance to citizens through synchronized and coordinated engagement of the entire Government. Nine projects have been undertaken. These are as follows:

1. **Highways to have broadband services:** Government aims to lay national optical fiber network in all 2.5 lakh panchayats. Broadband for the rural will be laid by December 2016 and broadband for all urban will mandate communication infrastructure in new urban development and buildings. By March 2017, the government aims to provide nationwide information infrastructure.
2. **Easy access to mobile connectivity:** The government is taking steps to ensure that by 2018 all villages are covered through mobile connectivity. The aim is to increase network penetration and cover gaps in all 44,000 villages.
3. **IT Training for Jobs:** This initiative seeks to train 10 million people in towns and villages for IT sector jobs in five years. It also aims to train 0.3 million agents to run viable businesses delivering IT services. Additionally, the project involves training of 0.5 million rural IT workforce in five years and setting up of BPOs in each North-eastern state.
4. **Manufacturing of electronics:** The government is focusing on zero imports of electronics. In order to achieve this, the government aims to put up smart energy meters, micro ATMs, mobile, consumer and medical electronics.
5. **Provide public access to the internet:** The government aims to provide internet services to 2.5 lakh villages which comprises of one in every panchayat by March 2017 and 1.5 lakh post offices in the next two years. These post offices will become Multi-Service centers for the people.
6. **E-Governance:** The government aims to improve processes and delivery of services through e-Governance with UIDAI, payment gateway, EDI and mobile platforms. School certificates, voter ID cards will be provided online. This aims for a faster examination of data.
7. **E-Kranti:** This service aims to deliver electronic services to people which deals with health, education, farmers, Justice, security and financial inclusion.
8. **Global Information:** Hosting data online and engaging social media platforms for governance is the aim of the government. Information is also easily available for the citizens.
9. **My Gov.in** is a website launched by the government for a 2-way communication between citizens and the Government. People can send in their suggestions and comment on various issues raised by the government, like Net neutrality.
10. **Early harvest programs:** Government plans to set up Wi-Fi facilities in all universities across the country. An Email will be made the primary mode of communication. Aadhar Enabled Biometric Attendance System will be deployed in all central government offices where the recording of attendance will be made online.

Is India Digitally Ready

There is no doubt in it. India is ready for this. Immediately with the introduction of this campaign, much organization same forward to lend their hands to achieving India a digitally equipped country. Organizations like BSNL, Reliance Ltd. are coming forward to spread digitalization among rural areas. And over 42000 villages all over India will be having seamless mobile connectivity by 2018. The Internet Saathi initiative aims to cover 4,500 villages over the next 18 months, starting with Gujarat, Rajasthan and Jharkhand. India is aiming to achieve universal digital literacy across the country. The prime importance is to make sure every individual can be able to leverage the potential of Digital India. The focus is at least one person in a household should transform into an e-literate. This can be achieved by BBNL which is planning to connect 2, 50,000 panchayats under the scheme. This wills ensure the digitization and connectivity of local institutions like panchayats offices, schools, other government to offices and libraries etc. India is reforming its government through technology in the name of E-Governance with the advancement of technology and digitalization. Under the e-governance programme, out of 252 schemes planned, 222 services have been provided in short span of time. The nine pillars of Digital

India programme clearly confirms that India as a nation is at its nascent stage. One can

A. Economic impact:

According to analysts, the Digital India plan could boost GDP up to $1 trillion by 2025. It can play key role inmacro economic factors such as GDP growth, employment generation, labor productivity, growth in a number of businesses and revenue leakages for the Government. As per the World Bank report, a 10% increase in mobile and broadband penetration increases the per capita GDP by 0.81% and 1.38% respectively in the developing countries. India is the 2nd largest telecom market in the world with 915 million wireless subscribers and world's 3rd largest Internet market with almost 259 million broadband users. There is still a huge economic opportunity in India as the tale density in rural India is only45% where more than 65% of the population lives. Future growth of telecommunication industry in terms of a number of subscribers is expected to come from rural areas as urban areas are saturated with a tele-density of more than 160%.

B. Social impact:

Social sectors such as education, healthcare, and banking are unable to reach out to thecitizens due to obstructions and limitations such as middleman, illiteracy, ignorance, poverty, lack of funds, information and investments. These challenges have led to an imbalanced growth in the rural and urban areas with marked differences in the economic and social status of the people in these areas. Modern ICT makes it easier for people to obtain access to services and resources. The penetration of mobile devices may be highly useful as a complementary channel to public service delivery apart from the creation of entirely new services which may have an enormous impact on the quality of life of the users and lead to social modernization. The poor literacy rate in India is due to unavailability of physical infrastructure in rural and remote areas. This is where m-Education services can play an important role by reaching remote masses. According to estimates, the digital literacy in India is just 6.5% and the internet penetration is 20.83 out of 100 populations. The Digital India project will be helpful in providing real-time education and partly address the challenge of lack of teachers in the education system through smart and virtual classrooms. Education to farmers, fisher men can be provided through mobile devices. The high speed network can provide the adequate infrastructure for online education platforms like massive open online courses (MOOCs). Mobile and internet banking can improve the financial inclusion in the country and can create a win-win situation for all parties in the value-chain by creating an interoperable ecosystem and revenue sharing business models. Telecom operators get additional revenue streams while the banks can reach new customer groups incurring lowest possible costs. Factors such as a burgeoning population, poor doctor-patient ratio (1:870), high infant mortality rate, increasing life expectancy, fewer quality physicians and a majority of the population living in remote villages, support and justify the need for tele-medicine in the country. M-health can promote innovation and enhance the reach of healthcare services. Digital platforms can help farmers in know-how crop choice, seed variety, context weather, plant protection, cultivation best practices) and market information market prices, market demand, logistics.

C**. Environmental impact:**

The major changes in the technology space will not only brought changes to the economic system but will also contribute to the environmental changes. The next generation technologies will help in lowering the carbon footprint by reducing fuel consumption, waste management, greener workplaces and thus leading to a greener ecosystem. The ICT sector helps in efficient management and usage of scarce and non-renewable resources. Cloud computing technology minimizes carbon emissions by improving mobility and flexibility. The energy consumption can be decreased from 201.8 terawatt hour (TWh) in 2010 to 139.8 TWh in 2020 by higher adoption of cloud data centers causing a 28% reduction in carbon footprint from 2010 levels.

- **Challenges for Digital India**

Few of the challenges faced in the successful implementation of Digital India Programme are

1. Lack of education–Majority of population in the country is still not qualified easily assure that India will be digitally ready in the next three years.

enough to use digital devices and technology. Most of people are not capable of using a simple mobile phone.

2. Lack of infrastructure and required technology–The Digital India campaign needs high quality infrastructure to be implemented efficiently. India still lacks the basic infrastructure required to move digitally ahead. The technological infrastructure and technology required for the campaign is still not available that easily in the country. The conditions are even more inadequate in the rural areas. Further, the servers are overloaded due to pressure work.

3. Financial and technical issues –India is still a developing country. For a plan like this, huge financial resources are required and the country somehow lacks in that area. It requires financial assistance from other sources. Technical issues like appropriate bandwidth, firewalls, filters, anti-virus software's, protection from hackers, buffering are some of the technical issues the country has to face.

4. Attitude of citizens as well as government personnel –For successful implementation of the programme, a wholesome effort is required of both the citizens and the government personnel. But the devil may care attitude is the hindrance in the path. Moreover, the older generation is set in their ways and fined the traditional methods of doing things easy and convenient. Indian political power structure and lack of inter departmental coordination add to the problem.

5. Cyber-crimes and Lack of confidence– Cyber safety is still not given as much importance as it should be given. People find it risky to make transactions online due to safety issues. Cyber laws are not paid that much heed too. Also, most of people still have lack of confidence on machines and prefer hand done things. Inept cyber services are also one of the reasons for this.

6. High costs –The electronic devices and internet services are still by and large very costly for an average Indian citizen. When a lot of people don't have enough money for the basic life's necessities, spending on electronic devices get out of the picture.

7. Training needs –The personnel who are working on this campaign, to transform various government departments from man managed to machine managed, require proper training to do that effectively and efficiently. It's a tedious task to train so many people of different calibers and interest into one common discipline. Most of the population lack the basic technical qualification required for the job

Conclution

The introduction of the notion of "Digital India" is a first step towards a radical and comprehensive transformation of India's ways of doing things so that its people be both economically prosperous and digitally empowered. The Digital India Project will aid in the evolution of employment opportunities and expand India's economic base. It is promoting digital literacy and enhancing technological literacy in both urban and rural locations. If this effort is continued in a reliable manner, it will unquestionably come before India becomes a digital nation. And the progress made will assist India in moving from being a developing nation to one that is developed.

References

Articals.

1. Midha, R. (2016). Digital India: Barriers and Remedies. International Conference on Recent Innovations in Sciences, Management, Education and Technology, 256-261
2. Gupta, & Arora, (2015). Digital India: A Roadmap for the Development of Rural India. International Journal of Business Management, 2(2), 1333-1342.
3. Bindu Dua (2018). Digital India: Challenges and Suggestion for Implementation, vol- 8, Issues-1, ISSN-2249-894x
4. Manikanta K. Digital India Programme and Impact of Digitalization in Improving Quality of Life of Citizens, ISBN; 978-5136-2964-3.
5. Shekar Srivastava (2017). Digital India Major Initiatives and Their Impact: A Critical Analysis, vol-8, Issue-3.ISSN-2349-23177
6. Jyoti Sharma (2016). Digital India and its Impact on the Socity, International Journal of Research in Humanities and Social Science, vol-4, Issue- 4, ISSN- 2347-5404.

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

The Role of E- Governance in Karnataka Administration

Rangaswamaiah .H
Research Scholar (Reg No: 20PS016), Department of Studies and Research in Political Science , Tumkur University, Tumakuru
Corresponding Author- Rangaswamaiah .H
Email: rangaanju1984@gmail.com
DOI-10.5281/zenodo.8035881

Abstract:

This paper examines the role of e-governance in the administration of Karnataka. The delivery of government services is being transformed, transparency and accountability are being increased, corruption is being decreased, and government procedures are becoming more efficient thanks to e-governance. The Bhoomi, Sakala, Karnataka Mobile One, e-procurement, e-swathu and Karnataka state wide area network (KSWAN) are just a few examples of the state's e-governance initiatives that are mentioned in the study, which also examines how they affect citizens' access to government services.This study is carried out by using of both primary data and secondary data. Researcher adopted survey method to conduct this research. Formulated and distributed closed ended structured questionnaires to 100 respondents by employing convenient sampling technique. Researcher adopted Percentage, Frequencies, and table to analyse the data. Secondary data sources used for the study such as articles, websites, research papers, books and other resources. The major findings of the study are: Majority of the respondents (51%) said E-governance refers to the use of technology to improve government services.47% of the respondents understood that Bhoomi, Sakala, and KSWAN are the major e-governance initiatives undertaken by the Karnataka government.49% of the respondents believed that Lack of Digital Infrastructure is the major challenge faced in implementing E-Governance initiatives in Karnataka Administration and 67% of the respondents thought that Server Problem is the major issue associated with using technology in governance.

According to the researcher, there are still obstacles to be solved, especially in rural areas with restricted access to technology and internet connectivity. The government must take action to increase access to e-governance services in these regions in order to ensure inclusion and accessibility. More servers should be installed by the government so that residents can benefit from e-governance. In order to secure the data of citizens, privacy and security issues must also be addressed. In order to ensure that citizens receive the greatest services possible, the government must continue to invest in technology and innovation. E-governance has the potential to bring about significant changes in the way Karnataka is run.

Keywords: Role, E- Governance, Karnataka, Administration etc.

Introduction:

In order to better and improve the delivery of government services and information to residents, businesses, and other government organisations, e-governance is the use of information and communication technologies (ICT). Government efficiency, accountability, and transparency can all be enhanced via e-governance. Citizens can access government services online, pay taxes, renew licences, and take part in public consultations through e-governance. Governments can utilise e-governance to monitor and assess programmes, collect data and feedback, and have real-time conversations with residents. As more individuals are online and expect to interact with government services online, e-governance has grown in significance in the digital age. However, in order to ensure that all citizens have equal access to government services and information, e-governance must also address concerns of digital inclusion and accessibility.

The state of Karnataka is in the southwest of India, and Bengaluru serves as its capital. Karnataka's government is structured into three branches: the

legislative, executive, and judicial branches. The Chief Minister, who serves as the head of state and is in charge of running the government on a day-to-day basis, leads the executive branch. The constitutional head of the state and person in charge of overall administration is the Governor, who is chosen by the President of India. The Karnataka Legislative Assembly, which has 224 members, is the unicameral body that makes up the state legislature. The High Court of Karnataka, which has its main office in Bengaluru, as well as inferior district and lower courts make up the Karnataka judiciary. The state administration is split up into numerous departments, each of which is led by a secretary who answers to the chief secretary, who is in charge of the state's administrative infrastructure. Agriculture, education, health and family welfare, energy, industries and commerce, information technology, transportation, and urban development are some of the departments included.

In Karnataka, e-governance has become a crucial tool for changing how public services are provided. The Karnataka State Portal, which offers various services online, is one of the state's notable forays into e-governance. The Karnataka state government has launched a number of projects to use technology to increase the effectiveness and transparency of government services. Government records have been digitised and made online by e-governance, which has enabled citizens access government services with less time and effort. Additionally, it has aided in the distribution of real-time data and boosted the transparency of governmental procedures. The state government has been actively implementing numerous projects and programmes to increase the usability, effectiveness, and transparency of government services.Some of the major initiatives undertaken by the Karnataka government in the field of e-governance are:

1. Bhoomi
2. Sakala
3. Karnataka Mobile One
4. eProcurement
5. e-Swathu
6. Karnataka State Wide Area Network (KSWAN)
7. Digital literacy programs
8. Cloud-based services
9. Online grievance redressal and many more.

Scope of the Study:

Government of Karnataka has undertaken various initiatives with respect to e-governance. This study is focused on only major initiatives such as Bhoomi, Sakala, Karnataka Mobile One, e-procurement, e-swathu and Karnataka state wide area network (KSWAN).

Objective of the Study:

To examines the role of e-governance in the administration of Karnataka.

Research Methodology;

This study is carried out by using of both primary data and secondary data. Researcher adopted survey method to conduct this research. Formulated and distributed closed ended structured questionnaires to 100 respondents by employing convenient sampling technique. Researcher adopted Percentage, Frequencies, and table to analyse the data. Secondary data sources used for the study such as articles, websites, research papers, books and other resources.

Data Analysis:

Table No. 1: What is e-governance, and how has it transformed the administrative processes in Karnataka?

OPTIONS	FREQUENCY	PERCENTAGE
a) E-governance refers to the use of technology to improve government services	51	51
b) E-governance refers to the without use of technology to improve government services	12	12
c) E-governance refers to improve government services	27	27
d) E-governance refers to the use of technology in manufacturingcompanies	10	10
TOTAL	**100**	**100%**

The above data depicts about e-governance. Majority of the respondents (51%) said E-governance refers to the use of technology to improve government services, 27% of the respondents thought that E-governance refers to improve government services, 12%

of the respondents believed that E-governance refers to the without use of technology to improve government services and remaining 10% of the respondents opined that E-governance refers to the use of technology in manufacturingcompanies.

Table No. 2: What are some of the major e-governance initiatives undertaken by the Karnataka government?

OPTIONS	FREQUENCY	PERCENTAGE
a) Bhoomi, Sakala, and KSWAN	47	47
b) Bhoomi,Sakala, and SpaceX	19	19
c) Bhoomi, KSWAN, and Google	21	21
d) Bhoomi, Karnataka Mobile One, and Instagram	13	13
TOTAL	**100**	**100%**

The above table shows about the major e-governance initiatives undertaken by the Karnataka government. Majority of the respondents (47%) said that Bhoomi, Sakala, and KSWAN are the major e-governance initiatives undertaken by the Karnataka government, 27% of the respondents thought that Bhoomi, KSWAN, and Google, 19% of the respondents believed that Bhoomi,Sakala, and SpaceX and remaining 13% of the respondents opined that Bhoomi, Karnataka Mobile One, and Instagram.

Table No. 3: How has Bhoomi, the online land records management system, impacted the land transaction process in Karnataka?

OPTIONS	FREQUENCY	PERCENTAGE
a) It has increased corruption and manual errors	12	12
b) It has slowed down the land transaction process	18	18
c) It has reduced corruption, minimized manual errors, and increased the speed of land transactions	53	53
d) It has increased the cost of land transactions	17	17
TOTAL	**100**	**100%**

The above table shows about the Bhoomi, the online land records management system, impacted the land transaction process in Karnataka. Majority of the respondents (53%) said that It has reduced corruption, minimized manual errors, and increased the speed of land transactions, 18% of the respondents thought that It has slowed down the land transaction process, 17% of the respondents believed that It has increased the cost of land transactions and remaining 12% of the respondents opined that It has increased corruption and manual errors.

Table No. 4: What is Sakala, and how has it ensured time-bound delivery of government services to citizens in Karnataka?

OPTIONS	FREQUENCY	PERCENTAGE
a) Sakala is a program that provides free food to citizens	21	21 %
b) Sakala is a program that provides free healthcare to citizens	09	09 %
c) Sakala is a citizen-centric initiative that ensures time-bound delivery of various government services	59	59%
d) Sakala is a program that provides free education to citizens	11	11%
TOTAL	**100**	**100%**

The above data depicts about Sakala. Majority of the respondents (59%) said Sakala is a citizen-centric initiative that ensures time-bound delivery of various government services, 21% of the respondents thought that Sakala is a program that provides free food to citizens, 11% of the respondents believed that Sakala is a program that provides free education to citizens and remaining 9% of the respondents opined that Sakala is a program that provides free healthcare to citizens

.

Table No. 5: How has Karnataka Mobile One improved access to government services for citizens through mobile phones?

OPTIONS	FREQUENCY	PERCENTAGE
a) Karnataka Mobile One provides free smartphones to citizens	06	06 %
b) Karnataka Mobile One enables citizens to access government services through mobile phones	62	62 %
c) Karnataka Mobile One enables citizens to access private services through mobile phones	23	23 %
d) Karnataka Mobile One provides free mobile phone subscriptions to citizens	09	09 %
TOTAL	**100**	**100%**

The above data depicts about Karnataka Mobile One. Majority of the respondents (62%) said Karnataka Mobile One enables citizens to access government services through mobile phones, 23% of the respondents thought that Karnataka Mobile One enables citizens toaccess private services through mobile phones, 9% of the respondents believed that Karnataka Mobile One provides free mobile phone subscriptions to citizens and remaining 6% of the respondents opined that Karnataka Mobile One provides free smartphones to citizens.

Table No. 6: What is eProcurement, and how has it streamlined the procurement process in Karnataka?

OPTIONS	FREQUENCY	PERCENTAGE
a) It is an online platform for procurement of goods and services by government departments	57	57 %
b) It is an online platform for the sale of illegal goods	13	13 %
c) It is an online platform for procurement of goods and services by private companies	16	16 %
d) It is an online platform for the sale of stolen goods	14	14 %
TOTAL	**100**	**100%**

The above data depicts about eProcurement. Majority of the respondents (57%) said eProcurement is an online platform for procurement of goods and services by government departments, 16% of the respondents thought that it is an online platform for procurement of goods and services by private companies, 14% of the respondents believed that it is an online platform for the sale of stolen goods and remaining 6% of the respondents opined that it is an online platform for the sale of illegal goods.

Table No. 7: How has e-Swathu, the online property tax collection and management system, improved revenue collection for the government?

OPTIONS	FREQUENCY	PERCENTAGE
a) It has made property tax collection more complicated	17	17 %
b) Ithas increased manual errors in property tax collection	11	11 %
c) Ithas simplified the property tax collection process, reduced errors, and increased revenue collection for the government	59	59 %
d) Ithas reduced revenue collection for the government	13	13 %
TOTAL	**100**	**100%**

The above data depicts about e-Swathu. Majority of the respondents (59%) said that e-Swathu has simplified the property tax collection process, reduced errors, and increased revenue collection for the government, 17% of the respondents thought that It has made property tax collection more complicated, 13% of the respondents believed that It has reduced revenue collection for the government and remaining 11% of the respondents opined that It has increased manual errors in property tax collection.

Table No. 8: What is KSWAN, and how has it improved communication and data exchange between government offices in Karnataka?

OPTIONS	FREQUENCY	PERCENTAGE
a) It is a network that connects all governmentoffices in Karnataka	63	63%
b) It is a network that connects all private businesses in Karnataka	27	27%
c) Itis a network that connects all schools and colleges in Karnataka	03	03%
d) It is a network that connects all hospitals and healthcare centers in Karnataka	07	07%
TOTAL	**100**	**100%**

The above data depicts about KSWAN. Majority of the respondents (63%) said that KSWAN is a network that connects all governmentoffices in Karnataka, 27% of the respondents thought that It is a network that connects all private businesses in Karnataka, 7% of the respondents believed that It is a network that connects all hospitals and healthcare centers in Karnataka and remaining 3% of the respondents opined that It is a network that connects all schools and colleges in Karnataka.

Table No. 9: What is the major challenge faced in implementing E-Governance initiatives in Karnataka Administration?

OPTIONS	FREQUENCY	PERCENTAGE
Lack Of Digital Infrastructure	49	49 %
Resistance To Change From The Bureaucracy	11	11%
Inadequate Funding	28	28%
Insufficient Awareness Among Citizens	12	12%
TOTAL	**100**	**100%**

The above table shows about major challenge faced in implementing E-Governance initiatives in Karnataka Administration. Majority of the respondents (49%) said that Lack Of Digital Infrastructure is the major challenge faced in implementing E-Governance initiatives in Karnataka Administration, followed by 28% of the respondents thought that Inadequate Funding, 12% of the respondents believed that Insufficient Awareness Among Citizens and remaining 11% of the respondents opined that Resistance To Change From The Bureaucracy.

Table No. 10: Major issue associated with using technology in governance include a

OPTIONS	FREQUENCY	PERCENTAGE
Server Problem	67	67 %
System Failures	23	23%
Lack Of Standardization	09	09%
Concerns About Privacy And Data Protection	11	11%
TOTAL	**100**	**100%**

The above table shows about Major issue associated with using technology in governance. Majority of the respondents (67%) said that Server Problem is the major issue associated with using technology in governance, followed by 23% of the respondents thought that System Failures, 11% of the respondents believed that Concerns About Privacy and Data Protection and remaining 9% of the respondents opined that Lack of Standardization.

Findings of the Study:

1. It is found that 51% of the respondents said E-governance refers to the use of technology to improve government services.
2. Majority of the respondents (47%) thought that Bhoomi, Sakala, and KSWAN are the major e-governance initiatives undertaken by the Karnataka government.
3. Majority of the respondents (53%) believed that Bhoomi has reduced corruption, minimized manual errors, and increased the speed of land transactions.
4. Majority of the respondents (59%) understood that Sakala is a citizen-centric initiative that ensures time-bound delivery of various government services.
5. Majority of the respondents (62%) stated that Karnataka Mobile One enables

citizens to access government services through mobile phones.

6. Majority of the respondents (57%) said eProcurement is an online platform for procurement of goods and services by government departments.
7. Majority of the respondents (59%) said that e-Swathu has simplified the property tax collection process, reduced errors, and increased revenue collection for the government.
8. Majority of the respondents (63%) said that KSWAN is a network that connects all governmentoffices in Karnataka.
9. Majority of the respondents (49%) said that Lack of Digital Infrastructure is the major challenge faced in implementing E-Governance initiatives in Karnataka Administration.
10. Majority of the respondents (67%) said that Server Problem is the major issue associated with using technology in governance.

Conclusion:

The way government services are provided in Karnataka has changed significantly as a result of e-governance. It has increased efficiency in government procedures, decreased corruption, and improved transparency and accountability. Initiatives in e-governance have also made it possible for citizens to simply and swiftly access government services, increasing their overall experience with the government.

According to the researcher, there are still obstacles to be solved, especially in rural areas with restricted access to technology and internet connectivity. The government must take action to increase access to e-governance services in these regions in order to ensure inclusion and accessibility. More servers should be installed by the government so that residents can benefit from e-governance. In order to secure the data of citizens, privacy and security issues must also be addressed. In order to ensure that citizens receive the greatest services possible, the government must continue to invest in technology and innovation. E-governance has the potential to bring about significant changes in the way Karnataka is run.

References:

1. Karnataka State Wide Area Network (KSWAN). (2021). Retrieved April 30, 2021, from https://kswan.gov.in/
2. Manjunatha, M. R. (2015). Impact of e-governance initiatives on service delivery in Karnataka state. International Journal of Advanced Research in Computer Science and Software Engineering, 5(10), 975-979.
3. Pujari, P. (2019). E-Governance in Karnataka: An Overview of Bhoomi Project. IOSR Journal of Humanities and Social Science, 24(7), 16-20.
4. Reddy, R. P., & Rani, M. P. (2019). E-governance initiatives in Karnataka: A study of citizen participation in mobile governance services. Journal of Social Sciences and Humanities Research, 7(2), 27-34.
5. Singh, V., & Huda, M. M. (2017). Adoption of mobile governance in Karnataka: An analysis of factors influencing citizen satisfaction. Journal of Electronic Governance, 10(3), 221-234.

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Legal Safety for Transgender Legal Provisions for the Safety of Transgender

Dr. Bhagyashree H.Dodamani[1], Prof. Laxmidevi Y[2]
[1]Assistant Professor , Women's Studies CentreK.S.A.Women's University, Vijayapura
[2]Professor, Dept.of Women's Studies, K.S.A.Women's University, Vijayapura
Corresponding Author- Dr. Bhagyashree H.Dodamani
DOI-10.5281/zenodo.8035888

Introduction:

India is one of the most religiously and traditionally diverse countries in the world. It really has a long history of its own that reflects the customs and practices of the time, and it is fascinating that these customs and traditions are still relevant in this ultra-modern century. The actual perception of Hijras and other Transgender in India is not new; they have also been identified in our ancient history. The Transgender community includes Hijras, Eunuchs, Kothis, Aravans, Jogappas, Shiv-shaktis, etc. and as a group they have a strong literal presence in our country in Hindu traditions and other religious texts. An ancient Hindu text called the Kama Shastra, where they are referred to as "tritiyapakris" or the third sex, was an integral part of Vedic and Puranic literature, it classifies men who question other men as "third nature". The word videlicet "scarce" is often used to express a person's lack of reproductive capacity.

Every transgender community around the world has dealt with questions like What does it feel like to be different? Being different in both physical and brain form, or called sexual youth, there are thousands of questions about the fact of being different, although the answers are still unclear and uncertain. Transgender community considers as a Sexual Minorities. Society is taught to fear, ignore and/or discriminate against them. They are mistakenly considered a "western import" and a recent "phenomenon", although there is abundant anthropological and documentary evidence of the existence of different types of gender and sexuality since ancient times.

Transgender definition, meaning:

An adjective used to describe a person whose gender identity is incongruent with (or doesn't "match") the natural coitus they were assigned at birth. "Transgender" serves a marquee term to relate to the full range and diversity of individualities within transgender communities because it's presently the most extensively used and honored term. Transgender Men and Boys People who identify as male but were born female. Also performed sometimes as trans men.

Transgender women and girls People who identify as female but were defined as male at birth. It sometimes happens to trans women as well.

According to the law, a transgender person is a person whose gender does not match the gender assigned to them at birth.

Transgender in India:

In India, transgender people are recognized more as a "third gender" or a "second" gender. They have the same status as men or women. They also have the same rights, including the right to exercise Fundamental rights under the Constitution of India. In 2014, the Supreme Court officially declared "Transgender" as the "third gender" in India.(NALSA, 2014). Census of India never respected the third gender ie. Transgender people while collecting fabulous data. However, in 2011, information was collected from transgender people about their work, information and property details. In India, the total number of transgender people is around 4.88 thousand people as per the 2011 story. Transgender information is boxed "male" in the basic data published by the Census Bureau. Particular information about transsexuals has been removed from it for educational purposes.

Sl.No	State	Transgender	Child (0-6)	SC	ST	Literacy
	India	487,803	54,854	78,811	33,293	56.07%
1	Uttar Pradesh	137,465	18,734	26,404	639	55.80%
2	Andra Pradesh	43,769	4,082	6,226	3,225	53.33%
3	Maharashtra	40,891	4,101	4,691	3,529	67.57%
4	Bihar	40,827	5,971	6,295	506	44.35%
5	West Bengal	30,349	2,376	6,474	1,474	58.83%
6	Madhya Pradesh	29,597	3,409	4,361	5,260	53.01%
7	Tamil Nadu	22,364	1,289	4,203	180	57.78%
8	Orissa	20,332	2,125	3,236	4,553	54.35%
9	Karnataka	20,266	1,771	3,275	1,324	58.82%
10	Rajasthan	16,517	2,012	2,961	1,805	48.34%
11	Jharkhand	13,463	1,593	1,499	3,735	47.58%
12	Gujarat	11,544	1,028	664	1,238	62.82%
13	Assam	11,374	1,348	774	1,223	53.69%
14	Punjab	10,243	813	3,055	0	59.75%
15	Haryana	8,422	1,107	1,456	0	62.11%
16	Chhattisgarh	6,591	706	742	1,963	51.35%
17	Uttarakhand	4,555	512	731	95	62.65%
18	Delhi	4,213	311	490	0	62.99%
19	Jammu and Kashmir	4,137	487	207	385	49.29%
20	Kerala	3,902	295	337	51	84.61%
21	Himachal Pradesh	2,051	154	433	118	62.10%
22	Manipur	1,343	177	40	378	67.50%
23	Tripura	833	66	172	181	71.19%
24	Meghalaya	627	134	3	540	57.40%
25	Arunachal Pradesh	495	64	0	311	52.20%
26	Goa	398	34	9	33	73.90%
27	Nagaland	398	63	0	335	70.75%
28	Puducherry	252	16	40	0	60.59%
29	Mizoram	166	26	1	146	87.14%
30	Chandigarh	142	16	22	0	72.22%
31	Sikkim	126	14	9	37	65.18%
32	Daman and Diu	59	10	1	2	75.51%
33	Andaman and Nicobar Islands	47	5	0	3	73.81%
34	Dadra and Nagar Haveli	43	5	0	22	73.68%
35	Lakshadweep	2	0	0	2	50.00%

Source: Census of India - 2011

Important Provisions for protecting Transgender Rights:

The court ruled that all transgender persons have the right to equality in Article 14 (equality): No one can deny any "personal" equality before the law or equal protection of the law. The use of the term “person” indicates that no boundaries are drawn based on sexual intercourse or gender identity. “Transgender persons” must not be subjected to illegal treatment in educational institutions or during work. They also have the right to equal health services and the right to use public property or the right to move freely within the country.

Article 15 (non-discrimination): Prohibits the establishment of any limits based on race, religion, gender or sexual orientation or otherwise. This means that restricting or mistreating transgender people violates their fundamental rights. The court ruled that transgender people are allowed to apply to universities. The decision is significant because it marked the role of the courts in freezing and adapting special accommodations to include transgender

people in public universities and the admissions process where no one lives.

Article 16 (equality in public employment): Its composition deals with the equality of jobs in the field of public work. The term "equal discovery" is very private in nature and has been given various interpretations by colorful courts. However, in all definitions, it is clear that this concept does not mean only removal of demarcation, but imposes an obligation on the state to create openings for the weaker or backward part of society. Article 19(1)(a) (right to freedom of expression): This right supports the freedom of expression of every citizen. This includes the freedom to express one's gender identity intimately.

Article 21, which deals with the protection of life and liberty, states that no one shall be deprived of life or liberty except by law. This right requires that every person, including bisexuals, has the right to life and special liberty. A bisexual citizen of India should have full right to secure his life and special liberty. The Union of India (2016) opined that the decriminalization of Section 377 of the IPC entitles LGBTQ persons in India to all indigenous rights, including the freedoms protected by the Constitution of India.

Legal safety for transgender : According to the Transgender Persons (Protection of Rights) Rules, 2020, the central and state governments can classify them as 'Other Backward Classes' for direct reservation.

• **Transgender People (Protection of Rights) Act, 2019** and Rules This Act was passed in 2020 and gives several rights to Transgender people. The rules complement the law.

• **SC ST (Prevention of Atrocities) Act, 1989, i**f a person belongs to Scheduled Caste or Scheduled Tribe community, this Act protects him from targeting property/traditional land boundaries.

Karnataka State Policy on Transgenders - 2017

In 2017, the Karnataka Government drafted and published a detailed Karnataka State Bisexual Policy. The policy recognizes the decision of the Supreme Court NALSA. The Union of India recognizes the structural constraints that Transgender persons face and the lack of recognition of their rights in various criminal and civil laws. The ideal of this policy is to empower Transgender people and protect their parental rights. It encourages all government agencies to include gender development in their programs and plans. The practice covers the areas of health, education, housing and employment etc. listed in the appendices. The practice has a wide compass and includes colorful bisexual groups of people, ie. Transgender men and women, Jogappas, jogtas, hijras, kothis. It explains that the term "Transgender" should be preferred to "third sex".

The policy lists laws and regulations that require changes to include transgender people. This includes Indian Penal Code Section 375, Juvenile Justice Act, Workplace Discrimination Acts etc. It also states that police departments must specifically record data and statistics on crimes against transgender people. Importantly, the policy mentions that the existing legal aid agency provides legal aid to transgender people who have been harassed and should take steps to provide free legal aid.

Conclusion:

The Constitution has provided legal security for the protection of Transgender. But need to create an awareness regarding their rights and related acts. Provide a helpline and legal aid. Expand sexual assault laws and organize regular mentoring training for transgender activists. So they do not hesitate to understand legal provisions, comfortably. To ensure that all transgender people know the Supreme Court's decision. Organizes youth and public awareness workshops on the rights and choices of transgender people through governmental and non-governmental organizations. Finally, treat them like normal people.

References:

1. www.teachingtransgender.com
2. https://en.wikipedia.org/wiki/Navtej_Singh_Johar_v._Union_of_India
3. https://translaw.clpr.org.in/reports-and-policies/karnataka-state-policy-on-transgenders-2017/
4. Jogappa, Gender, Identity and the politics of exclusions, Aneka Bangalore, 2014
5. Three Journeys, Cameos of the Jogappa Community in Karnataka, Aneka Bangalore, 2014

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Adoption of Technology in Online Food Delivery Service-A Case of Zomato

Priyanka R. Banasode[1], Prof. S.B. Kamashetty[2]
[1]Research Scholar, Dept. Of PG Studies and Research in Management,Karnataka State Akkamahadevi Women's University, Vijayapura .
[2]Chairman, Dept. Of PG Studies and Research in Management, Karnataka State Akkamahadevi Women's University, Vijayapura.
Corresponding Author- Priyanka R. Banasode
Email- drpriyanka07.14@gmail.com
DOI-10.5281/zenodo.8035945

Abstract

The recent development of the internet has boosted the extension of online food delivery services by enabling people to search, compare and conveniently access these services. However, prior research papers has mostly examined about all the online food delivery services ,procedures and perception of customers, a very few researchers have addressed adoption of technology in OFD applications. This study focuses on the conceptual framework of adoption of technology in OFD : a case study of Zomato . the main objective of this study is to concentrate on the technical assistance to support Zomato. Never have a bad meal the tagline of zomato , currently the app just focuses on food and also playing as a bridge between the restaurants and customers. This study concludes with online food delivery is the solution of quick and fast delivery ,non-healthy but still accepted that can be help to this modern era to save the time by one click through the technology .

Key Words: Technology, Online food delivery. Zomato, Internet, Mobile Applications.

Introduction:

In the year 2008 , one day Deepinder Goyal and Pankaj Chaddah were waiting in the line for lunch in the cafeteria with their colleagues' , they both observed the huge and lengthy line and started thinking how much time would be saved if customers could order their food online rather than waiting in line. They posted few pictures of the cafeteria's menu on the business website , as a result soon many workers began placing online orders rather than visiting to the cafeteria directly. Before it was Foodiebay, now it is called Zomato.(Patamsetty,2022) The food delivery battle continues with adopting new technologies and making this service automated and efficient. The advancement of technology and easy availability of the internet and smartphones coverd the online food ordering services. (Rusha,Pooja, 2022). Zomato is one tale that every Indian businessmen or entrepreneur would like to imitate . (Prashant Raman ,2018) . The dramatic transformation in the field of technology have transformed the landscape of our lives in a relatively short amount of time almost everyone fully engage with digital devices such as smartphones, tablets, laptops etc. Infact the intensities of our daily lives are enough to remind anyone of the power & purposiveness of digital technology in Modern era.

Company Overview:

Zomato , was founded by Deepinder Goyal and Pankaj Chaddah in 2008 and expanded its business in 24 countries and even market leader in 18 countries. 14 lacs restaurants listed under zomato in 10,000 cities. More than 5000 people working under zomato with the total revenue of 4687 crore i.e. 590US$ (million) .

Review of Literature:

1. Nidhi Yadav, Sonu Goyal (2022): This study focuses on how the CEO of Zomato faced problems and challenges during the period of covid-19 Pandemic. The young founder Deepinder Goyal continuously feeling dissatisfaction amid its hotels/ restaurant partners who have been beat hard by pandemic and struggling for survival. The study concludes with how Deepinder Goyal the founder of zomato finds his new way to grab the entire market and its growth with gaining the

same trust & loyalty from his restaurant partners.

2. J.Sparta, Shahad , Apoorva (2019) : This study focuses on the marketing strategy and operations on zomato and also concentrated on habituation of web-based business. The study concludes that zomato is facing challenges like infrastructural issues and even PESTL i.e. Political, Economical, Societal, Technological and Legal aspects. Which result in receiving bad complaints from various customers like bad smelling, spoiled food, bad taste etc. It is badly affecting on customers loyalty. customers are quite disappointed on zomato and might be discontinue to order food through zomoto .

Research Methodology:

Applications, videos, company websites, articles, newspapers .

Objectives :

1. To study the methods of adoption of technology towards Online Food Delivery application.
2. To study the Technical assistance to support Zomato.

About Zomato and how it works :

Zomato worked on its technology, it creates trend and launched its app for smartphones. The zomato is playing as a aggregator between restaurants and the customers. Aggregator is a business model where it is consider as platforms in the form of application which is being marketed to the customers through marketing ways and then customers get aware about it . they come on its platform on its application and use the application called aggregator . it brings the customers as well as the businesses to its platforms.

These platforms demands 2 ways :

1. By charging commission with the restaurants.
3. Ashok Panigrahi (2019): This study focuses on how the aggregators i.e. online food delivery services like , Zomato use all the marketing strategies such as, products, offers, discounts, to its customers to increase the revenue and maintain the brand in the international platform.
4. Anuj Kapoor, Madhu (2018): This study focuses on how mobile app attributes on online food aggregators will influence the buying decision of consumers. The data were collected from 350 respondents. The collected data were used for mix method design. The result of the study is to identify the most important mobile app attributes while choosing a particular online food aggregator in India.

2. By charging delivery fee to the customers.

- These online food delivery apps normally charges a nominal delivery fee every order below.
- The 2nd part is these apps will collect the commission from restaurants/hotels serving as delivery partners.

Delivery charges are nominal charges between 10-20 rupees if the order is less than 250 rupees . zomato often increases the delivery charges during the peak hours, specially occasions, rains and mid night delivery. The customers love placing small orders & zomato gets order delivery charges. So its clear that win-win situation for both.

Adoption of Technology :

Big data , Artificial Intelligence , Machine learning , Data science these are playing a pivotal role in online food delivery services . using all these technical assistance, zomato making its work more automated and efficient and putting great effort to provide accurate results to the customers by constantly thinking innovative ideas through the help of AI.

1. Menu Digitalization :

Hard copies of restaurants are becoming old school in this modern era replacing these with the digital menu will help to the people around the world. The digitized version of menu available to customers via QR codes. The customers can scan the QR codes from their respective tables via their smartphone camera.(Shoocal) Menu digitization system can extract text from images of menus.i.e.

- Extracting raw text from the menus with Amazon Textract : This is used to accurately extract all the text in the menu image. This process is called as OCR (Optical Character Recognition).
- Using Amazon Sage Maker to build a menu structure detector : this helps to group the detections from Amazon Textract by menu engine to distinguish between entrres, desserts, beverages and so on . it all includes Image shape, label width , name of the food etc. (Chiranjeev, Ang, Ryan, vinayak. 2020)

2. Predicting Food Preparation Time: What happens once an order is placed ?

When you order the food online through zomato, zomato will show you the estimated time that too ideally 25-30 minutes. Through the deep learning model zomato will predict the quantity, types of dishes and behaviour of restaurants .after collecting the data from the restaurants kitchen it will help in the overall process of completion of an order and show you the tentative time that you are going to receive the food .

3. Data –Science : if you order something from zomato , the zomato will record your tastes, preferences and frequently purchase of items are analysed and the money you spend on your meal is recorded . whenever you are looking for something new to eat , the restaurants throws the recommendations based on popular restaurants you are looking for, your spending capacity on zomato etc. (Aman K,2022)
4. Enhancing Road Detection : Zomato help to the delivery partners to show the best root by using Artificial Intelligence model, that help to reconstruct the existing maps. Through the help of this technology delivery partners can go easily and meet the short cut roots so that they can deliver the meal faster.

Advantages of using zomato via internet :

1. Out of 5, 3% of the customers are happy with the growing technology all over the world.
2. Most of the i.e, 50% of Indian populations are under the age of 25 & 65% are below the age of 35 years using smartphones and also aware about zomato application and happy with growing technology.
3. In most of the cities ,smartphone literacy has increased over the few years, that too with cheaper access to the internet.
4. Next to the grocery items ,food delivery proved to be a big opportunity for Indian e-commerce companies.
5. Through the digitalization you can get your food at your doorstep by single click.
6. Majority 3% of the customers are happy with the aggregators i.e. zomato because of the easy availability of the food at your place, easy accessibility, and even save the customers time through the technology.
7. OFD aggregators like zomato is helping the Indian people those who are double – income earners in families. More women became earning members of their families and most of the time they spend their

time on their work it result in growing insist for speedy access to food items especially cooked food at reasonable price.

8. It is helping job holders, bachelors, and the people who doesn't know cooking fully depend on this OFD and its one way helping them to run their job smoothly.
9. Zomato application helping to all the users with the help of technology and making online order quick & easy , throwing offers , user friendly interface, making budget friendly, customer care, live tracking, etc.

Conclusion:

Online food delivery in India comprising of aggregators and internet kitchen showed a spectacular growth in todays modern era. The food sector is using the technology and creating the digital platform to the customers to order food online. This study concludes that zomato is playing a pivotal role in India , non-healthy & still accepted by many people and making more digitized , user friendly and imparting digital services using Artificial Intelligence, Big data, Data science and Machine languages to help customers to use the application effectively and efficiently.

Reference :

1. Prashat Raman ,2018 Zomato: A shining armour in the foodtech sector. Journal of Information Technology case and application research , volume 20 . issue 3-4.
2. Nidhi Yadav, Sonu Goyal ,2022 , Regaining partner trust in the food delivery business : a case of zomato.
3. Jelita Sparta, Shahad Alsumait, Apoorva Joshi, 2019, Marketing Habituation and process study of online Food Industry (A Study case: Zomato). ejournal.aibpmjournals.com. Journal of the community Development in Asia.
4. Anuj Pal Kapoor, Madhu Vij ,2018. Technology at the dinner table : ordering food online through mobile apps. Journal of Retailing and Consumer Services, Volume 43.
5. N. Thamaraiselvan, G.R.Jayadevan, K.S.Chandrasekar,2019,International Journal of Recent Technology and Engineering. ISSN: 2277-3878, Volume-8 , Issue-256
6. https://zomato.com
7. https://content.tecgig.com
8. https://blog.zomato.com
9. https://community.zomato.com
10. publicissapient.com
11. aws.amazon.com
12. youtube videos, journals, news papers, Journals etc.

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Impact of Digitalisation on the Indian Stock Market

Ms. Anusha S Sangondimath[1], Prof. S. B Kamashetty[2]
[1]Research Scholar, Dept of PG Studies and Research in Management, Karnataka State Akka Mahadevi Women's University, Vijayapura, Karnataka
[2]Professor, Department of Management, Karnataka State Akka Mahadevi Women's University, Vijayapura, Karnataka
Corresponding Author- Ms. Anusha S Sangondimath
Email: anushasangondimath3@gmail.com
DOI-10.5281/zenodo.8036033

Abstract:

Digitalisation is bringinga significant change in all domains. The onset of the Digitalization of the Indian Stock Market can be identified through NSE's NEAT (National Exchange for Automated Trading) system. In the year 1995, BSE moved from an open outcry method of trading to aScreen-based system. This made the transactions faster and reduced the transaction cost along withenhancing the transparency of the system.The increase in Internet and Mobile usage and Accessibility have accelerated retail participation in the stock market.Today we have AI which is almost nullifying human intervention in placing orders and post-trade settlements through its Machine Learning and ANN (Artificial Neural Networks) concepts.In this context, this study is undertaken to trace the path of digitalization of the Stock Market in India and analyse the applications of AI in stock market trading. The study finds that though the extended use of technology and applications makes trading convenient and faster it still has some flaws like a lack of robust technical infrastructure, data protection etc., which needs to be addressed by an efficient regulatory framework. We all are well aware of the NSE Co-location Scam which made the regulatory bodies rethink on thesufficiency of existing regulations for trading and information sharing and protecting investor interests.Hence, the adoption of advanced technology like blockchain, distributed ledger technologies etc., is rising the need for modification of the role of regulatory bodies.Also, the study finds that the number of dormant Demat accounts is more in Indian Stock Market and the stockbrokers have to take measures to convert these into active accounts so that they can meaningfully contribute to the development of the economy.

Keywords: AI,Behavioural Finance, Blockchain Technology, Digitalization,Smart Contracts, Stock Markets.

Introduction:

Technology has always been a change agent and it has led to the progressive transformation of the business and society. With the influx of the internet, the world is heading towards a digital transformation. As a result, we are in a digitalised era, and witnessing technological disruption. According to Gartner, "Digitalisation is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities. It is the process of moving to a digital business." All the business areas are experiencing the effect of digitalisation and so is thefinancial markets and services industry in the form of Financial Technologies which is shortly known as FinTech. FinTech refers to the use and application of software programmes and hardware tools to make financial services and processes more efficient in terms of time and cost and to enable finance managers to make better decisions.Technological advancements like Machine Learning, Deep Learning,Blockchain Technologies, Distributed Ledger Systems, Smart Contracts, Robo advisors, and Algo Trading arerevolutionisinghow stock trading used to happen in the last few years. The depository participants are launching their own online trading platforms to serve their clients better and increase client engagement. This is one of the main reasons for an increase in retail investor participation in the Indian stock market. According to research conducted by 5paisa.com in July 2020, 2/3rd of the cash

market volumeswasaccounted for retail investor trades in the respective month.Retail shareholding in Indian markets has been raised to anearly 15-year high in June 2022(Ravi Kumar, 2023).In this light, this study is conducted to understand the impact of digitalization on the Indian financial markets.

a. Review of Literature:

Prateek Rani and Adithya Srinivasan (2015), conducted a study to analyse the impact and future of digitalization of financial markets. They studied different electronic trading platforms andthe digitalization of the US Market. They found that US Markets are highly digitalised and algo-trading will be the future of electronic trading and the success of algo trading depends on the transparency of the system.Jiya Goel et al., (2020) conducted a study on concepts applications and limitations of AI in Stock Markets with the aim of understanding and evaluating the prospects of integrating AI in Stock Trading. They explored various ways in which stock trading can be done using AI. However, they recognised that TMA and SMA should be used as a part of Machine Learning AI models rather than MACD and RSI. They also found that lack of sufficient high-quality data to feed and train into the system would cause a problem for these models. Siddharth Nair and Dr. Garima Malik (2020), undertook a study on the application of AIto stock market prediction with the intention to understand the various software available forstock prediction while analysing its benefits to investors. They reached the conclusion that AI can be used for predicting the stock markets and sooner it will be the new way of trading in the stock market. Nevertheless, they stressed on the need to protect the investors' money and data privacy.

b. Research Gap:

The literature review shows that while there are many studies which are concerned towards the use of AI to predict share prices and technology, this study aims at making the common man aware of the digitalization of the stock market and the AI-based applications which can be used by the investor while trading to make informed trading decisions.

c. Objectives of the Study:

This study is undertaken with the following objectives:

1. To understand the purview of digitalizationconcerningFinancial Markets.
2. To know the applications of AI in Indian Financial Markets.
3. To analyze the impact of digitalization on retail investor participation in Indian Stock Markets.

A. Discussion:

Gone are the days when trading used to happen by agents meeting face-to-face and using hand signals. In earlier days the transactions needed to be placed and get settled manually.There was no system where the investors could get real-time information about share prices. One should always be dependent on the broker for information as well as the execution of trades. Though the share price information can be seen in the newspaper that would be the previous day's price, the investors need real-time prices to make investment decisions. The physical transmission and execution had increased the share transaction cost, which would affect the final profits. Perhaps, this is the reason, common men did not prefer investments in the stock market.

The beginning of digitalization in Indian Financial Markets can be traced back to 1991-92 with National Stock Exchange. NSE is the first stock exchange to introduce an Electronic Trading System through NEAT (National Exchange for Automated Trading). NEAT is a fully automated electronic and screen-based trading system where members can enter into the computers the quantity and the price they want to trade and the transaction is automatically executed as soon as it finds a matching sale or buy order from the counter-party. This provided depth and liquidity to the market along with offering the convenience of trading for the investors.Under this system, the orders are matched based on time priority.Unmatched ordersremain in the system until they are modified or a fresh order is placed for the same share.NEAT generates and maintains the audit trails of the orders that are executed by providing the unique order number to every order that has been placed on the NEAT system. This makes the tracking of the order and settlement more efficient. Order processing has picked up speed andbecome moretransparent after the introduction ofthe Screen-Based Trading System.Then also the trades had to be channelised through the stock brokers.As

technology progressed the brokers started seeking digital methods to reach out to their clients. These digital methods involve company sites, web portals, social media, smartphone applications, SMS, e-mail, After the adoption of NEAT screen-based trading, another major milestone in the Digitalization of the Indian Stock Market was the dematerialization of securities.SEBI introduced the dematerialization of securities in the year 1996, under The Depositories Act, 1996.Dematerialization of securities is the process by which the physical share certificates are converted into digital form. The digitalized shares are held in the Demat account of the client. Just like we have bank accounts for holding cash our digital shares are held in the Demat account.Thus, having a Demat account is a must for every trader.These accounts are maintained by the depositories approved by the SEBI viz., NSDL and CDSL. It has reduced the transaction
cost, fastened the settlement and made the transactions more reliable,contrary to physical share trading.

The rising competition in the field of financial markets has made brokerage companies introduce and offer innovative services to their clients. Companies are providing technical, fundamental, and market-related information related to the particular company that is required to make informed investment decisions through websites and mobile-based trading platforms. Interactive technical chartsprovidereal-time access to the price changes and market depth of particular stocks and indices. Investors can analyze the stocks based on the combination of different technical tools to make investment decisions using interactive technical charts. With the advent of smartphones, companies are developing mobile-based applications which are making trading more convenient, effortless, and handy. The investors will be givena user id and password using which they can place orders by themselves directly through the broker's website. These platforms alsonotify the investors with all the favourable and unfavourable activities of a company which affect their interest.Investors can now have the details of their portfolios like sector-wise investment, profit or loss, order execution etc., readily available to them.The Stop-loss strategy can be used by the investors to limit the potential losses that can be occurred on a etc.,Brokerage companies started using their websites to provide price information and market movements.Fig(1) indicates that Internet-based trading is increasing year on year.
share. The applications now have an extended feature called GTT (Good Till Triggered) which means the investors can placeorders at a limit price and the order will be active even if the price does not hit by the end of the day unlike, the earlier system which used to get cancelledif the price does not reach the set limit price. Below given fig(1) indicates that mobile and internet-based trading is gradually increasing with the passing years.

The stock market is known for its vulnerability and unpredictability. This can be attributed to the involvement of the human emotional quotient. As a major field of behavioural finance, it is highly dependent on the greed and fear of investors and these are the driving forces behind the price changes. This opened a wide scope for studies on market prediction. Researchers and investment practitioners have also found many technical tools which can work better for predicting the market. However, technological advancement has led to theemployment of AIfor more accurate stock predictions and faster trade executions. Concepts of Machine learning and Artificial Neural Networks are being used to simulate the human brain to understand and mark human behaviour in a particular situation and thus try to make the markets more predictable.These systems are capable of handling huge volumes of data and use historical pricedata and event information to make predictions.Investors can prepare their own models or a committee of models (combinations of different models)by adjusting specific parameters to seek trend-relatedinformation. Algorithmic trading which is popularly known as algo trading is trending now because of its data processing ability and executing trades at high speed.It is an automated trading system which usesa pre-defined set of rules for trading. Investors have to feed the trading instructions regarding the price, quantity, technical tools etc., The computer follows these instructions and executes the trade without any human intervention as soon as the instructions are made good. For example, if an investor sets an instruction to buy 100 shares of ABC company if the Daily and Weekly RSI crosses

above 70, the computer will automatically buy 100 shares of ABC company as soon as the daily and weekly RSI crosses 70. Algo trading can be understood just as an extension of limit orders. But the difference between these two is limit order uses only quantity and price parameters whereas the algo trading algorithms use combinations of technical tools along with the price and quantity.This is being adopted at a faster pace because of two reasons. One is, because the computer executes the trades automatically when the predefined criteria are met, there will be no room for human greed for *"some more profits"* or fear of *"What if the price goes still down?"*. The algorithms will stick to the trading rules set by the investors. Another important reason is, the processing speed of computers is more than human beings. So, they can execute the trades at afaster speed and can crack the deals at better prices than manual trades.

The invention ofDLT (Distributed Ledger Technology), Smart contracts andBlockchain technology ischanging the way of trade execution out and out. Smart Contracts are self-executing programmes which will enforce the contracts on fulfilment of the terms and conditions mentioned thereof. They are used in the clearing and settlement of transactions in the stock market. Also, with the use of DLT transactions can be made more secure and cost-effective. DLT is a digital system which records the transactions along with their details at multiple places at the same time. This validates, securesand updates the transactions on a real-time basis. This is the reason the SEBI could adopt a T+1-day settlement cycle and now, it is planning to use blockchain for automatingpre-trading and post-trading activities in Indian Stock Market. In fact, SEBI has formed an advisory Committee on Financial and Regulatory Technologies (CFRT) toresearch the blockchain platform and other technologies that are used in fundraising, asset management and post-trade settlement.Blockchain technology can be used to make stock exchanges efficient through automation and decentralisation and mitigate the need for a third-party regulator to an extent. The rules and regulations would be built within the smart contracts and can be automatically enforced and the post-trade transactions and transfer of legal ownership can be performed through the use of DLT.

The Robo Advisors are being developed for customising investment plans. "It is a digital platform that provides automated, algorithm-driven financial planning and investment services with little or no human intervention." (Jake Frankenfield, 2023). These advisors work based on the information collected by the registered investor regarding the investment profile and risk tolerance ability of the investor and investment goals. The necessary information is collected through the questionnaires and then the robo advisors will prepare a customised investment schedule accordingly. These are programmed to work on a Modern Portfolio Theory where the portfolios are rebalancedin line with the set benchmark index. According to an article by Ashish Rukhaiyar in Business Today, there were nearly 80 Robo advisory Firms in Indiain 2021. In India, this industry is still in the gestation stage.

Figure 1: Graph showing the percentage of trades through different modes of trading in BSE

Source: BSE. (Compiled by the researcher)

B. Findings and Suggestions:

The concept of trading started in the 18th century in India. what was started by mere 22 stock brokers under a Banyan tree, is now a market worth of INR 2,61,81,064 crores. The establishment of SEBI as a regulatory

body and its investor protection norms, rising financial literacy, technological innovation and emergence of technical tools haveaccelerated the market participation of individual investors in the Indian Stock Market. Further, these technological improvements have made the market more accessible and brought down transaction costs along with faster settlement cycles leading to the enhanced liquidity of the market. As a result, the share of individual investors has become 41.6% by the end of FY 2022 from 33% in FY 2016 (NSE Pulse). The study finds that the trades using Co-location services, Mobile platforms and Internet Based Trading are increasing year on year [fig(1)].Also, the number of Demat accounts in August 2022 crossed 10 Crores, which is a 5x increase from the year 2018. NSDL and CDSL collectively added 22 Lakh new Demat Accounts in a single month of August 2022. Nevertheless, there is a wide gap between the number of Demat accounts and the active traders in the market.The ease of accessibility and simplified account opening process due to digitalization is another major reason for this increase. It is a good sign for the economy as it promotes capital formation.

Conclusion:

From the open outcry method to Algo trading, the Indian stock market and trading have come a long way. However, in a digitalised ecosystem, there is always a jeopardy of data infiltration, data stealing, data misutilization and technological glitches like connectivity and run-time issues. This will wake the need for the regulatory bodies to bring stringent regulations towards safeguarding investor interests in cyberspace as well. However, digitalisation has started just now and with the increasing number of internet users, individual investors are getting added day by day, this indicates the wider scope for growth of the stock markets.The adoption of the Blockchain, Smart Contracts and Distributed Ledger Technologies to their fullest extent would automate the trading and settlement procedures. This will modify the role of regulatory bodies to some extent. Overall, digitalization has a positive impact on Indian Stock Market. Asset digitalization is the emerging concept in the stock market which is aimed at providing for fractional ownership and improved cross-border share transactions and security of the shares. This will lead to the metamorphosis of the stock market.

References:

1. Agrika. (2022). India cross 10 crore Demat accounts in August 2022, 60% new Demat accounts opened in 29 months. Meel Bijendra. Retrieved from Meel Bijendra.
2. Angel One. (n.d.). What is Algo Trading? Retrieved from Angel One: https://www.angelone.in/knowledge-center/online-share-trading/what-is-algo-trading
3. Angel One. (n.d.). What is Dematerialisation. Retrieved from Angel One: https://www.angelone.in/knowledge-center/demat-account/what-is-dematerialisation
4. BSE. (2023, April). Mode of Trading Data. Retrieved from BSE: https://www.bseindia.com/markets/equity/EQReports/Cmmode.aspx
5. CFI Team. (2023, January). Robo Advisors. Retrieved from Corporate Finance Institue: https://corporatefinanceinstitute.com/resources/wealth-management/robo-advisors/
6. Erik Feyen, Jon Frost, Leonardo Gambacorta, Harish Natarajan and Matthew Saal. (2021). Fintech and the digital transformation of financial services: implications for market structure and public policy . Bank for International Settlements.
7. Ervin, E. (2018, August). Blockchain Technology Set To Revolutionize Global Stock Trading. Forbes. Retrieved from https://www.forbes.com/sites/ericervin/2018/08/16/blockchain-technology-set-to-revolutionize-global-stock-trading/?sh=ca987a74e568
8. ET Contributors. (2018, January). How blockchain will change the way you trade in stock markets. The Economic Times. Retrieved from https://economictimes.indiatimes.com/markets/stocks/news/how-blockchain-will-change-the-way-you-trade-in-stock-markets/articleshow/62161610.cms
9. Frankenfield, J. (2023, March). Distributed Ledger Technology (DLT): Definition and How It Works. Retrieved from Investopedia: https://www.investopedia.com/terms/d/distributed-ledger-technology-dlt.asp
10. FRANKENFIELD, J. (2023, February). What Are Smart Contracts on the

Blockchain and How They Work. Retrieved from Investopedia: https://www.investopedia.com/terms/s/smart-contracts.asp
11. GAA Advisory. (n.d.). Retail Investors in India. IGAA.
12. Gauri, D. P. (2023, February). Potential of smart contracts in blockchain. The Economic Times.
13. Jacqueline Prause. (2021). Digitization Vs Digitalization. Retrieved from sap.com: https://www.sap.com/products/erp/digitization-vs-digitalization.html
14. Jiya Goel, S. V. (2020). Artificial Intelligence in Stock Market: Concepts, Applications and Limitations. International Journal of Advances in Engineering and Management (IJAEM), 2(9), 578-583. doi:DOI: 10.35629/5252-0209578583
15. Motilal Oswal. (n.d.). All You Need To Know About Dematerialization Of Shares. Retrieved from Motilal Oswal PHYGITAL: https://www.motilaloswal.com/blog-details/all-you-need-to-know-about-dematerialization-of-shares/19929
16. Motilal Oswal. (n.d.). The AI and Machine Learning Revolution in the Stock Trading Industry. Retrieved from Motilal Oswal PHYGITAL: https://www.motilaloswal.com/blog-details/the-ai-and-machine-learning-revolution-in-the-stock-trading-industry/20295
17. Prareek Rani, A. S. (2015). Digitalisation of Financial Markets: Impact and Future. International Journal of Research in Finance and Marketing, 29-33.
18. Priem, R. (2018). Distributed ledger technology for securities clearing and settlement: benefits, risks, and regulatory implications. Financial Innovation, 1-25. doi:https://doi.org/10.1186/s40854-019-0169-6
19. SAMCO. (2023, March). The Role of Artificial Intelligence in Stock Market Prediction. Retrieved from SAMCO: Stock Market Library: https://www.samco.in/knowledge-center/articles/artificial-intelligence-in-stock-market-prediction/
20. Shobhit Seth. (2023, March). Automated Investing. Retrieved from Investopedia: https://www.investopedia.com/articles/active-trading/101014/basics-algorithmic-trading-concepts-and-examples.asp#:~:text=Algorithmic%20trading%20(also%20called%20automated,impossible%20for%20a%20human%20trader.
21. Siddharth Nair, D. G. (2020). A STUDY ON APPLICATION OF ARTIFICIAL INTELLIGENCE IN STOCK MARKET PREDICTION. International Journal of Creative Research Thoughts (IJCRT), 8(6), 1403-1414.
22. The Associated Chambers of Commerce and Industry of India. (2023). Indian Capital Market: Driver of Growth During Amrit Kaal.
23. The Future of Digital Transformation In India. (2023). Retrieved from Insight Success: https://www.insightssuccess.in/the-future-of-digital-transformation-in-india/
24. Vinith V Bhandarkar, A. A. (2019). DIGITAL STOCKS USING BLOCKCHAIN TECHNOLOGY THE POSSIBLE FUTURE OF STOCKS? International Journal of Management (IJM), 44-49.
25. Vonko, D. (2022, May). Neural Networks: Forecasting Profits. Retrieved from Investopedia: https://www.investopedia.com/articles/trading/06/neuralnetworks.asp

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

"Digital Agriculture in India An-Overview"

Meenakshi Math
Full -Time Guest Faculty, Department of Commerce,
Karnataka State Akkamahadevi Women's University Vijayapura.
Corresponding Author- Meenakshi Math
Email: mathmeena369@gmail.com
DOI-10.5281/zenodo.8036091

Abstract:
Agriculture is the basic occupation of India. The population of the country that is dependent on this sector is 58% directly or indirectly. Its contribution to the GDP of a country is 19%. The foreign exchange earnings are over the year. Its contribution to the food processing industry is accelerating. So its contribution to all these sections is dependent on the development of agriculture.

The per capita income of the farmer can be increased on the existing land -
By **increasing** yield per acre and
By **decreasing** the expenditure on crops per acre

These two things and the previous points can be achieved through "**Digital Agriculture**".
Digital farming can be defined as the use of technology by farmers to integrate financial and field–level records for complete farm activity management.

The Brief Background Of Agriculture In India:

1. Agriculture in India started with the Indus Valley civilization. Rice and cotton were two crops that were cultivated in Indus Valley.
2. Before independence, there were not many reforms or updates other than the mechanization of facilities.
3. A severe drought in 1965 forced India to import large quantities of food from foreign countries and convinced India to reform its agriculture policy.
4. Then Prime Minister Lal Bahadur Shastri voiced the slogan "Jai Jawan-Jai Kisan".He bought the policy of the Green Revolution (Third Agriculture Revolution).Green revolution refers to the emphasis given to change in technology, new equipment, modernization, innovations, and many in the existing agricultural methods to increase production at a cost-effective.
5. The cost of production was high and failed to meet some of the challenges thrown by the growing population and climate.
6. In the main time "Modern Farming" was being introduced in some countries.
7. Punjab, Haryana, and Western Uttar Pradesh were the first to try out modern farming methods in India.
8. A committee was formed by the Indian government in 2004 under the chairmanship of M.S.Swaminathan known as the "National Commission on Farmers".He was an eminent geneticist and scientist in agriculture. The purpose of this commission was to study and suggest methods for faster and more

inclusive growthof farmers. This report was envisaged in the planning commission of the 11th five-year plan.

9. In 2010-11 National e-Governance Plan in Agriculture (NeGPA) was introduced in India.The scheme was sponsored by the center to provide access to agricultural-related information to farmers, with the help of ICT.
10. Now the country started realizing the significance of digital technology to face challenges posed by natural calamities which is not under control and the growing population.

Meaning And Definition Of Digital Agriculture:

Digital farmingcan be defined as the use of technology by farmers to integrate financial and field–level records for complete farm activity management.

It is also called smart farming and e-agriculture. Digital agriculture is the integration of digital technology into livestock and crop management and other processes related to cultivating, testing, and managing food resources. It is used for processing the huge crowded database management to support the development and delivery of timely targeted information and services. It also includes precision agriculture which refers to maintaining the diet of the soil, so that quality and quantity of the crop can be enhanced.

Significance Of The Digital Agriculture:

Digital agriculture plays a vital role in the agriculture of the country by helping in the transformation from dogmatic methods to digital methods. In this, we deal with

1. Managing Soil diet.
2. Weather prediction.
3. Information on real-time demand and supply.
4. Reduction in loss of crops due to climate and diseases.
5. Water management.
6. Increase in production of crop per acre and decreasing the cost of production per acre.

Working Of Digital Agriculture:

1. Managing Soil diet: The quality of soil is to be maintained. According to requirements, soil nutrients are to be provided and protected. This is possible by testing the soil in the lab and a prescription is given to farmers on soil according to requirements.

2. Weather Prediction: Agriculture is dependent on weather conditions that are not under our control. Here by the use of digital communication and weather satellites, advanced weather prediction can be provided to the farmer. With this information, the farmer can initiate suitable precautions in protecting or planning the cultivation of crops.

3. Information on real-time demand and supply: The farmer needs to plan the cultivation and harvesting depending on the total production in the country also it is necessary to be aware of the availability of products during the year.

4. Reduction in loss of crops: By real-time inspection of soil and crop, suitable insecticide or manure can be used from time to time as required and the loss in production of crops can be minimized.

5. Water Management:In this the exact quantity of water required depending on the moisture of the soil and the climate, can be managed by drip irrigation, etc. We can also manage nutrients, required for the crop, depending on the soil quality and water management.

Government Initiation In Digital Agriculture:

1. The government has taken many measures to push this sector from developing to an advanced sector.
2. In September 2021, the government launched the "Digital Agriculture Mission"for the period 2021-2022 to 2024-2025 to speed up digital agriculture.
3. A Memorandum of Understanding (MoU) was signed to advance digital agriculture.
4. These MoU are signed by the minister of agriculture with CISCO, NINJACART, JIO Platform Ltd, I.T.C. Ltd, and NCDEX.

The MoU with-

1. CISCO is the enabler of data communication between network nodes.
2. Works as a linking chain in transferring huge data between the farmer, the land &testing center, and the weather burro.

3. NINJACART which is a supply Chain Company helps in coordinating the variousplayersconnected with agriculture.
4. JIO PLATFORM LIMITED which is a platform for the transformation of information through its networks provides real-time access and communication of data between the stakeholders connected with agriculture.
5. I.T.C. Ltd which already has a good communication network between B2B and B2C is to be utilized for digital agriculture purposes with farmers.
6. NCDEX provides real-time information on the price of products, availability in the market, demand, and supply status. This helps the former to bypass the middlemen and take suitable decisions towards higher profits.

Conclusion:

It has become necessary to design a model for increasing agricultural products over the next 50 years. Further, this model should be a sustainable one, as the population will be continuously growing. Digital agriculture is one such model that can satisfy the need in the next 50 years.

Thus by adopting digital agriculture,we can **Expandthe Production of crops per acreandDecrease the Cost of Production per acre.**

References:

1. https://www.dreamstime.com/photos-images/agriculture.html
2. https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.telegraphindia.com%2Fedugraph%2Fcareer%2Fcareer-in-government-jobs-what-you-need-to-know%2Fcid%2F1875427&psig=AOvVaw26w5JABWkN6y3A4gdETx6N&ust=1683442225999000&source=images&cd=vfe&ved=0CBEQjRxqFwoTCOjAvbCN4P4CFQAAAAAdAAAAABAE
3. https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.kaercher.com%2Fin%2Fprofessional%2Fknow-how%2Fdigitisation-in-agriculture.html&psig=AOvVaw2oYTk258lVkKpXxzGr6Jn9&ust=1683442302090000&source=images&cd=vfe&ved=0CBEQjRxqFwoTCNilvdSN4P4CFQAAAAAdAAAAABBF
4. https://www.google.com/search?q=soil&rlz=1C1CHBD_enIN992IN992&sxsrf=APwXEddeBNyGkBy3-5slNfgWY45-oBqM-g:1683356334778&source=lnms&tbm=isch&sa=X&ved=2ahUKEwjE_PSCj-D-AhXoTGwGHXZBAFwQ_AUoAXoECAMQAw&biw=1366&bih=568&dpr=1
5. https://www.alamy.com/stock-photo/indian-farmer-standing-looking
6. https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.canstockphoto.com%2Fimages-photos%2Finformation.html&psig=AOvVaw0NqK-tmAPKWDzY7WdPcATf&ust=1683442806061000&source=images&cd=vfe&ved=0CBEQjRxqFwoTCKDcvsWP4P4CFQAAAAAdAAAAABAG
7. https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.indianetzone.com%2F7%2Findian_crops.htm&psig=AOvVaw0VRjIyMmFVj2VEF9ipf2sb&ust=1683442892228000&source=images&cd=vfe&ved=0CBEQjRxqFwoTCICb-O2P4P4CFQAAAAAdAAAAABAJ

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Dynamics of Employee Recruitment Methods in the Digital Era

Sunitha S[1], Dr. Chandrashekar Mathapati[2]
[1]Research Scholar, Dept of Management, Karnataka State Akkamahadevi Women's ,University, Vijayapura
[2]Assistant Professor, Dept of Management, Karnataka State Akkamahadevi Women's University, Vijayapura
Corresponding Author- Sunitha S
Email- sunitharkattimani88@gmail.com
DOI-10.5281/zenodo.8036113

Abstract

Preface: Employees are the most important assets to any organization. Attracting the best, significant and valuable employee is key to the success of the organization. Today's fast growing markets and changing business processes and competitive environment has led companies to be more demanding regarding the quality of the employee. On the hindsight the world today has emerged as a big global village where the employee and the employer may not be from the same geographical location and site. It is here where the mediation of digitization has become a compulsion which acts as a bridge between the employer and the employee. So also the advent of digitalization has rendered the traditional Human Resource Management practices inadequate. At this stage it becomes a necessity to study and examine various recruitment functions within the scope of Human Resource Management vis-à-vis digitization process. This study necessitates a discussion about the basic dynamics, tools of e-recruitment. An attempt has been also made to highlight various advantages and disadvantages.

Objective: The present paper attempts to study and examine various recruitment functions within the scope of Human Resource Management vis-à-vis digitization process. This study also discusses the basic dynamics, tools of e-recruitment and highlights various advantages and disadvantages.

Key words: Human Resource Management, Digitization, E-Recruitment

1. Introduction

Today's world is based on technology. We can sense the presence of technology in every sphere of our lives, esp. Internet – it has changed everyone's lives drastically since its introduction in 90's. Be it office automation and management, buying, selling, exchange of products and services etc. Usage of Internet has rather become a compulsion than fad. It has changed the perception of the people towards their lives and work (Bhupendra, S H ; Swati G, 2015). Consequently, the whole world is just a click away. Human Resource Management is not an exception to this - as hiring, acquiring, and retaining multi level talents from across the world has become so easy and accessible. Such notion of recruitment process using Internet is termed as e-recruitment.

E-recruitment is an easy term that is used to broadly describe recruiting. It does not refer to any particular recruiting process. It can be used interchangeably with online recruiting and online recruitment. E-recruitment is an umbrella term for attracting, assessing, selecting, recruiting and on boarding job candidates, recruiting and recruitment management activity using web based technology. (Theobodeu,2017). Through e-recruitment employers reach larger number of potential employees. Companies may build their e-recruitment platforms in-house, use e-recruitment HR software or employ recruitment agencies that utilize e-recruitment as part of their recruitment package.

Furthermore, even the job seekers also majorly prefer online applications and interview process as compared to the traditional methods of applying for jobs and attending interviews physically. The major reason being it saves time, saves money and serve the purpose of reaching larger variety of jobs in a short span of time. Further part of the paper the authors have explained various facets of e-recruitment

2. Landscape Of E-Recruitment

According to Armstrong (2009) e-Recruitment is a process that uses internet to advertise or post vacancies, provide information about the jobs and the organization and enable

e-mail communication to take place between employers and candidates.

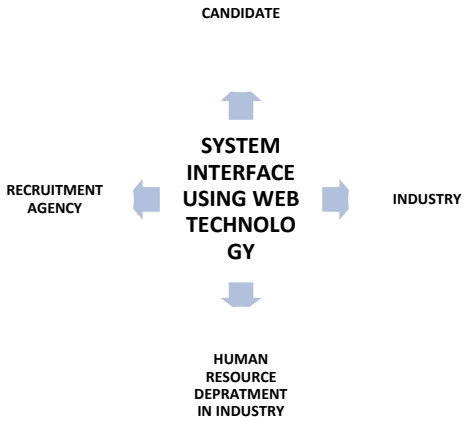


Fig 1: Landscape of E-Recruitment (Source: Ies)

a. Industry

1. **Sourcing the right Potential Candidates who fit the Job:** Sensing the need of qualified job candidates for a current or pending position in the Industry is where the entire process of recruitment starts.
2. Putting all those job requirements in terms of the qualifications is the next process undertaken by the industry.
3. Communicating the requirements of jobs to the internal Human Resources Department in terms timelines and deadlines have to be communicated.

Tools used: Emails, Zoom, WebEx Meets, Google Meets, Skype

b. Human Resource Department

1. The HR Department attempts to know where the pools of required candidates are.
2. Usage of job sites, social media platforms, is the most common methods used for online recruitment.
3. Most common job sites are ***Indeed, Monster, Times Job, GlassDoor, FlexJobs, Ladders, WellFound*** and the do.
4. Social media platforms like ***Facebook, LinkedIn, Instagram*** have been commonly visited sites for finding, tracking and recruiting candidates online.

c. Recruitment Agencies

In many profound cases the HR department of Industry appoints an external agency usually termed as outsourcing partners, who on behalf of the industry and its HR department, undertakes the recruitment process from start to end phase, for which they will charge fees. This is the most common way of identifying right resources as the reach of such agencies is far and wide. These agencies may have built their e-recruitment platforms in-house or recommended ***HR software's*** that are being utilized for e-recruitment.

Apart from these the agencies also undertake following processes which extensively use Web Technology-

Tracking Systems uses an algorithm to sort out resumes of the potential candidates and simplify the process of recruitment for the hiring this software helps to segregate under qualified resumes and qualified resumes during the hiring process. So, this enables the recruiters to see the resumes that are filtered and as per their criteria asked in the job profile.

Preliminary Interviews of Candidates by using free interview video tools like **Zoom, WebEx Meets, Google Meets, Skype** etc.

Automated Online Interviewing System is a system built by many agencies where the candidates can speak, get into group discussions and use clip boards and flip boards in groups.

d. Candidate:

Tracking of Jobs and its requirements is tracking the status of requirements with respect to the interested jobs to be applied by him/her. The candidate can use free Internet Resources and browse sites such as ***Indeed, Monster, Times Job, GlassDoor, FlexJobs, Ladders, WellFound*** and the do. Social Networking sites such as Google+, Twitter, Facebook, LinkedIn, Instagram etc also helps in finding jobs and career opportunities.

Employer's Website provides details of job opportunities and data for the same.

Online Application is the process of applying the interested job by the candidate having sent the biodata/resume/application as

in the required format by the industry or the HR outsourcing agency. The tools used can be ***free internet resource and email***.

Online Interview/Testing is the process of evaluation of candidates over internet based on various job profiles to judge them on various factors. This can be done using by using free interview video tools like ***Zoom, WebEx Meets, Google Meets, Skype*** etc.

3. Advantages And Disadvantages Of E-Recruitment

Every process attracts its own unique set of advantages and disadvantages. E-recruitment is no exception to it. It is resulting in some great advantages to the employers and employees and also posing some disadvantages to both. Some of them are discussed herein below

Advantages to Employer:

1. Wider Scope of Talent Pool
2. Saves Time
3. Saves Cost
4. Benefits of Advertising
5. With search engines the search with keywords becomes much easier
6. Candidates with high levels of Job fit

Advantages to Employee/ Job Seeker:

1. Easy to apply for the jobs
2. Searching for specific Jobs becomes easy
3. Higher Opportunities
4. Wider Geographic Area
5. Faster Responses

Disadvantages to Employer:

1. Rise in Competition
2. High access and maintenance fees
3. Fake Profiles
4. Casual Attitude of the Employees
5. Lack of Personal Interaction
6. Internet Literacy at both ends
7. Technical Issues
8. Attracting Bad Employee

Disadvantages to Employee/Job Seeker:

1. Impersonal Communication
2. Issues related to privacy and security
3. Old and outdated Job Ads
4. Industry/Agency does not respond
5. Not Possible for all kind of jobs
6. Internet Literacy at both ends
7. Technical Issues

4. Scope For Further Research

As witnessed in the explanation the advent of e-recruitment has eased the hiring, acquiring, interviewing process but also poses equal amount of disadvantages. The present theoretical paper has attempted to foresee the concept of e-recruitment from theoretical perspective, but proving such theory with practical orientation with first hand survey in different industries such as software (IT/ITES), government sectors, manufacturing sector, and core service sectors is worth taken up as specialized doctoral study.

5. Conclusion

From the study taken up by the authors, it is clear that e-recruitment has created a big leap in the area of Human Resource Management. The process of e-recruitment is not only about usage of technology, but also about bringing in a behavioral and cultural change in the way Human Resources were hired/acquired in the past, which concludes that e-recruitment is here to stay and will only manifest in newer ways and means in the future.

6. References

1. Bhupendra, S.H. & Swati, G.(2015). Opportunities and challenges of e-recruitment. Journal of Management Engineering and Information Technology, 2(2), 1-4.
2. Patric Theobodeau (2017), An Introduction to E-Recrutiment, Talent Management, 2017
3. Armstrong, M. (2009). Armstrong's handbook of human resource management practice. (11th Edition), London:Kogan page

Web References:

1. https://www.iescomm.com/careers
2. https://www.innovativeemployeesolutions.com/human-resources-outsourcing/hr-resource-center/
3. https://www.adapt.io/company/ies-communications/hr-contacts
4. https://www.ambitionbox.com/salaries/ies-salaries/human-resources-department
5. https://theintactone.com/2019/02/18/hrm-u2-topic-5-methods-and-techniques-of-e-recruitment/
6. https://hr-on.com/top-10-benefits-of-e-recruitment/

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Paradigm Shift to Online learning: Issues and Challenges in Indian Education System

Dr. Ganiger Bharati
Assistant Professor, Department of Education and Research, Karnataka University, Dharwad.
Corresponding Author- Dr. Ganiger Bharati
Email- dreamz.bharti@gmail.com
DOI-10.5281/zenodo.8036135

Abstract:
Indian Education system considers as Education is one of purest and noble profession. All disciplines emerge from Education initially and merge into Education at last. Education system has continuous changes in its design & paradigms. Starting from Behaviouristic to Cognitivistic and then to Constructivistic and now towards Connectivistic shifts. Presently Indian education system found drastic shift from traditional learning to Online leaning in this year especially in Covid-19 pandemic. Indian Education system is witnessing e-learning boom. Education system is in the state of flux. In this article the traditional class notions, online class innovations, the issues and opportunities and various practical ideas related to Online Education system have been tried to bring in to the focus of academic community.

Key words: Online Education, Paradigm Shift, Education System. Traditional Learning.

Introduction:

The Present situation is very critical due to covid-19 pandemic. The nation wise lockdown was imposed and which resulted in schools and colleges have been closed across the country also across world affecting 500 million students. Amid covid-19 disrupted the whole academic year. The strict orders of stay home and social distancing have made everyone to be caged at home. The shutdown has affected teaching-learning and also assessment. This gap has been tried to fill by e-learning pedagogies. In such difficult situation to maintain the balance in the educational sector the Educating community has come up with better alternatives that any educational institutions could use, let's call them as supplementary ways to the regular process of teaching-learning and complementary to traditional education system. Gradually Indian Education System too shifting paradigm towards Online Education. Educational Institutions are focussing on e-learning methods on digital platforms. Hence there is huge demand rising to online learning, online learning platforms and online learning applications.

India has the largest group of population aged between 4 to 23, which make the huge prospect in the education. Then comes the feasibility, off course online education is started now but there are various challenges like is it possible for all to access to education through online, if maximum of all get connected to online classes, then to what extent the content is transacted successfully and meaningfully to al the learners. Quality of Education is the matter to think in the online era. Equally there are different opportunities of this paradigm shift from the tradition classrooms to online.

Theoretical Background:

Before 20th century, Behaviourism was ruling the teaching-learning process. The teaching-learning process was passive in nature. It was teacher centered and external behaviour was over emphasized. After few decades the pedagogy was slightly shifted towards cognitivism, where in the child's knowledge and thought process were considered, Then the shift moved fast to Constructivism, where the learners at the centre and the process of teaching-learning is active and interactive. The process of learning is largely based on connecting previous knowledge with present to know about future. Presently we are in the phase of shifting to Connectivism. Connecting dot to globe, zooming out from zooming in, where

there is connecting the knowledge gained to all through various modes and media. Sharing the knowledge from one individual to the whole world. Current online education is with Connectivist pedagogy. In fact digital pedagogies are Connectivist in nature. Hence, presently the situation has come to accept the new pedagogy along with earlier ones.

Opportunities and Challenges:

The Shift towards online learning bears the main advantage of online education is its Flexibility. Students can adjust their study timings as per their own needs and time set up. sometimes the option to choose some interesting course too. The student may be either indoor or outdoor, can attend to their classes and can save their time, energy and money too.

It helps to promote life-long learning, because it may help the people of any age to undertake the courses and complete them. Students can also perceive some other interested courses after their degrees like vocational courses.

Online learning tools and various online learning platforms with their customised services, addressing various challenges of access and constrained financial services. These are offering education to millions and millions from urban and rural areas in their own way. Online education helps to meet the people of **similar interest in the academics and research.** Through this online platform academicians from different places of countries can interact and discuss the related academic issues.

Wider choices of courses and subjects: Due to online learning the opportunities to choose the subjects, Institutions, countries and other options have been increased. In traditional classes, the learner has to attend physically hence it would be difficult if he/she stay away from the institution geographically. Here in online classes, learners are opting various courses from various premiere institutions, SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) MOOC's (Massive Open Online Courses), certificate courses, UG and PG courses, Online Faculty Development programmes and workshops, Orientation programmes through different platforms. This opportunity is really benefitting the learners and teachers. There raised wider use of interactive teaching-learning platforms like , Udemy, skillshare, Coursea, EdX, Udacity, Pluralsight, Future Learn and Moodle etc. The online classes found their way through different applications, like google met, zoom meeting, go to meeting app, webex and many more. Totally the online learning has been managed by Leaning Management System (LMS) a software application that automates the administration, tracking and reporting of training events.

No language barriers: Now in online learning, there are various opportunities to discuss in wished subject by participating in local webinars. Those who are interested in different languages can opt for such language courses and any medium according to their feasibility.

Anywhere, Anytime: The main principle of online teaching-learning is anywhere and anytime. Teaching-Learning through online via internet and social networking services has made the process easy to reach, understand and communicate back to the teachers, online classes, online tests, online assessment and online grading has made the process strong in the absence of offline classes. The geographical locations are no more hurdles for anyone.

Student Centered Teaching-Learning Process: As online pedagogies are constructivist and connectivist in nature, obviously they are student centered classes. Learners will learn according to their learning pace, they can learn in their own places, they can choose their own subjects, can watch classes according to their free time and give exams easily before the time limit.

Creative Teaching: Certainly the online classes are creative. If the teacher is not creative the classes bring no meaning. As students are away from the teacher physically, Teacher has to be very creative to grab the students' concentration and sustain the interest and concentration throughout the teaching-learning process.

Online mode brought Education to home: Online Education has brought the very system of education to the home itself. Due to the present serious health hazards no can go out and attend the classes as earlier, in such a condition the option of On-line learning has brought Education to the home.

Connect to global village: The Globe has become a small village in the hands of science and technology. Due to the vast development of digital technology the online learning has brought all the teachers, learners and

academicians and scientists, Researchers in one platform and share the knowledge and understanding. The world has become one village, everyone can communicate to all interms of teaching and learning.

Access to resources, Resource persons, Expertise thought the world: The online **Challenges**:

1. Online learning is rescuing the students in the world presently
2. There are various challenges while undergoing online learning, as a means to keep up and continue with educational flow, everyone needs to adopt online learning
3. Online learning never ever replaces the real teacher and learner, the value of face to face interactions will never be achieved through online learning.
4. When teacher is not present and not explaining the meaning of any content, anybody for that matter may understand half or may misinterpret the things. Half understanding of the information is harmful than nothing. Hence face to face interaction is very much essential for meaningful learning.
5. As there are no regularities of a bound classroom, it is quite obvious that the curriculum will not be maintained the way it should be, There are high chances of distracting in-between.
6. High drop-out rate: Learners are more likely to drop out as they are not giving their full commitment to their studies and may take their studies too lightly. there will not be any one particular mentor for the students to keep a track record on their progress and solve their doubts effectively at some places, where online education is difficult to reach.
7. Matter of Interest and Motivation: Online education progressively losing Interest and motivation due to absence of novelty and not attention.

Technological challenges:

Online learning is possible only when we have all technical facilities. India is developing country, till now much of the places including cities, don't have proper internet connections, network, electrical power facilities and one may imagine the status of remote areas. Electronic gadgets like computers, lap-tops, smart phones and other basic digital facilities are lacking for more than half of the people. The unproductive power cut de-motivates the process. Educators are under tremendous stress in solving the structural issues like teaching methods and transactions. Even the teachers don't have personal digital facilities.

Economic Status of the Parents:

The economic status of the family may not allow their children to buy the e-gadgets and connection to attend online classes, if at all they have one smart phone, it is very difficult for parents to manage with two or more children. Children start quarrelling among themselves and may lead to behavioural changes among them. Society is observing behavioural and social problems when it comes to the point of less opportunities. Parents are also undergoing stress to manage the online classes with their kids.

Another big issue with online learning is that the fear of connecting online, not only for classes but for workshops, hands on activities. Learners feels insecure to connect online, they have the fear of leakage of personal data through net.

The feedback mechanism is limited in online classes; hence online education cannot keep contact with their peers through active feedback system. It needs a string Self-motivation and time management skills. The peer group may not be honest during the online assessment.

Social Isolation coupled with online learning may cause loneliness among students and may have several mental issues such as stress, anxiety and negative thoughts.

On the other hand online classes needs more preparation comparatively to off line classes because teachers have to teach all concepts and imagine students' doubts and clear them too without really being asked by the students. Off course the facilities are much more available than to earlier days. Absence of technical facility makes the transactional process little hectic one. Not all the time, all the places due to these hindrances the intended quality may not be reached.

Way forward to achieve the objectives:

Education has helped to get accessed to expertise from other universities, states and countries too. The resource materials have been increased as they are in e-form, and can be easily shared among all.

1. Online learning could be a potential solution way out for such scenario.
2. Making online classes interactive one may help all the learners
3. Promoting increased interaction between only students.
4. Utilizing blended learning environment.
5. Continuous monitoring through assignments, assessments and interaction.
6. Build a strong self-motivation and disciplinary skills, which are the keys to succeed in an online learning environment.
7. Peer- to Peer activities could also be encouraged along with teacher-peer interations.
8. Develop communication skills as much as possible because, only teacher talks continuously and makes the learners passive. Learning passively becomes the habit and will not develop the communication skills.
9. In assessment, to protect authenticity in online learning anti-measures could be used like anti –cheating measures like Id verification at different steps of teaching-learning process.
10. Providing hands-on and minds-on activities develop practical skills which are available in online learning platforms.
11. Computer literacy should also be developed as it would be need of the hour.
12. Focus on meaningful transaction of the content.

Conclusion:

Online learning has become the inevitable part of Education system now. It has huge opportunity over to traditional classroom setting. Equally it has various challenges for Indian context. In the period of Covid- 19 online Education however it includes difficulties it has emerged like boon to protect our education system from falling down to the ground level. As the Indian Education system basically developed from the gurukula system, naturalistic and idealistic systems of education may found little difficulty to adjust easily to the online learning completely hence in Indian context the advancements in digital materials made difficult in achieving the hundred percent success in achieving the objectives. In India Online Education is in embryonic state, which needs to be passed out from incubation, needs to provide the opportunities to engage, to explore the idea through germination, incubation, creation and construction of new knowledge through online learning.

References:

1. Clara, M. & Barbera E.(2013). Learning Online: massive open online courses (MOOCs), Connectivism and cultural psychology. *Distance Education*, 34(1), 129-136
2. Jeremy. *K. (2014). Digital culture clash: "massive" education in the E-learning and Digital Cultures MOOC.* Retrieved from https://doi.org/10.1080/01587919.2014.917704
3. Kaur, R. (2019), MOOCs in Higher Education: Challenges and Opportunities, *International Journal of 360 Management Review,* vol.7, pp: 115-118 accessed from http://www.ij360mr.com/docs/vol7/spcl/32.pdf
4. Kuhn, T. (1972). *The Structure of Scientific Revolutions.* Chicago, University of Chicago.
5. http://digitalindia.gov.in/newsletter/2016_july/index.php
6. Ellis, Ryann K. (2009), Field Guide to Learning Management System, ASTD Learning Circuits.
7. Digital India, vision and vision areas : http://www.digitalindia.gov.in/content/about-programme

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Roll of Information Technology in Development of Agri-entrepreneurship - A Study in Karnataka

Mr. Manjunatha Sharma R H[1], Prof. H.M.Chandrashekar[2]
[1]Research scholar, Institute of Development Studies Manasagangothri, Mysore
[2]Professor in Agribusiness Management, Institute of Development Studies Manasagangothri , Mysore
Corresponding Author- Mr. Manjunatha Sharma R H
Email: sharmahravanikar@gmail.com
DOI-10.5281/zenodo.8036185

Abstract

The Information Technology is a field of collection, collation, interpretation and dissemination of information with the help of technology. The modern age is the age of knowledge, and the knowledge is based on information. The requirement to gain and attain information is ever increasing. The physical capability to gain information is very limited. As normal human effort to gain vast information comes out to be costlier, difficult, time consuming and of limited scope, the modern technology means to provide information faster, cheaper, easier covering larger scope. skills besides creativity and lateral thinking with. flexibility." You need to market your talents/skills and attitude. Self-awareness is necessary in promoting yourself and your product. Networking will help you to a great extent.

Keywords: Information Technology, Development,Agri-entrepreneurship.

Introduction

It has become a widely-recognized fact that entrepreneurs and information technology have become the backbone of the world economy. The increasing penetration of IT in society and in most of industries/businesses, as well as the joining forces of entrepreneurship and innovation in the economy, reinforce the need for a leading and authoritative research handbook to disseminate leading edge findings about entrepreneurship and innovation in the context of IT from an international perspective. Governments worldwide recognize the importance of small businesses and their contribution to economic growth, social cohesion, and employment, regional and local development. As globalization and technological change reduce the importance of economies of scale in many activities, the potential contribution of smaller firms is enhanced. However, many of the traditional problems facing small businesses - lack of financing, difficulties in exploiting technology, constrained managerial capabilities, low productivity, and regulatory burdens - become more acute in a globalised environment.

Entrepreneurship plays a crucial role within the innovation system. The pandemic has as emerged more importance to digital entrepreneurship. Digital entrepreneurship modifies the working culture with the application of existing policies and influences the labor market, employment quality, and skill development. The processing, production, transportation, and sharing of various statistical data can be transferred with the support of digitalization. The connecting gap between virtual systems and real-world digital business provides numerous business opportunities to gain customers for their ventures by offering new and innovative products and services which promotes low cost by generating more revenue. Digital Rupee is a new form of money, which will give easier access, is less expensive, and makes payment faster. This article focused on describing the concept and identification of digital entrepreneurs and their contribution to the digitalization and economy. Digital entrepreneurs mix business, market knowledge, and communities technological know- how to change typical commercial enterprise practices through digitalization.Policymakers

around the world have initiated a variety of policies to foster entrepreneurship in their countries (Park &Bae, 2004). Encouraging entrepreneurship is also high on the agenda of governments in developing countries like India. This is because entrepreneurs are being viewed as "the catalysts of growth, marrying capital, innovation and skills". The imperative role of entrepreneurship stands out at the present time of innovative change, and a means to fostering a climate to help the dynamism in firm creation. This is particularly in emerging and developing economies, where conditions for entrepreneurship are generally still insufficient.

Over the last decade, the importance of the entrepreneur as the driver of economic growth has received increasing attention. According to Leibenstein (1995) there are two simultaneous steps in the process of economic development: economic growth and market transformation. In order for a country to increase its per capita income, it must have a "shift from less productive to more productive techniques per worker". This shift is the process of market transformation, and it can be manifested in the creation of new goods, new skills, and new markets. IN this respect, entrepreneurship is the driving force behind both growth and transformation. Without entrepreneurs there would be no new innovation or creative imitation in the marketplace; hence, the transformation to new production methods and goods in the country would not take place. As entrepreneurs transform the market, they not only provide new goods and services to the domestic market, but also provide a new source of employment to the economy (Praag, 1995). Therefore, entrepreneurship is a necessary ingredient in the process of economic development; it both serves as the catalyst for market transformation and provides new opportunities for economic growth, employment, and increased per capita income.

Objective of the Study

The objectives of the study are:

1. To study the concept of the Information TechnologyIn Agri entrepreneurs
2. To study benefits or importance of IT in Agribusiness entrepreneurs
3. To identify the problems faced by Agri-entrepreneurs in IT

Research Methodology

The current study uses secondary data the secondary data have been collected from the Reports, Government Publications, Seminar Volumes, Books and Journals and dailies and electronic media. Library research has been engaged for the purpose of a review of relevant literature into the Article.

Review of Litrature

Prof D.S.Grewal(2014): IT Industry has countless opportunities; only a few are described above. There are many other such opportunities like IT Driven Financial services, IT appliances which could be exploited well. A successful entrepreneur tracks emerging needs, and identifies opportunities that throw up value. A good idea is the pivot around which a successful venture can be structured. Fang Zhao(2018): Information Technology Entrepreneurship and Innovation presents current studies on the nature, process and practice of entrepreneurship and innovation in the development, implementation, and application of information technology worldwide, as well as providing academics, entrepreneurs, managers, and practitioners with up-to-date, comprehensive, and rigorous research-based articles on the formation and implementation of effective strategies and business plans. Dr. Deepak Chandran(2021): The future for IT systems in agriculture holds much promise. Technology is constantly improving to solve human problems more easily. Innovation in technology to solve specific problems is driven by market demand. Adoption of IT in agriculture seems to be on the rise as agribusiness managers increasingly discover the need and consequently see the value of these technologies. This will serve to drive the demand for these technologies and therefore stimulate new innovation and decrease costs. As these technologies progress and our understanding of human decision-making increases then we should see a gradual shift from decision support systems to decision replacement systems.

Le Nguyen Doan Khoi(2022): The study has revealed that, young entrepreneurs in Vietnam are also using this new technology to improve their businesses. Most of them are using email and Internet services. Email services are used to communicate mostly

with business partners and friends. Internet services are also being used to search for

product related information. The study has further shown that young, who are running garment related businesses, are searching for new designs for young clothes through the Internet.

Importance of Technology in Entrepreneurship

1. **Communication**: good communication is necessary to allow efficient flow of information in a business. Technology provides multiple channels for businesses to communicate both internally and externally. Whether it's setting up virtual workspaces where employees can interact and develop ideas, or connecting to international businesses through the use of video conferencing, technology can be used as an outlet which allows businesses to collect feedback from their customers, which can used to improve or alter a product to suit the needs of the customers better.
2. **Research and Development**: through the use of technology, businesses can research the market through the use of secondary data. This is extremely useful as it provides businesses with in-depth knowledge about markets before penetrating them. Along with secondary research, businesses can use technology to conduct primary research in addition to using online surveys and customer feedback.
3. **Web Based Advertising**: one the most beneficial use of technology is advertising to millions of people around the globe just at a click of a button. Web based advertising consists of websites and social media. Websites can be built using tools such as Word Press or Square Space or professional web developers can be hired to create them. Unlike websites, social media accounts are very easy to build for your business and provide exposure on a wide variety of platforms such as Face book, Twitter and YouTube.

Entruprenuer Opertunities in It

Entrepreneurial Opportunities in IT, IT spending over the past three years could have made the Indian Economy more efficient in its use of resources. Y2K successfully behind it, this industry is extremely dynamic and still attracts the best talent in the country. Exciting avenues are being identified both globally and within the country. With the advent of the electronic

era, IT has gained further prominence. Though the bust in the portal boom is a dampener of sorts, Net based initiatives linking

1. Business to Consumers (B2C)
2. Business to Business (B2B), and
3. Government to Consumers (G2C),

VoIP, ASP are being tested out constantly and offer good potential to sound concepts. Some of the entrepreneurial options in IT functions include- e-commerce, eMarketing, eGovernance, E-education, Tele-working, web security; IT enabled services-call centres, CRM, data digitization /GIS; DSP; technical writing etc. These opportunities are discussed in succeeding paragraphs. E-COMMERCE: E-commerce has perhaps received more attention than any other field in recent times as it uses technology to streamline business models, creating savings and increasing efficiency. Most IT companies are focusing on building capabilities in this field. NASSCOM. E-commerce is all about consumers conducting basic transactions on the Web-this could be business-to-business (B2B) or business-to-consumers (B2C). Example of B2C is amazon.com that sells books, music and films to people. B2B is a revolutionary order.

Challenges Faced In Agribusiness In It

Information technology (IT) systems enable managers to overcome these obstacles to a large extent. With the help of these systems more information can be gathered with less effort and it can be interpreted with the combined knowledge of specialists in different fields. The interpretation of the information can be done in seconds. This puts a very powerful tool in the hands of the agribusiness manager to use in decision making.Gathering the information presents the real challenge in optimal decision making. It takes time, money and effort to accurately gather and process information and therefore it represents a cost which must be accounted for. In agriculture it is difficult and in some cases even impossible, to measure certain parameters. Other parameters are time consuming to measure or create a large burden on the people involved. In other words, the cost of gathering and processing the required information may outweigh the benefits of having it. Another challenge in the gathering

of information is that an information overload may result. Trying to interpret too much information often results in poorer decision making. Despite the lack of information, agribusinesses are also subject to a relatively large administrative burden. This burden is created by the various accreditations that agribusinesses must comply with as well as certain statutory requirements. Also, the larger an agribusiness becomes, the heavier this administrative burden will be. Therefore the ability for an agribusiness to cope with its administrative burden will impact not only its profitability, but also its growth prospects

Need of the Study

In the era of globalization, where technology is rapidly developing, this causes entrepreneurs to
inevitably have to take part in its utilization. They realize the importance of the Internet as a means to participate in global markets. As a result, small, large, and medium industries compete to offer their superior products and services, to Internet users who come from different backgrounds and groups.

Some of the roles and influence of the Internet on entrepreneurship development in Indonesia are first, namely to increase customer satisfaction where a relationship or closeness between the entrepreneur and his consumers will be established so that entrepreneurs In the era of globalization, where technology is rapidly developing, this causes entrepreneurs to inevitably have to take part in its utilization. They realize the importance of the Internet as a means to participate in global markets. As a result, small, large, and medium industries compete to offer their superior products and services, to Internet users who come from different backgrounds and groups. Some of the roles and influence of the Internet on entrepreneurship development in Indonesia are first, namely to increase customer satisfaction where a relationship or closeness between the entrepreneur and his consumers will be established so that entrepreneurs

Information Technology in Entrepreneurship program should be able to Produce, Business Models and Business Plans for any IT venture that can scale from local to global markets Choose the right business and technology partners across geographic boundaries and from different Domains to complement own solutions to deliver better market fit.Combine the appropriate tools, techniques, frameworks, content, and platforms for business, technology, and human-centered design to launch and sustain viable of IT ventures Manage diverse groups or teams to achieve desired goals within the context of a local or global IT venture Defend the importance and need for intellectual property for technology-based business proposals Formulate the right leadership approaches to apply, depending on situations and within the context of IT ventures and operations.

Conclusion

IT and business performance is insignificant. However, young entrepreneurs covered under the study have acknowledged the fact by using IT services they have been able to increase their sales and the consequent profits. It was also acknowledged that business operations have been quit efficient as communication with business partners and customers has been conveniently and considerably very easily and efficient. The major problems, which were mentioned in this study, were lack of knowledge and skills and financial resources. To enhance young entrepreneur's capacity to become full members of the new economy, the following aspects are relevant. The government can promote business and entrepreneurial prospects for young in the information economy by offering financial capital and micro finance to young entrepreneurs in order for them to exploit fully IT opportunities.

References

1. https://www.abacademies.org/articles/the-impact-of-information-technology-in-enhancing-competitive-capability-of-young-entrepreneurs-13610.html
2. Entrepreneurship in Information Technology Col. Prof D.S.Grewal Progress In Science inEngineeringResearchJournalISSN2347-6680(E)https://shop.tarjomeplus.com/UploadFileEn/TPLUS_EN_1361.pdf
3. https://www.epicentreuwindsor.ca/the-importance-of-technology-in-entrepreneurshipFang ZhaoPublisher:Information Science Reference - Imprint of: IGI Publishing701 E. Chocolate Avenue, Suite 20HersheyPA ISBN:978-1-59904-901-4,Published:01May2008

4. https://www.researchgate.net/publication/337401861_Role_of_Information_Technology_on_Entrepreneurship
5. Dr. Deepak Chandran Role of Information Technology in Agri-Business Vol.1 Issue-12,AUGUST2021(eISSN:25828223)https://justagriculture.in/files/newsletter/2021/august/55.%20Role%20of%20Information%20Technology%20in%20AgriBusiness.pdf

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

The Role of Artificial Intelligence in Developing Employability Skills: Opportunities and Challenges

Dr. Mahantesh M Kuri[1], Mr. Gangadhar S. Mamadapur[2]
[1]Assistant Professor, PG Dept. of Business Administration, Rani Channamma University, Belagavi, Karnataka
[2]Research Scholar, Assistant Professor, BLDE's A. S. Patil College of Commerce (Autonomous), MBA Programme, B. M. Patil Road, Vijayapur, Karnataka
Corresponding Author- Dr. Mahantesh M Kuri
DOI-10.5281/zenodo.8036243

Abstract:

Integrating Artificial Intelligence (AI) into the workforce has transformed employment, creating new opportunities for businesses and job seekers. With the rise of AI, there is a growing need to understand its potential impact on developing employability skills. This research paper explores the role of AI in developing employability skills and identifies the opportunities and challenges that come with this integration. Using a systematic literature review, this study analyses existing research on the topic and identifies key trends, issues, and recommendations for future research. The findings indicate that AI can support the development of employability skills by providing personalised learning experiences, improving the efficiency of training processes, and enabling the analysis of large amounts of data to inform skill development. However, challenges include the potential displacement of jobs, algorithm bias, and the need for upskilling and reskilling to keep up with technological advancements. To overcome these challenges, this paper recommends the integration of AI in a way that prioritises the ethical and responsible use of technology, collaboration between AI and human workers, and investment in training and development programs. Overall, this paper highlights the need for a balanced and strategic approach to integrating AI in employability skills development that maximises opportunities while minimising challenges.

Keywords: Artificial Intelligence, Employability Skills, Opportunities, Challenges, Skill Development, Machine Learning, Job Market, Training, Automation, Future of Work

Introduction

The world of work is rapidly evolving due to advancements in technology. Artificial Intelligence (AI) is one of the most prominent technological developments significantly impacting work performance. AI is a branch of computer science that enables machines to perform tasks that typically require human intelligence, such as learning, reasoning, and decision-making. As AI technology continues to evolve, it is increasingly being used in the workplace to automate repetitive and time-consuming tasks, which has the potential to create new job opportunities and change the nature of work. One area in which AI is expected to significantly impact is the development of employability skills. Employability skills are essential for individuals to thrive in the modern job market, and they include a range of competencies such as communication, critical thinking, problem-solving, teamwork, and leadership. AI technology in training and education can provide new opportunities for individuals to develop these skills and enhance their employability.

However, using AI technology to develop employability skills also presents several challenges. One of the most significant challenges is the potential for AI to replace human workers, leading to job displacement and unemployment. Additionally, there are concerns about the quality of AI-based training and education and the potential for bias in AI algorithms. Therefore, this research paper aims to explore the role of AI in developing employability skills, including the opportunities and challenges associated with its use. The report will examine the current

state of AI technology, its application in developing employability skills, and its impact on the job market and the future of work. Ultimately, the paper aims to provide insights into how AI can effectively enhance employability skills and mitigate the potential risks associated with its use.

Review of Literature

Artificial Intelligence (AI) has become a critical area of research in recent years, and its potential impact on the job market has been a topic of interest for many scholars. Several studies have explored the role of AI in developing employability skills, highlighting both the opportunities and challenges associated with its use.

One of the primary opportunities presented by AI in developing employability skills is the potential for personalised learning. Personalised learning involves tailoring learning experiences to the needs and preferences of individual learners. AI-based learning systems can analyse learner data to identify areas of strength and weakness and provide personalised feedback and support. This approach has been shown to improve learning outcomes and enhance the development of employability skills (1).

Another opportunity presented by AI in developing employability skills is the potential for automation. Automation involves using machines and AI technology to perform tasks previously done by humans. This approach can free human workers to focus on tasks requiring human skills, such as creativity, problem-solving, and communication. This approach has led to increased productivity and job satisfaction (2).

However, there are also several challenges associated with the use of AI in developing employability skills. One of the most significant challenges is the potential for bias in AI algorithms. AI systems are only as good as the data they are trained on, and if the data is biased, the AI system will also be biased. This can negatively affect individuals not in the majority group in the training data (3).

Another challenge is the potential for job displacement. AI technology can replace human workers in many industries as it becomes more sophisticated. This can lead to job displacement and unemployment, particularly for workers in low-skilled jobs (4).

Despite these challenges, the potential for AI to enhance employability skills and improve job outcomes is significant. By addressing the challenges associated with AI, such as bias and job displacement, we can harness the power of this technology to provide new opportunities for individuals to develop their employability skills and succeed in the modern job market.

Objectives

The main objective of this research paper is to explore the role of Artificial Intelligence (AI) in developing employability skills, including the opportunities and challenges associated with its use. To achieve this objective, the following specific objectives will be pursued:

1. To examine the current state of AI technology and its application in developing employability skills.
2. To identify the employability skills that can be developed through AI technology and the potential impact of AI-based training and education on the job market.
3. To assess the potential risks associated with using AI in developing employability skills, including job displacement and the impact on workers in low-skilled jobs.
4. To provide insights into how AI can be used effectively to enhance employability skills and mitigate the potential risks associated with its use.

By achieving these objectives, this research paper aims to contribute to a better understanding of the role of AI in developing employability skills and provide insights into how this technology can be harnessed to enhance job outcomes and support individuals in navigating the changing world of work.

Methodology

Research Design:

This research paper will adopt a mixed-methods research design to examine the role of Artificial Intelligence (AI) in developing employability skills and the opportunities and challenges associated with its use. The study will involve quantitative and qualitative data collection and analysis to comprehensively understand the topic.

Scope:

The scope of this research paper is to explore the role of AI in developing employability skills, including the potential

benefits and risks associated with its use. The study will focus on individuals who have undergone AI-based training and education for employability skills development.

Sampling Technique:

The sample for this study will be selected using a stratified random sampling technique. The sample will be stratified based on industry and demographic factors to ensure that individuals from diverse backgrounds and industries are represented.

Sample Size:

The sample size for this study will be 300 individuals who have undergone AI-based training and education for employability skills development. This sample size is deemed appropriate for the research design and will provide sufficient data for analysis.

Data Collection Tools:

Quantitative data will be collected using a self-administered survey questionnaire. The questionnaire will be designed to measure the effectiveness of AI-based training and education in developing employability skills, including the quality of the training and the potential for bias in AI algorithms. The survey will also collect demographic information and data on the respondents' employment status and career outcomes.

Qualitative data will be collected through in-depth interviews with a subset of the survey respondents. The interviews will be designed to explore the respondents' experiences with AI-based training and education, including their perceptions of its effectiveness, challenges, and the potential risks associated with its use.

Data Analysis:

Quantitative data will be analysed using descriptive and inferential statistics, including means, standard deviations, frequency distributions, correlation analysis, and regression analysis. Qualitative data will be analysed using a thematic analysis approach, where the interview transcripts will be coded and categorised based on recurring themes and patterns.

Limitations:

One limitation of this study is the potential for selection bias, as only individuals who have undergone AI-based training and education for employability skills development will be included in the sample. Additionally, the study may not be generalisable to individuals without AI-based training and education or those from different geographic locations or cultural backgrounds. Furthermore, the study may be limited by the self-reported nature of the data, which may be subject to social desirability bias.

Result and Discussion

Questions	Valid	Mode	Median	Mean	Std. Deviation	Skewness	Kurtosis
Level of awareness about Artificial Intelligence:	114	2	2	2.263	0.951	0.203	-0.902
Examples of AI applications	114	2	2	1.833	0.763	1.143	2.516
AI impact on the job market in the future.	114	2	2	1.947	0.663	0.058	-0.689

Analysis of level of awareness about Artificial Intelligence: The mode, median, and mean values for the level of awareness about AI are all 2, indicating that the most common response or the central tendency of the data is "2". This suggests that the majority of respondents have a moderate level of awareness about AI. The standard deviation of 0.951 indicates a relatively low dispersion of data points around the mean. The skewness value of 0.203 suggests a slightly positive skew, indicating that the distribution of responses may be slightly skewed to the right. The negative kurtosis

value (-0.902) suggests that the distribution is slightly less peaked and less heavy-tailed compared to a normal distribution.

Analysis of examples of AI applications: The mode, median, and mean values for examples of AI applications are also centered around "2", indicating that the most common response or central tendency is "2". This suggests that the majority of respondents provided a moderate number of examples of AI applications. The mean value of 1.833 is slightly lower than the median, indicating a slight negative skew in the distribution. The positive skewness value of 1.143 confirms this and suggests that the distribution is skewed to the left. The positive kurtosis value of 2.516 indicates a distribution that is more peaked and has heavier tails compared to a normal distribution.

Analysis of AI impact on the job market in the future: Similar to the previous variables, the mode, median, and mean values for the perceived impact of AI on the job market in the future are centered around "2", suggesting that the most common response or central tendency is "2". This indicates that the majority of respondents perceive a moderate impact of AI on the job market in the future. The standard deviation of 0.663 indicates a relatively low dispersion of responses around the mean. The skewness value of 0.058 suggests a nearly symmetrical distribution, while the negative kurtosis value of -0.689 suggests a distribution that is slightly less peaked and less heavy-tailed compared to a normal distribution.

Questions	Valid	Mode	Median	Mean	Std. Deviation	Skewness	Kurtosis
AI technology in employability skills	114	2	2	1.947	0.663	0.058	-0.689
AI in industry in developing employability skills	114	1	1	1.781	1.355	1.798	2.2
AI-based training in developing employability skills	114	1	2	1.658	0.689	0.733	0.073
AI technology enhance the quality of education for employability skills	114	2	2	1.868	0.672	0.695	1.311

Analysis of AI technology in employability skills: The mode, median, and mean values for AI technology in employability skills are all centered around "2". This suggests that the most common response or central tendency is "2", indicating that the majority of respondents believe that AI technology has a moderate impact on employability skills. The mean value of 1.947 is close to the median, indicating a nearly symmetrical distribution. The standard deviation of 0.663 indicates a relatively low dispersion of responses around the mean. The skewness value of 0.058 suggests a nearly symmetrical distribution, while the negative kurtosis value of -0.689 suggests a distribution that is slightly less peaked and less heavy-tailed compared to a normal distribution.

Analysis of AI in industry in developing employability skills: The mode, median, and mean values for AI in industry in developing employability skills are centered around "1". This suggests that the most common response or central tendency is "1", indicating that the majority of respondents believe that AI has a low impact on developing employability skills in the

industry. The mean value of 1.781 is lower than the median, indicating a slight negative skew in the distribution. The positive skewness value of 1.798 confirms this and suggests that the distribution is skewed to the left. The positive kurtosis value of 2.2 indicates a distribution that is more peaked and has heavier tails compared to a normal distribution.

Analysis of AI-based training in developing employability skills: The mode value for AI-based training in developing employability skills is "1", indicating that the most common response is "1", suggesting that the majority of respondents believe that AI-based training has a low impact on developing employability skills. The median value of 2 suggests that there is some variability in the responses. The mean value of 1.658 is lower than both the mode and median, indicating a slight negative skew in the distribution. The positive skewness value of 0.733 confirms this and suggests that the distribution is slightly skewed to the left. The kurtosis value of 0.073 indicates a distribution that is close to a normal distribution in terms of peakedness and tail weight.

Analysis of AI technology enhance the quality of education for employability skills: The mode, median, and mean values for the perception of AI technology enhancing the quality of education for employability skills are all centered around "2". This suggests that the most common response or central tendency is "2", indicating that the majority of respondents believe that AI technology has a moderate impact on enhancing the quality of education for employability skills. The mean value of 1.868 is close to the median, indicating a nearly symmetrical distribution. The standard deviation of 0.672 indicates a relatively low dispersion of responses around the mean. The skewness value of 0.695 suggests a nearly symmetrical distribution, while the positive kurtosis value of 1.311 indicates a distribution that is slightly more peaked and has heavier tails compared to a normal distribution.

Question	Valid	Mode	Median	Mean	Std. Deviation	Skewness	Kurtosis
Employability skills developed through AI	114	2	3	3.421	2.017	0.604	-0.703
Employability skills important current and future job market	114	1	3	3.167	2.048	0.589	-0.789
AI enhance employability skills	114	1	2	2.447	1.205	0.157	-1.424
Risks of AI developing employability skills	114	1	3	2.36	1.304	0.35	-1.096
AI technology will job displacement	114	2	2	2.018	0.862	0.388	-0.683

Analysis of Employability skills developed through AI: The mode value for employability skills developed through AI is "2", indicating that it is the most common response among the participants. The median value of 3 suggests that the majority of respondents perceive a higher level of employability skills being developed through AI. The mean value of 3.421 is higher than both the mode and median, indicating a

slight positive skew in the distribution. The positive skewness value of 0.604 confirms this and suggests that the distribution is slightly skewed to the right. The negative kurtosis value of -0.703 suggests a distribution that is slightly less peaked and less heavy-tailed compared to a normal distribution.

Analysis of Employability skills important current and future job market: The mode value for the importance of employability skills in the current and future job market is "1", indicating that it is the most common response among the participants. The median value of 3 suggests that the majority of respondents perceive employability skills as highly important. The mean value of 3.167 is slightly lower than the median, indicating a slight negative skew in the distribution. The positive skewness value of 0.589 confirms this and suggests that the distribution is skewed to the left. The negative kurtosis value of -0.789 suggests a distribution that is slightly less peaked and less heavy-tailed compared to a normal distribution.

Analysis of AI enhance employability skills: The mode value for the perception of AI enhancing employability skills is "1", indicating that it is the most common response among the participants. The median value of 2 suggests that the majority of respondents perceive a moderate level of AI's impact on enhancing employability skills. The mean value of 2.447 is higher than both the mode and median, indicating a slight positive skew in the distribution. The positive skewness value of 0.157 confirms this and suggests that the distribution is slightly skewed to the right. The negative kurtosis value of -1.424 suggests a distribution that is less peaked and has lighter tails compared to a normal distribution.

Analysis of Risks of AI developing employability skills: The mode value for the risks of AI developing employability skills is "1", indicating that it is the most common response among the participants. The median value of 3 suggests that the majority of respondents perceive a moderate level of risk associated with AI developing employability skills. The mean value of 2.36 is lower than both the mode and median, indicating a slight negative skew in the distribution. The positive skewness value of 0.35 confirms this and suggests that the distribution is slightly skewed to the right. The negative kurtosis value of -1.096 suggests a distribution that is less peaked and has lighter tails compared to a normal distribution.

Analysis AI technology will job displacement: The mode value for the perception of AI technology causing job displacement is "2", indicating that it is the most common response among the participants. The median value of 2 suggests that the majority of respondents perceive a moderate level of job displacement due to AI technology. The mean value of 2.018 is close to the median, indicating a nearly symmetrical distribution. The standard deviation of 0.862 indicates a relatively low dispersion of responses around the mean. The positive skewness value of 0.388 suggests a nearly symmetrical distribution, while the negative kurtosis value of -0.683 suggests a distribution that is slightly less peaked and less heavy-tailed compared to a normal distribution.

Summary and Conclusion

In summary, the analysis indicates that the majority of respondents have a moderate level of awareness about AI, perceive a moderate impact of AI on employability skills and the job market, and provide a moderate number of examples of AI applications. The data shows consistent perceptions among participants, with a low dispersion of responses and slight skewness in certain variables. The findings also suggest that while some participants perceive a higher impact of AI technology in the industry and AI-based training on employability skills, the majority believe in a low impact. These insights contribute to our understanding of how individuals perceive the role of AI in employability skills development and its potential implications for the job market.

References

1. Alzaghoul, E., & Al-Madi, N. (2020). The Impact of Artificial Intelligence on Employability Skills Development: A Systematic Review. Education Sciences, 10(10), 279. https://doi.org/10.3390/educsci10100279
2. Angrave, D., Charlwood, A., & Wood, S. (2016). Computer Says No: Investigating the Relationship between Technological Change, Skill-Biased Task Input and the Employment of Older Workers. Work,

Employment and Society, 30(2), 309-328. https://doi.org/10.1177/095001701557797 7

3. Brynjolfsson, E., & McAfee, A. (2014). The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies. W. W. Norton & Company.
4. Frey, C. B., & Osborne, M. A. (2017). The Future of Employment: How Susceptible Are Jobs to Computerization? Technological Forecasting and Social Change, 114, 254-280. https://doi.org/10.1016/j.techfore.2016.08.019
5. Kumar, S., Mahto, R., & Panthi, B. (2021). Artificial Intelligence and Employability Skills Development: A Conceptual Framework. In S. Singh, A. Chandra, K. Sharma, M. Kumar, & R. Panthi (Eds.), Proceedings of the 2nd International Conference on Computing, Communication, and Cybersecurity (IC4S 2021) (pp. 17-27). Springer. https://doi.org/10.1007/978-981-15-9330-3_2
6. Leischnig, A., & Sauermann, H. (2019). Digital Skills and the Future of Work: Empirical Evidence from the Online Labour Market. Technological Forecasting and Social Change, 146, 931-942. https://doi.org/10.1016/j.techfore.2019.05.003
7. Ngai, E. W. T., & Wat, F. K. T. (2006). Human Factors and Attitudes towards Knowledge Sharing. Behavioral & Information Technology, 25(5), 369-381. https://doi.org/10.1080/01449290600640612
8. OECD. (2019). OECD Skills Outlook 2019: Thriving in a Digital World. OECD Publishing. https://doi.org/10.1787/df80bc12-en
9. Soltani, H., Abdul Halim, N., & Mohamad Noor, N. (2021). The Influence of Artificial Intelligence on Employability Skills: A Conceptual Model. IEEE Access, 9, 17648-17659. https://doi.org/10.1109/ACCESS.2021.3051153
10. World Economic Forum. (2018). The Future of Jobs Report 2018. World Economic Forum. https://www.weforum.org/reports/the-future-of-jobs-report-2018

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Quality Testing of Food Grains Using Digital Image Processing Techniques

Jyoti .Y. Kulkarni
Asst. Professor, Department of Computer Science, Govt. First Grade College, Bijapur, Karnataka,India.
Corresponding Author- Jyoti .Y. Kulkarni
Email: jyotirajju@gmail.com
DOI-10.5281/zenodo.8036265

Abstract:
Grain production is the principal agricultural crop for our country. Farmers pay close attention to yield while the crop is still in the ground, but once the grain has been processed and sold, quality takes over as the primary determinant of its viability. These grains contain a variety of impurities, such as stones, weed seeds, chaff, damaged seeds, etc. Today, scientific methods are used to identify grain seed variations and quality. We suggested a grain classification system based on machine learning and image processing algorithms to distinguish between distinct types of grains and assess the purity of grains using image processing techniques based on several factors like particle size and form.

Keywords: Digital Image Processing, Machine Learning, Grain Classification.

Introduction:

The most important food that a sizable population in Asian nations consumes is grains. The Poaceae family of plants includes rice. Around the world, rice is grown in a number of different regions. The second-largest producer of rice in the world is India. With an increase in consumption, there is a rising demand for high-quality food grains. In regional industries, food grains are distinguished using manual categorization techniques based on regional geometric traits. The proposed study uses a technique for recording digital photos of food grains, analysing them, and extracting important data. The type of cereal grain is determined by examining morphological traits. Image processing techniques are applied to the acquired image to extract various information.

The food granules are evaluated by a neural network after picture processing. The results are acquired by putting the rice grains through a series of tests. Using image processing and neural network technologies. Images for rice are captured here using a webcam. MATLAB is used to conduct image pre-processing techniques such as Thresholding, segmentatione extraction on the obtained image. For training purposes, the features are supplied to the neural network. The trained network is then utilized to determine the quality of the unknown contaminants. The grading system was created to ensure product quality consistency.

Objective:

The objective of the project is to study the food grains using different image processing techniques. Kernel based technique, Neural Network Technique, Phase based technique and propose the quality of the food or food grain. This is helpful in judging the type of grains, grain classification and other food processing techniques.

Scope of the Study:

The application potential of image processing techniques to the food industry has long been recognized. The food industry ranks among the top ten industries using image processing techniques, which have been proven successful for the objective and non-destructive evaluation of several food products. The core techniques in computer vision is always related to image analysis and processing, which can lead to segmentation, quantification and classification of images and objects of interest within images. Computer vision has also proven successful for applications like online measurement and classification of several food products ranging from complex vision

guided robotic routine inspection to the complex vision guided robotic control.

In the food industry, some quality evaluation is still performed manually by trained inspectors, which is tedious, laborious, costly and inherently unreliable due to its subjective nature, increased demands for objectivity, consistency and efficiency have necessitated the introduction of computer-based image processing techniques. Recently, computer vision employing image processing techniques has been developed rapidly which can quantitatively characterize complex size, shape, color and texture properties of foods objects. Image processing systems play a more and more important role in the food quality evaluation by maintaining accuracy and consistency while eliminating the subjectivity of manual inspections. They offer flexibility in application and can be reasonable substitutes for the human vision decision-making process.

Therefore in order to develop an automated system for food quality evaluation, Image processing techniques are often combined with mechanical and instrumental devices to replace human manipulative effort in the performance of a given process. In such a system, the image processing system is the centre, which controls the operation of the machinery. For example, an automated system for apple surface defect detection was created through digital image processing methods. The apple were fed to the machine vision system for the defect with the feeding and uniform spacing conveyors and graded with the sorting unit.

Texture Features Extraction:

Texture features are broadly classified as

1. Gray level Texture features
2. Color Texture features.

Color texture feature includes the invariant color histogram, correleogram, and various texture maps of various color space like the skin map used for fruits or human face or food objects etc. Generally color texture model is used where the image blocks presents various different color blocks. As the current study is encentric around almost unique and distinguishable color space, color based features are not of best use. This is because the color based texture has a high feature vector overhead.

The other feature model is the gray level features. We convert the images into gray scale image and extract the gray scale textures. Histogram, GLCM, Wavelet based features are some of the gray level features. Wavelet based features are considered here.

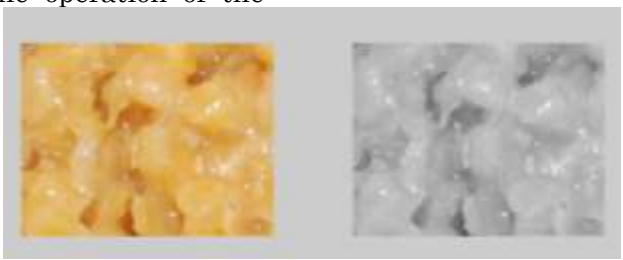


Figure: An image of Dal grains boiled at 100' and it's corresponding gray scale image.

Once the image is converted to gray level, a wavelet decomposition with haar wavelet will be carried out at the images and subsequent features will be extracted.

System Analysis:

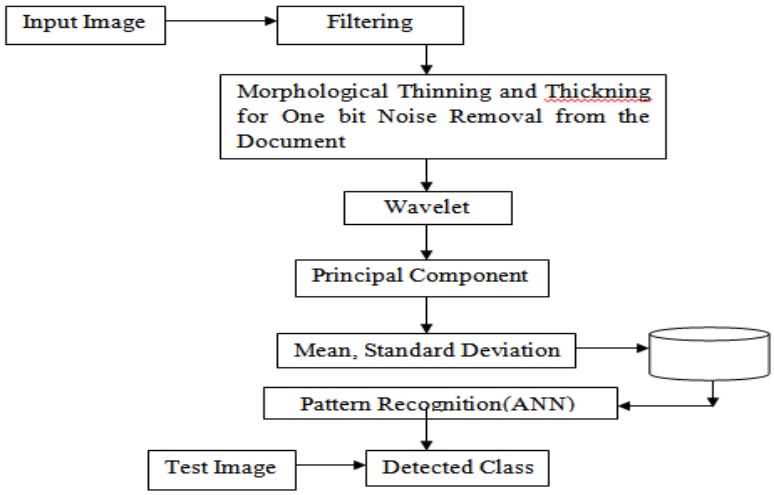
There are many different methods suggested for various types of object classification and recognition. The work includes usage of different pattern types to using different classifiers. There is no specific methodology proposed in "study of boiled Indian food grains or objects". Hence, it can be assumed that various generalized methods are available for image classification, but no method corresponding to the current work. Hence, we will discuss about the features and available classifiers here. Gray Label Co-Occurrence Matrix(GLCM) is one of the most common gray label features that is been in use. These features presents the probability of the occurrence of one color w.r.t other colors. This is significantly helpful if the image has different color distribution. HSV based color models and color masks or color maps are also used as feature vectors. "Average Texture" of the boiled object image is sufficient for it's classification, Hence entire color model or vector space is not required. Histogram based features are not invariant in nature and are quite sensitive to light effects.

Similarly many different classifiers are also available for classification. It includes statistical classifiers like the Gaussian or Nearest Mean classifier, Support Vector Machines, Fuzzy logic. All the above classifiers are considered as single plane or layer classifiers where the query domain is mapped linearly to the class that the image belongs to. Wavelet decomposed images presents good texture representation of the images and are invariant to rotation or light effects. Therefore sub band images are good representation for classification. Once the image is decomposed into sub band images, results are H,A,V and D components. These in themselves are gray images. The average map of each region gives the average spectrum represented by that spectra. Therefore combining the statistical values of the sub band images will provide a full representation of the image class. Hence in our work, we have decomposed the image into sub band images and extracted mean and standard deviation from each bands. We combine them to form our feature matrix. Neural Network is a Multi layer classifier where the features are mapped in a vector plane. Therefore rate of correct classification is always very high in the case of neural networks. Hence we have used neural network as our classifiers.

Generally the result of classification depends to a great extent on the number of images given to the system for the training purpose. Hence, we considered ten images each from each boiling effect class of each food objects. For example, there will be ten images each of boiled grains of 45',75',100' and 120'. And there will be a set comprising of ten images randomly chosen from each of these class.

System Design:

Block Diagram:



Conclusion:

The complexity of the grading problem was significantly decreased through image processing and careful selection of the species that were taken into consideration in this work for extracting features from rice grains. Grading rice particles using a neural network is successful. The created neural network can also be used to grade different grains and food items. When there is no granule overlap, the probabilistic based Neural Network can classify well, but when there is granule overlap, it can categorise the test datasets with 90 percent accuracy. We worked on the area detection on the rice grain and created an image processing system to grade the rice based on length, width, area, and area of chalky. Based on the findings, it can be said that some rice are better based on length, some are better based on breadth, and some may be considered to be of good quality based on area and area of the chalky. All of the traits need not, however, be represented in the rice grain. For further verification of our methods, additional data can be collected. The amount of moisture in a rice grain can be added to a grade to indicate the overall quality of the rice for more research.

References:

1. A.Beatty, R.G. Gosine, & C.W. de Silva. (1993). Recent Developments In The Application Of Computer Vision For Automated Herring Roe Assessment, in

the *proceedings of IEEE Pacific Rim Conference on Communications Computers and Signal Processing*, pp 698-701.

2. B.G. Hu, R.G. Gosine, & C.W.de Silva. (1995). Classifier Design for Computer Grading System for Food Processing**.** *IEEE International Conference on Systems, Man and Cybernetics*, Vol.1, pp.730-735.
3. B.S. Anami, D.G. Savakar, Aziz Makandar & P. H. Unki. (2005). A Neural Network Model for Classification of Bulk Grain Samples Based on Color and Texture. *Proceedings of the International Conference on Cognition and Recognition*. P.E.S College of Engineering Manday, pp 359-368.
4. Bin Zhu, Lu Jiang, Yaguang Luo & Yang Tao. ((2007). Gabour feature-based apple quality inspection using kernel principal component analysis. *Journal of Food Engineering*. Vol. 81, Issue 4, pp 741-749.
5. Chang Y. C., Reid J. F. (1996). Characterization of a color vision system. *Transactions of the ASAE(USA).* vol. 39 (1), pp 263-273.
6. Chen. Y-R. (1989). Applying Knowledge Based expert System to meat grading, *IEEE Conference Proceedings of the AI Systems in Government Conference of the Annual*, pp-120-123.
7. Fernandez C, Suardiaz J, Jimenez C, Navarao P. J, & Toledo A, Iborra A. (2002). Automated Visual Inspection System for the Classification of Preserved Vegetables, *in Proc. of the IEEE International Symposium*, Volume1, pp 265-269.
8. Cheng-Jin Du, Da-Wen. (2005). Pizza sauce spread classification using color vision and support vector machines. *Journal of Food Engineering*. Vol. 66, Issue 2, 2005, Page 137-145.
9. Patel D, Hannah I & Davies E R. (1994). Foreign Object Detection via Texture Analysis. Proc of the 12th IAPR international conference E., Volume 1 pp (586-588).
10. Gary Kay, Gerhard de Jager. (1992). A Versatile Color System Capable of Fruit Sorting and Accurate Object Classification , proceedings of the 1992 South African Symposium COMSIG, pp 145-148.

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Usage of Digi Farming Mobile Applications among Young Farmers: A Case study of Vijayapura

Ms. Philomina[1], Dr. TahmeenaNigar Sultana[2]
[1]Research Scholars, Department of Journalism and Mass Communication
Karnataka State Akkamahadevi Women's University, Vijayapura
[2]Assistant Professor, Department of Journalism and Mass Communication
Karnataka State Akkamahadevi Women's University, Vijayapura
Corresponding Author- Ms. Philomina
Email: philomeena11111@gmail.com
DOI-10.5281/zenodo.8036298

Abstract:
Digital agriculture also known as e-forming or smart farming. Nearly a decade agricultural industry also turns into digitalization. India has 64.61 percent of rural population. Presently 58 percent of the people still depending on agriculture. There are 60.22 percent of land using for agriculture. In Karnataka 64.6 percent of the geographical area used for farming. So, now rural India also turning towards digitalization. In 2015 the first agricultural mobile app launched by IFFCO Kisan, the application's main aims to convey the information about agriculture advisory, weather, market prices, crops information with audio and video examples and selected Indian languages. Now, more than 10 Digi farming mobile apps are available in India for example KrishiJagaran, PusaKrishi, Agri App, Crop Insurance, KhetiBadi etc. These mobile apps give the guidelines for doing proper scientific way of farming. Hence, the main purpose of this study is to know how young farmers are aware about digital agriculture and to understand how young farmers are utilizing the Digi farming mobile application. The area of the study is Vijayapura District of Karnataka State. The purposive sampling method is adopted for the selection of the sample based on this 60 young farmers were selected as respondents. The study finally found that Digi-farming mobile apps were helping to young farmers to increase the quality and quantity of the crops and these apps gives up to date information to farmers.

Key words: Agriculture, Digi-farming, Agricultural mobile apps, digital agriculture, Young Farmers.

Introduction:
India as called as powerhouse of global agriculture. India is the world's largest producer of wheat, rice, milk, spices and pulses. India is the second largest producer of several dry fruits. When we talk about agricultural activities in Karnataka, agriculture in Karnataka is heavily depending on the southern monsoon. The main crops grown in Karnataka are Rice, Ragi, Jowar Maize and Pulses. But Karnataka agriculture sector has poor market infrastructure, lacking of best prices for crops, lacking of information about new technology etc.

According to a survey of Annual Status of Education Report (ASER), Karnataka has 68.60 percent of people are using smart phones in their daily lives. Smart communication technology becomes worlds as a village. It spreads information, education, data, and services very faster.India is the second largest user of Internet and rural internet connection also increased rapidly. India is called as Youngest country because it has 200 million rural youth in total population of India.

Usage of smart phones are felt necessary for farmers. Smart communication or Digital accessibilities are reducing some works of farmers. Present days smart phones and Internet connections are emerging with agriculture sector and focusing agricultural development and rural development.

Digi farming is the integration of digital technology into crops management. "the benefits of digital agriculture are food security, quality of soil, air and water, better economic returns, and efficiency of crop and animal production and quality of life"

(Prakash Rao, 2022). Present days there are so many number of Digi farming mobile apps are available in google pay store and other downloaders. In 2015 the first agricultural mobile app launched by IFFCO Kisan, the application's main aims to convey the information's about agriculture advisory, weather market prices, crops information with audio and video examples and selected Indian languages. Krishijagran is the recently launched app. Its provides trending agri news, cultivation guide, crop calendar, complete information about crop protection, crop disease management, subsidies and crop management. Pusakrishi mobile app launched by Indian government in 2016, it aims to get information's about technologies and development of Indian agriculture research institute. This app also provides information related to new varieties of crops and cultivation practices.

Agri app one of the farmer friendly mobile app, its provide complete information on crop production, crop protection, and all relevant agricultural services. This application has chat with expert option, video-based learning, latest news in agriculture, online marketing and insecticides are also available in this app. Crop insurance is worked as a calculator of farmers about their insurance. There are more number of Digi farming mobile apps are available and these mobile apps give the guidelines for doing proper scientific way of farming.

Review of Literature:

Khaerunnisa, Nurmayulis and Salampessy (2023) in their study "Attitude of Young Farmers to on-Farm Business Sustainability Based on the Behavior and Success of Seeking Digital information Related to Agriculture (Case of Lebak Regency, BantenProvin-Indonesia)" examined that in Lebakyoung farmers behavior of seeking digital agriculture information directly effects on successful agriculture. Seeking ofDigital information for young farmers are in the high category and they involved the category to support the sustainability of on-farm business.

NezamovaO A and OlentsovaJ A (2022) in their study "The Main Trends of Digitalization in agriculture" observed that lack of financial opportunities for many farmers to obtain digital technology. Farmers are also has lack of awareness of enterprises, especially small ones, about the availability, composition and capabilities of digital technologies. The study also shows that digital technology will contributes to improve the quality and safety of manufactured products, reduction of production costs and growth of production and revenue.

Tatiana Sergeevna, Anna Sergeevna, Klykova, Mashegov, Zaitsve and Popova (2021) in their study "Features and Benefits of Digital Technology in Agricultural Enterprises" found that Usage of digital technology in the field of agriculture its increases quality and quantity of the agricultural products. Its introducing new breeding technologies and smart cropping system. Usage of digital technologies is reducing the harmful impact on the earth. Digitalization also reflects on economic efficiency of farmers. The study also found that digitalization plays major role in agricultural field in Russia.

KalyanMandi and Rahul Mandal (2020) in their study "Mobile apps in Agriculture: A Boon for Farmers" examined that digital revolution and internet access new apps and introduces to modern technology. A number of new mobile apps are emerging in response to new requirement and challenges in agriculture and allied sectors. These mobile apps provide credible and current information and meet requirements. The study also found that mobile apps should aim at holistic rural development and forge closer links between farmers and consumers.

Statement of the problem:

The research aims to analyzing how young farmers are utilizing the new updates in digital agriculture and how they consume Digi farming mobile apps. But Vijayapura district has 74 percent of the land using for agricultural activities. So, there are so many youngsters' choose agriculture as their professional. So, therefore it felt necessary to make in-depth research on "Usage of Digi farming mobile applications among young farmers: A Case study of Vijayapura"

Objectives:

Modern farming method is the new trends in agriculture. Agricultural industry also becomes smart. Recent days there are so many mobile apps are available for agriculture purpose. And the key purpose of this study to know how young farmers are aware about these apps and how Digi farming mobile apps becomes farmer's friendly.

The following are the main objectives of the study:

1. To know socio-democratic characteristics of the farmers.
2. To study how young farmers are aware about digital agriculture.
3. To understand how young farmers are utilizing the Digi farming mobile application.
4. To know how digitalization affected on agricultural industry.

Research Methodology:

The study was conducted in Vijayapura district of Karnataka state involving 60 young farmers for survey by using purposive sampling method. The questionnaire created to collect the primary data from farmers. The structured questionnaire was designed in google form and spread it through online sources like WhatsApa, e-mail, Facebook and othersources. The questionnaire had total 22 questions.

Data Analysis:

Table 1- Gender

Gender	Frequency	Percentage
Male	48	80%
Female	12	20%
Total	60	100%

Table one indicates the gender of the farmers. It shows that a great majority of the respondents (80%, N=48) were Male and remaining Female (20%, N=12).

Table 2 – Age

Age	Frequency	Percentage
18-20	06	10%
21-25	08	13.3%
26-30	22	36.7%
31-35	24	40%
Total	60	100%

The above table reveals the age groups of the respondents. It shows that majority of the respondents (40%) were belonged to 31 to 35 years of age group, followed by 26 to 30 years (36.7%, N=22). Whereas 13.3 percent (N=08) were belonged to 21 to 25 years of age group and 10 percent (N=06) were belonged to 18 to 20 years of age group.

Table 3- Education

Education	Frequency	Percentage
Primary	06	10%
High School	06	10%
PU	22	36.7%
Degree	08	13.3%
Master Degree	10	16.7%
Diploma and others	08	13.3%
Total	60	100%

It can be verified from the table 3 that 36.7 percent (N=22) of the respondents were belonged to pre university level, followed by Master degree (16.7%, N=10). Whereas 13.3 percent (N=08) of the respondents were belonged to degree and diploma or other courses and 10 percent (N=06) were belonged to primary and high school level.

Table 4- Yearly Income

Yearly income	Frequency	Percentage
Below 50,000	06	10%
50,000 to 1,00,000	22	36.7%
1,00,0000 to 5,00,000	20	33.3%
5,00,000 to 50,00,000	12	20%
Above 50,00,000	00	00%
Total	60	100%

The result shows from the above table that 36.7 percent (N=22) of the respondents were belonged to 50,000 to 1,00,000 of yearly income, followed by 1,00,000 to 5,00,000 (33.3%, N=20). Whereas 20 percent (N=12) were belonged to 5,00,000 to 50,00,000, 10 percent (N=06) were belonged to below 50,000 of yearly income and no one belonged to above five lakh of yearly income.

Table 5 – Own land for agriculture

Opinion	Frequency	Percentage
Yes	52	86.7%
No	08	13.3%
Total	60	100%

The above table indicates that more than three fourth of the respondents (86.7%, N=52) have their own land for agriculture and only 13.3 percent (N=08) were don't have own land for agriculture.

Table 6- Taking land on lease or rent

Opinion	Frequency	Percentage
Yes	32	53.3%
No	28	46.7%
Total	60	100%

The above table exhibits that respondents are taking land on lease or rent for agriculture. It inferred that more than half of the respondents were taking land for lease/rent (53.3%, N=32) and 46.7 percent (N=28) said they never taking land on lease/rent.

Table 7- Agriculture is the main occupation

Opinion	Frequency	Percentage
Yes	50	83.3%
No	10	16.7%
Can't Say	00	00%
Total	60	100%

It reported from the above table 7 that a great majority of the respondents (83.3%, N=50) were said agriculture is the main Main occupation . occupation for them and only (16.7%, N=10) opined that it is not

Table 8- years of have been engaged in farming

Years	Frequency	Percentage
1-5	18	30%
6-10	32	53.3%
11-15	10	16.7%
Total	60%	100%

Table 8 reveals the period of farming by the respondents. Above table indicates that more than half of the respondents (53.3%, N=32) said they are engaged in agriculture from 6 to 10 years, followed by 1 to 5 years (30%, N=18). Whereas 16.7 percent (N=10) of the respondents were engaged in farming from 11 to 15 years.

Table 9- usage of mobile phones

Opinion	Frequency	Percentage
Regularly	42	70%
Often	12	20%
Rarely	06	10%
Never	00	00%
Total	60	100%

Table 9 notified that using mobile phone in their daily lives. Above table reveals that majority of the respondents (70%, N=42) were regularly using mobile phones, followed by often (20%, N=12). Whereas 10 percent (N=06) said rarely. The results shows that all the farmers selected for study were having their own mobile phones.

Table 10- using mobile phones for agricultural purpose

Opinion	Frequency	Percentage
Regularly	30	50%
Occasionally	16	26.7%
Sometimes	12	20%
Rarely	02	3.3%
Total	60	100%

Table 10 portrays that using mobile phones for agricultural purpose by respondents. The data shows that half of the respondents (50%, N=30) said regularly they use mobile for agricultural purpose, followed by occasionally (26.7%. N=16). Whereas 20 percent (N=12) of

the respondents said sometimes and only 3.3 percent (N=2) said rarely.

Table 11- using Digi farming mobile apps for agricultural purpose

Opinion	Frequency	Percentage
Regularly	32	53.3%
Occasionally	12	20%
Sometimes	14	23.3%
Rarely	02	3.3%
Total	60	100%

It is observed from the above table that more than half 53.3 percent (N=32) of the respondents said they are using Digi farming mobile apps regularly, followed by sometimes (23.3%, N=14). Whereas 20 percent (N=12) of the respondents said occasionally and only 3.3 percent (N=2) said rarely.

Table 12- using Digi farming mobile apps

Mobile apps	Frequency	Percentage
KrishiJagran	22	36.7%
PusaKrishi	08	13.3%
Agri App	22	36.7%
Kheti-badi	12	20%
Agri Market	12	20%
Shetkari	02	3.3%
KisanSuvidha	14	23.3%
BeleDarshakKarnataka	28	46.6%
Kisanbandi.com	28	46.6%
Meghdooth weather app	10	16.7%
Kayakamitra app	04	6.7%
PashuPoshan app	22	36.7%
Others	06	10%

The above table indicates thedifferent types of Digi farming mobile apps used by the farmers. The data shows that 46.6 percent (N=28) of the respondents using Bee Darshak Karnataka and Kisanbandi.com, followed by Krishijagaran, Agri App and PashuPoshanAgri Mobile apps (36.7%, N=22). Whereas 23.3 percent (N=14) using KisanSuvidha app, 20 percent (N=12) were using Khetibadi and Agri market apps, 16.7 percent (N=10) were using meghdooth weather app, 13.3 percent were using Pusakrishi and 6.7 percent were using Kayakamitra app and only 3.3 percent were using Shetkaridigi farming mobile app.

Table 13- very useful agri mobile app

Mobile apps	Frequency	Percentage
KrishiJagran	16	26.7%
PusaKrishi	02	3.3%
Agri App	16	26.7%
Kheti-badi	12	20%
Agri Market	14	23.3%
Shetkari	02	3.3%
KisanSuvidha	14	23.3%
BeleDarshak Karnataka	16	26.7%
Kisanbandi.com	12	20%
Meghdooth weather app	04	6.7%
Kayakamitra app	08	13.3%
PashuPoshan app	04	6.7%
Others	04	6.7%

The above table presents that 26.7 (N=16) of the respondents opined that KrishiJagran, Agri App and BeleDarshak Karnataka apps are very useful, followed by Agri Market and KisanSuvidha apps (23.3%, N=14). Whereas 20 percent (N=12) pined KhetiBadi and Kisanbandi.com apps are useful, 13.3 percent (N=08) said Kayakamitra, 6.7 percent (N=04) opined Meghdooth weather apps, PashuPoshan app and others applications are useful and only 3.3 percent of the respondents (N=2) opined Pusakrushi and Shetkarib apps are also useful for farming.

Table 14- Agri mobile apps are makes work easy

Opinion	Frequency	Percentage
Strongly agree	44	73.3%
Agree	06	10%
Neutral	10	16.7%
Disagree	00	00%
Strongly Disagree	00	00%
Total	60	100%

Table 14 portrays that Agri mobile apps are makes farmers work easy. The result shows that nearly three fourth of the respondents (73.3%, N=44) were strongly agree with this opinion, followed by Neutral (16.7%, N=10). Whereas 10 percent (N=6) were agree and no one said disagree and strongly disagree. Because digitalization turns everything into smart work. When we start utilizing the digitalization everything in our hands. In agricultural sector these smart apps are very useful to every farmer. These apps turn their hard work into smart one. Earlier days agriculture looks like a very hard work. Only the farmer wants to do irrigation, sowing, harvesting and storage and he is the only one response for his crops and productions. But now there are so many smart apps are helps farmers in a different way. Now the farmer can sale his/her crop directly to the consumers with these apps for example kisanbandi.com app gives like this option to farmers.

Table 15- Purpose of using Digi Farming mobile apps

Purpose	Frequency	Percentage
To know market price	32	53.3%
To purchase new products or equipment	22	36.7%
To know about fertilizers and medicine	22	36.7%
For financial support and subsidy	24	40%
For crop insurance	32	53.3%
For government scheme	24	40%
For cultivation guide	12	20%
For crop protection	10	16.7%
For crop calendar	06	10%
For soil mapping	04	6.7%

The above table examines the purpose of using Digi farming mobile apps by respondents. The result shows that more than half 53.3 percent (N=32) of the respondents were using digi farming apps to know market price and for crop insurance facility purpose, followed by financial support and subsidy and for government schemes (40%, N=24). Whereas 36.7 percent (N=22) said to purchase new products or equipment and to know about fertilizers and crop medicine, 20 percent said for cultivation guide, 16.7 percent (N=10) said for crop protection, 10 percent (N=6) said for crop calendar and only 6.7 percent (N=4) said for soil mapping purpose they use Digi farming mobile apps.

Table 16- Digi farming mobile apps are farmer friendly

Opinion	Frequency	Percentage
Strongly agree	36	60%
Agree	14	23.3%
Neutral	06	10%
Disagree	04	6.7%
Strongly Disagree	00	00%
Total	60	100%

It can be verified from the above table that 60 percent (N=36) of the respondents were strongly agree that Digi farming mobile apps are farmers friendly, followed by agree (23.3%, N=14). Whereas 10 percent (N=6) were Neutral with this opinion, 6.7 percent (N=4) were disagree and no one strongly disagree with this opinion.

Table 17- Agri mobile apps are makes farming easy

Opinion	Frequency	Percentage
Strongly agree	32	53.3%
Agree	20	33.3%
Neutral	04	6.7%
Disagree	04	6.7%
Strongly Disagree	00	00%
Total	60	100%

From the above table shows that Agri mobile apps makes farming easy for farmers. The result shows that more than half of the farmers (53.3%, N=32) were strongly agree with this opinion, followed by agree (33.3%, N=20). Whereas equally 6.7 percent (N=4) of the respondents were Neutral and disagree and no one said strongly disagree.

Digi farming mobile apps are helps farmers in several ways. Agri apps are has complete solution for crop production and management, because these apps are gives audio and visual information about smart farming in agriculture.

Table 18- using of Agri apps increase harvest and profit

Opinion	Frequency	Percentage
Strongly agree	46	76.7%
Agree	06	10%
Neutral	00	00%
Disagree	08	13.3%
Strongly Disagree	00	00%
Total	60	100%

It is evident from the above table that using of Digi farming mobile apps increase harvest and profit. The data indicates that more than three fourth of the respondents (76.7%, N=46) were strongly agree with this opinion, followed by Disagree (13.3%, N=08). Whereas 10 percent were (N=10) were agree and no one belonged to neutral and strongly disagree. The farmer's most and common problem is they didn't get actual price for their harvest. But using Digi farming mobile apps like Agri app, BeleDarshak, Kisanmandi.com apps are having some features like farmer can directly sale their crop to consumers or stockjobbers with good price and farmer can decide the price for their crops. Hence, they can easily get more profit.

Table 19- using digi farming mobile apps helps to updated in farming

Opinion	Frequency	Percentage
Strongly agree	32	53.3%
Agree	14	23.3%
Neutral	06	10%
Disagree	08	13.3%
Strongly Disagree	00	00%
Total	60	100%

The above table 19 analysis the usage of Digi farming mobile apps helps to updated in farming. the result shows that majority of the respondent (53.3%, N=32) were strongly agree, followed by agree (23.3%, N=14). Whereas 13.3 percent (N=8) were disagree, 10 percent were (N=6) and no one belonged to strongly disagree. This table shows Digi farming mobile apps helps farmers to get day by day updates in agricultural sector. Technologies are updated every single day. There are so many new inventions and new farming techniquesare introducing. After every budget government also released some schemes for farmers. So,Farmers can easily know about these updates by using Digi farming mobile apps.

Table 20- farmers utilizes the benefits of Agri mobile apps

Opinion	Frequency	Percentage
Very frequently	28	46.7%
Frequently	10	16.7%
Occasionally	08	13.3%
Rarely	08	13.3%
Very rarely	06	10%
Total	60	100%

The above table indicates that how farmers are utilizing the benefits received from Digi farming mobile apps. It shows that majority of the respondents (46.7%, N=28) were opined they get benefits from Digi farming mobile apps very frequently, followed by frequently (16.7%, N=). Whereas 13.3 percent (N=8) opined occasionally and rarely and only 10 percent farmers opined very rarely they utilizes the benefits from agri mobile apps. The data shows that majority of the respondents are utilizing the benefits from Digi farming mobile apps. Because farmers want to get some government scheme they should apply in online for example Agro app provides e-services for crop and government schemes. This application allows applying for schemes directly by farmers.

Table 21- Giving advice to use Digi farming mobile apps

Opinion	Frequency	Percentage
Yes	52	86.7%
No	06	10%
Sometimes only	02	3.3%
Total	60	100%

The above table exhibits thatmore than three fourth of the respondents (86.7%, N=52) were advising their neighbors and family members to use Digi farming mobile apps, (10%, N=6) never refer the agri mobile apps to anyone. Only 3.3 percent (N=2) said Sometimes they suggest someone to use agri mobile apps.

Table 22- opinion about Digi farming mobile apps

Opinion	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
Digi farming apps are easy to access	28 (46.6%)	28 (46.7%)	02 (3.3%)	02 (3.3%)	00 (00%)
These applications are free for download	24 (40%)	26 (43.3%)	10 (16.7%)	00 (00%)	00 (00%)
Easy to consult government	24 (40%)	24 (40%)	08 (13.4%)	02 (3.3)	02 (3.3)
Easy to get government scheme and loan from bank	16 (26.7%)	22 (36.6%)	12 (20%)	06 (10%)	04 (6.7%)
Easy to increase harvests	30 (50%)	16 (26.6%)	08 (13.3%)	04 (6.6%)	02 (3.3%)
Easy to know daily prices of crops in market	22 (36.7%)	24 (40%)	08 (13.3%)	06 (10%)	00 (00%)
Easy to connect with stockjobbers	16 (26.7%)	26 (43.3%)	10 (16.7%)	06 (10%)	02 (3.3%)
Easy to know daily weather reports	28 (46.7%)	22 (36.7%)	04 (6.6%)	04 (6.6%)	02 (3.3%)

The above table indicates the opinion about Digi farming mobile apps. The above table shows that nearly half of the respondents (46.6%, N=28) were Strongly agree and agree that Digi farming mobile apps are easy to access, followed by neutral and disagree (3.3%, N=02) and not a single respondents opined strongly disagree.

The above data shows that majority of the respondents (43.3%, N=26) were agreed with Agri mobile apps are free for download, followed by strongly agree (40%, N=24). Whereas 16.7 percent (N=10) of the respondents were neutral and no one opined disagree and strongly disagree.

It is observed from above data that 40 percent (N=24) of the farmers were strongly agree and agree that Agri apps helps easy to consult government, followed by neutral (13.4%, N=08). Whereas 3.3 percent (N=02) were opined disagree and strongly disagree.

The above result indicates that 36.6 percent (N=22) of the farmers were agreedthat using these apps easy to get government schemes and loan from bank, followed by strongly agree (26.7%, N=16). Whereas 20 percent (N=12) were neutral, 10 percent (N=06) were disagreeing and 3.3 percent (N=02) were strongly disagreed.

The result shows that half of the respondents (50%, N=30) were strongly agree thatAgri apps are easy to increase harvest, followed by agree (26.6%, N=16). Whereas 13.3 (N=08) percent were neutral, 6.6 (N=04) percent were disagree and only 3.3 percent (N=02) were strongly disagree.

The above table indicates that 40 percent (N=24) of the respondents were agree with Digi farming mobile apps are easy to know

daily prices of crops in market, followed by strongly agree (36.7%, N=22). Whereas 13.3 percent were (N=08) neutral, 10 percent (N=06) were disagree and no one opined strongly disagree.

The above data shows that 43.3 percent (N=26) of the respondents were agreedthat these apps were easy to connect with stockjobbers, followed by strongly agree (26.7%, N=16). Whereas 16.7percent(N=08) were neutral and 10 percent were disagree and 3.3 percent (N=02) were strongly disagree.

The result shows from the above table that 46.7 percent (N=28) of the respondents were strongly agreed that these apps helps them to know daily weather reports, followed by agree (36.7%, N=22). Whereas 6.6 (N=2.2) percent were neutral and disagree and 3.3 (N=02) percent were strongly disagree with this opinion.

Conclusion:

From last few years Agriculture slowly attracts youngsters also. Last few decades back people thinks agriculture is one of the least job. But present days'digitalization has been widely adopted in agricultural sector. Digi farming mobile apps can help farmers manage their farms, cultivations, irrigations, quality of the crops, inform about weather conditions and etc. these applications are also helps to step by step farming like plantations, fertilizing and harvesting finally selling the product. In this study the final result shows that majority of the farmers were using digi farming apps in these apps BeleDarshak Karnataka, Kisanbandi.com, KrishiJagran and Agriapss are the best Digi farming applications among selected farmers. These apps helpsyoung farmers to increase their harvest, get loan from banks and government schemes, information about fertilizers and can get suggestions from experts also.These apps are having huge features for farmers but farmers should utilize and make themselves as smart farmers.

References:

1. KalyanMandi and Rahul Mandal (2020), Mobile apps in Agriculture: A Boon for Farmers, Science for agriculture and allied sector: a monthly e newsletter, 2(1), PP-19-24, Retrieved from https://agriallis.com/wp-content/uploads/2020/01/MOBILE-APPS-IN-AGRICULTURE-A-BOON-FOR-FARMERS.pdf on March 28, 2023.
2. Khaerunnisa, Nurmayulis and Salampessy (2023), Attitude of Young Farmers to on-Farm Business Sustainability Based on the Behavior and Success of Seeking Digital information Related to Agriculture (Case of Lebak Regency, BantenProvin-Indonesia), IOP Conference Series: Earth and Environmental Science, Retrieved from https://iopscience.iop.org/article/10.1088/1755-1315/978/1/012037/pdf on March 28, 2023.
3. NewLetter, Deccan Herald (2022), e-paper, https://www.deccanherald.com/state/top-karnataka-stories/68-households-in-karnataka-have-smartphones-survey-909297.html on May 5, 2023.
4. A Nezamova and J A Olentsova (2022), The Main Trends of Digitalization in agriculture, IOP Conference Series: Earth and Environmental Science, Retrieved from https://iopscience.iop.org/article/10.1088/1755-1315/981/3/032018/pdf on March 28, 2023.
5. Prakash Rao (2022), Digital Agriculture- A Future Disruption in India, Indian Journal of Fertilizers, 18(4), PP-334-342, Retrieved from https://www.researchgate.net/publication/359938430_Digital_Agriculture_-A_Future_Disruption_in_India on April 28, 2023.
6. Tatiana Sergeevna, Anna Sergeevna, Klykova, Mashegov, Zaitsve and Popova (2021), Features and Benefits of Digital Technology in Agricultural Enterprises, ICEP-2021, Retrieved from https://doi.org/10.1051/e3sconf/202124701018on March 28, 2023.

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

"Digital Transformation Trends in Education System"

Dr. Mallikarjun
Assistant Professor, Department of Management, Government First Grade College Humnabad, Dist. Bidar
Corresponding Author- Dr. Mallikarjun
Email: mallikarjunbalit@gmail.com
DOI-10.5281/zenodo.8036308

Abstract

Gone are the days when certain courses were accessible just in a chosen few organizations and nations or when such projects were outlined with unbending one-estimate fits-all directions. As indicated by a report exhibited at the Worldwide Monetary Symposium in 2014, various inside and outside drivers are setting off this change. While soaring educational cost costs, constrained access and developing understudy assorted variety are the fundamental interior drivers, the passage of advanced locals into the instructive framework, the developing notoriety of internet based life and Enormous Information and consistent mechanical advance are what drives change remotely. Ideal from K-12 tutoring to advanced education programs, each level of our training framework is influenced by innovation. With expanded availability, speed and cloud-based capacity abilities, schools and universities have an upgraded correspondence organize that clears a path for enhanced learning sharing. Advanced portfolios are winding up a significant wrath among secondary school understudies who utilize it to show their insight and accomplishments and are currently being broadly utilized a solid device for their confirmation strategy to school. Coming to advanced education foundations, a large portion of them give understudies digitalized learning materials oversaw through internet learning/information administration frameworks. A few colleges are likewise trying different things with virtual learning spaces and have been without giving courses and learning material on the web. This paper focuses on recent digital transformation trends in education system in India.

Key words: Digital, Transformation, Education, Cloud computing Blended learning, etc.

Introduction

A successful digital transformation involves a comprehensive technology, personnel, and budget strategy. This is especially true in education, where common transformation efforts range from content conversion to automating administrative processes and integrating systems. As new learning applications, media channels, forms, and communication and collaboration technologies emerge, IT teams are faced with a re-evaluation of security, personnel, budget and operational issues. Campus life from an administrative, teacher and student perspective is targeted for a vast disruption. To remain competitive, institutions need to keep pace with digital innovation without losing sight of security. Identifying devices, segmenting users and updating protection policies are three critical components to securing your digital ecosystem.

Digital Transformation in Education

Today, technology is pervasive in many facets of learning, from the physical layout of classrooms (with computers and smart boards) to how lessons are planned and results evaluated (automated grading, and engagement tracking). Here are some of the top areas in which digital transformation is affecting education.

1. The Internet of Things

As schools grasp computerized change, numerous are hoping to equip "savvy classrooms." Keen classrooms are those that track and measure execution and proficiency through different associated IoT gadgets. Forty-six percent of IT experts in K-12 and advanced education envision that the Web of Things will majorly affect school activities inside the following two years. These savvy classrooms regularly incorporate tablets and eBooks empowered with instructive

programming and applications, shrewd whiteboards, participation following capacities, and that's only the tip of the iceberg. Beside IoT gadgets that particularly encourage learning, schools are likewise fusing associated central air and lighting frameworks, and in addition squander administration frameworks to improve proficiency.

2. Artificial Intelligence Powering Personalized Learning

One of the primary drivers of tech reception in instruction is the craving to empower customized learning. New devices and applications are helping teachers to redo learning gets ready for singular understudies in view of their qualities and shortcomings. Truth be told, empowering customized learning is the main need for schools, as indicated by a review from Computerized School Areas. This has prompted mixed learning educational modules that consolidate up close and personal instructing with online exercises and guidelines, and the expanded utilization of man-made reasoning (AI) in training. AI can encourage individualized learning by understanding the necessities of every understudy to guarantee that they are given the material they have to succeed. This should be possible through AI-empowered mentoring, AI that gives quick criticism, and that's only the tip of the iceberg. Also, AI can be utilized to accelerate the reviewing procedure, giving instructors more opportunity to center around understudy needs.

3. Big Data

Big data is also being leveraged by schools to measure and improve courses and curriculums. While personalized learning focuses on the needs of individual students, big data can help educators improve classes on a broader scale. As information is collected about student engagement and success through IoT devices and AI interfaces, this data can be analyzed to understand trends demonstrating where students are most engaged or areas where improvements could be made.

Digital Transformation Risks

As schools grasp these specialized advances to enhance the accomplishment of their understudies, they are additionally grasping a large group of new dangers. At last, joining new innovation that gathers huge amounts of information about individual clients into the system opens schools up to digital assaults.

This does not imply that K-12 schools and colleges should quit seeking after advanced change activities, rather, that they should likewise fuse security highlights to accomplish guard top to bottom close by them. With understudies utilizing tablets and intelligent applications in a classroom while getting criticism from AI programs, a DDoS or payment product assault that thumps a school disconnected or bolts up the system can be disastrous. That is the reason solid system resistances are necessary.

Secure Technology Use in Classrooms and on Campuses

As schools design their security framework, they ought to make certain to join a Cutting edge Firewall (NGFW), anchored organize access and endpoint assurance. NGFW's give the solid edge safeguards schools need to empower advanced change. As cybercriminals dispatch complex assaults against abuses in programming and equipment associating with the system, NGFWs can survey this movement on a granular level utilizing current danger insight to allow authentic activity, while ceasing what is suspicious.

Anchored arrange get to arrangements are fundamental to an associated grounds. Fortinet's safe access arrangement incorporates assurance against digital dangers from inward client gadgets and IoT items. This arrangement is a vital part to accomplishing CIPA consistence.

Endpoint insurance is likewise vital while anchoring the computerized change and the IoT gadgets required with it. With shrewd grounds and classrooms developing, more endpoints are interfacing with training systems than any time in recent memory. From PDAs and tablets to remote printers and lighting frameworks, these endpoints fill in as portals into the system. Solid endpoint insurance gives end-to-end risk perceivability and robotized security from malware and misuses.

As advanced innovation turns out to be more settled in day by day tasks, schools will be all around served to convey these security controls, and in addition any others, as a major aspect of a coordinated Security

Texture, or brought together danger administration framework.

These Digital Transformation Trends Will Be Huge in 2018

The effect of a modernized school can be transformative for learning results. Keeping understudies drew in is a tremendous test our instructors manage each day. Understudies learn in various courses, and at different paces. Luckily, an advanced change is occurring to drive customized, computerized learning procedures in an extremely proficient and viable way. Here are the best six advanced change slants that will enormously affect instruction in 2018.

1. Personalized Learning

Late decades have seen a relentless move in the direction of more customized training. As training innovation enhances, instructors are discovering more approaches to make individualized learning open doors for their understudies. The computerized change patterns of mixed learning and versatile learning are two different ways to customize the instructive experience.

Blended learning

Educators have constantly known the estimation of understudy possession in learning. Mixed learning customizes exercises, enabling understudies to center on revelation and to settle on their own choices about course and pace. The thought is to consolidate innovation, (for example, a portable learning stage or other online situations) with eye to eye co-operations. This blend furnishes understudies with more possession.

Adaptive learning

Similar to blended learning, adaptive learning allows students more freedom in designing their own educational paths. Adaptive learning technology analyzes a student's input and instantly adjusts the student's learning materials and assessments. Adaptive learning tools can increase classroom agility and support student achievement.

Student-Led Learning

Individuals frequently develop more OK with a theme subsequent to showing others about it. In educating, the brain is effectively and significantly locked in. Educators have been utilizing understudy drove learning in their classrooms for a considerable length of time. Most grown-ups will review making an introduction or two as understudies. However, 21st-century training has conveyed understudy drove figuring out how to the following level with remote introduction frameworks and reflecting gadgets.

Gamification

Who doesn't care for a decent diversion? Instructors are continually searching for propelling and drawing in amusements to actualize in their exercises. Gamification in the classroom rouses learning through a considerable lot of the prizes behind what computer games and procedure diversions do. This can be accomplished by giving chances to acquire identifications, level up, and flop with a specific end goal to restart and attempt once more. It likewise energizes coordinated effort through group play.

Amusements have dependably been utilized as a part of the classroom however now we see a more mental way to deal with how they are actualized. By utilizing instruments like Mine specialty, instructors can discover approaches to achieve understudies where they are while enabling understudies to impart substance and achievements to whatever is left of the class through remote show and reflecting gadgets. By utilizing this computerized change slant in the classroom, instructors can keep understudies effectively included while strengthening both low-level and abnormal state ideas.

Utilization of Cloud-Based Technology

Cloud-based technology allows students and teachers to have access to content and resources wherever they are while still being able to use the tools that they need to use to accomplish their goals. There should be no more lost files, missing resources, or lack of access and this is an essential part of a school's digital transformation.

Learning Data and Analytics

By social occasion and translating information from students, investigative innovation can enhance information maintenance and student commitment. Customizing what the student gets can better serve the student's advantages and learning style. Information can be utilized to customize the learning knowledge consequently (similarly as with versatile learning innovation), yet it can likewise be utilized to customize associations with understudies. Instructors can utilize

intelligent classroom arrangement devices, for example, Windows Ink, and contact screen showcases to give understudies significant, ongoing criticism straightforwardly on their gadgets in a 1:1 domain. When you include examination blended from a school's understudy data framework, instructors can go much further in adjusting substance to suit the understudies' needs.

1 to 1 Ratio Classrooms

By social occasion and translating information from students, investigative innovation can enhance information maintenance and student commitment. Customizing what the student gets can better serve the student's advantages and learning style.

Information can be utilized to customize the learning knowledge consequently (similarly as with versatile learning innovation), yet it can likewise be utilized to customize associations with understudies. Instructors can utilize intelligent classroom arrangement devices, for example, Windows Ink, and contact screen showcases to give understudies significant, ongoing criticism straightforwardly on their gadgets in a 1:1 domain. When you include examination blended from a school's understudy data framework, instructors can go much further in adjusting substance to suit the understudies' needs. To use these devices effectively, schools are investing in wireless and classroom orchestration systems such as Screen beam's Classroom Commander, which allows teachers and students to work in a fully interactive, agile classroom.Classroom Commander helps teachers maximize student engagement and retention in many ways. For example, teachers can freely move around the room while presenting, watching student reactions and understanding. Proximity control is easier when wires aren't a concern. Windows Ink support allows teachers to annotate comments directly onto a student device from the classroom display. Teachers view all student screens and active applications, can launch websites and apps across student devices, and blank screens on a single device or the entire classroom when needed.

Today, India is one of the world's best goals for training. With a portion of the best schools and colleges, it is eminent for its brilliance and exclusive expectations. What's much all the more fascinating is the means by which innovation has progressed quickly to change the path understudies in India devour instructive substance. Moreover, the infiltration of web based advanced cells is taking quality figuring out how to understudies crosswise over geologies in India.

Today, little kids are viewing their most loved toons and learning pictorial rhymes on a similar gadget. Instruction is being bestowed to them through adaptable and non-nosy organizations. As an outcome, understudies over all age bunches are finding the delights of learning and having a ton of fun while at it. There has been a recognizable move in the impression of guardians and educators see computerized adapting as well. Today, establishments are trying endeavors to move the emphasis back on understudies to reexamine the way they learn appropriate for the duration of their life. India won't have promptly received training innovation but rather it's cheering to perceive how a conventional division like instruction is utilizing innovation as an empowering influence up until this point. Today, some bleeding edge advances are being utilized to additionally improve this part, while catching the eye of business visionaries, financial speculators, corporates and governments.

Conclusion

In the end, the transformative intensity of any innovation in schools relies upon human decisions and conditions. As computerized advances turn out to be progressively pervasive in day by day life, it turns out to be always essential to consider how they may add to learning, as well as why. At the end of the day, a portion of crafted by guaranteeing an "advanced upset" in training is about co-ordinations, speculation, and strategy. Nonetheless, a portion of the work is additionally about great narrating. Students won't take part in web based learning on the off chance that they don't buy in to a dream about its potential advantages. Advanced gadgets will go minimal utilized if understudies and instructors don't imagine another method of tutoring. PC information frameworks are poor ventures if networks and teachers don't concur about the true objectives of tutoring and which information adjust to those objectives. In this way, the test of the computerized time is as much about settling

on all around educated choices, as it involves forming knowledge into what persuades individuals to benefit as much as possible from their advancements in any case.

References

1. Bocconi, S., Kampylis, P., & Punie, Y. (2013). Framing ICT-enabled Innovation for Learning: the case of one-to-one learning initiatives in Europe. European Journal of Education, 48(1), 113-130.
2. Booher-Jennings, J. (2005). Below the bubble: "Educational triage" and the Texas Bredeson, P. V. (2002). Designs for learning: A new architecture for professional•accountability system. American Educational Research Journal, 42(2), 231–268.
3. Brooks, C. (2011). Locating leadership: The blind spot in Alberta's technology policy•development in schools. Thousand Oaks, CA: Corwin. discourse. Education Policy Analysis Archives, 19(26). Retrieved from http://www.eric.ed.gov/ERICWebPortal/detail?accno=EJ956002
4. Brunner, C., Fasca, C., Heinze, J., Honey, M., Light, D., Mandinach, E. B.,• & Wexler, D. (2005). Linking data and learning: The Grow Network study. Journal of Education for Students Placed At Risk, 10(3), 241–267.
5. European Schoolnet (2013). Are 1:1 classes with school-provided laptops and tablets
6. Ferran, C.,•widespread? Brussels: European Schoolnet. & Watts, S. (2008). Videoconferencing in the field: A heuristic processing
7. Gaebel, M. (2014). MOOCs–Massive Open Online Courses, an update of EUA's first•model. Management Science, 54(9), 1565+.
8. Gardner, H.,•paper (January 2013). EUA occasional papers, European University Association. & Davis, K. (2013). The app generation: How today's youth navigate identity, intimacy, and imagination in a digital world. New Haven, CT: Yale University
9. Gentile, D. (2009). Pathological video-game use among youth ages 8 to 18.

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

"The Digital Transformation of Healthcare Industry"

Dr. Dayasagar Saloki
Assistant Professor, Department of Management, Government Women's First Grade College, Jewargi Colony, Kalaburagi
Corresponding Author- Dr. Dayasagar Saloki
Email: dayamba@gmail.com
DOI-10.5281/zenodo.8036316

Abstract

The convergence of science and technology in our vibrant digital era has resulted in the growth of innovative digital health devices that allow easy and accurate characterization in health and disease. Information and Communication Technology (ICT) is revolutionizing many sectors but health sector is lagging in adopting ICT. In the manual system, much of the data is difficult to access and is not available in real time. There is lack of coordination between clinical service providers (doctor, nurse, patient and management) and other services such as pharmacy, procurement, laboratory and radiology. Digitization of hospital is vital in providing quality and cost-effective services to patients and improving support services.Although Health IT (HIT) has tremendous potential for improving quality and reducing cost in healthcare, significant challenges need to be overcome to fully realize this potential. In this commentary, we survey the landscape of existing studies on HIT to provide an overview of the current status of HIT research.Health care sector grows tremendously in last few decades. The health care sector has generated huge amounts of data that has huge volume, enormous velocity and vast variety. Also it comes from a variety of new sources as hospitals are now tend to implemented electronic health record (EHR) systems. These sources have strained the existing capabilities of existing conventional relational database management systems. In such scenario, Big data solutions offer to harness these massive, heterogeneous and complex data sets to obtain more meaningful and knowledgeable information.This paper attempts to provide a framework for digitization of hospital operations and services.

Key Words: Big date, Healthcare, digitalization, apps,etc

Introduction

Within these early years of the 21st century, we have witnessed remarkable technological progress with the developments of powerful and portable computing devices. Simultaneously, a global connection resulting from broadband and satellite technologies has resulted in an increasing number of 'connected users' for information sharing. The emergence of new mobile health (mHealth) technologies has resulted from the temporal intersection of several coincidental movements: (i) an urgent need to address the rising burden of chronic diseases; (ii) Moore's law—the exponential increase in computing power resulting in the development of smaller and cheaper mobile electronics; and (iii) shifting healthcare model to an increasingly patient-centric designs. mHealth is defined by the practice of medicine supported by portable diagnostic devices. Use of these devices at the point-of-care is resulting in a change in the method of healthcare delivery from one that was health-systems generated to one that is remote and patient generated. The culmination of these factors presents unparalleled opportunities to increase patient engagement, to reduce healthcare costs, and to improve outcomes.

To reach the transformative potential of mHealth, a great deal of validation of the technical capabilities and accuracy, as well as the clinical impact of these technologies, is needed before we know they are effective. The real-world practice of medicine is complex and raises important questions on

how we can generate clinically meaningful digital health data. Clinicians are beginning to enquire whether more devices necessarily mean more information and if some information may be redundant or even unnecessary. As mHealth devices become increasingly available, three important questions arise: who should be the first digital health adopter: the patient, the provider, or the healthcare system? What factors of mHealth are most effective? And what is the evidence supporting the clinical utilization of such devices? As we aim to determine the effectiveness of these technologies, what are the outcomes—morbidity and mortality—or are patient-generated outcomes such as quality of life equally important? Are patients prepared to understand mHealth findings particularly elderly patients or those with complex disease states? Do patients modify their behaviour? Will user-generated data lead to patients seeking out therapies for digital data rather than true disease states? We present these questions as they relate across the digital device, the digital patient, and the digital clinic, and discuss the literature evaluating mHealth towards their answers. More Americans than ever before are receiving regular healthcare. But managing this onrush of literally millions of new patients has forced the industry to confront significant challenges. Providers and payers are having to transition to more scalable business models designed to handle higher volumes of consumers. These systems must be designed to help companies mitigate risk and enable new strategies for business and data management. Digital transformation enables the continual build-out and extension of services and data, while coordinating services across the care continuum to support population health. Population health strategies are the ways in which companies achieve positive health outcomes for a group of individuals, including the distribution of these outcomes within the group. Digitization has the potential to affect every aspect of care delivery and operations, enabling smarter choices and better utilization of time and resources and allowing people to spend more time on patient interaction at the point of care.

Information and Communication Technology (ICT) is revolutionizing many sectors but health sector is still lagging behind. Due to shortage of healthcare facilities, people are not able to reach the medical facility in the early stage of disease; also processes in the hospital are more complex in nature. In the manual system, much of the data is very difficult to access in real time. There is lack of coordination between doctor, nurse, patient and management. Digitization of hospital is now the buzzword in healthcare sector for providing better, low-cost, and efficient services to patients and other stakeholders. The healthcare market has grown by leaps and bounds to a whopping US$100 billion and is expected to further grow at an estimated CAGR of 23 percent by 2020 reaching around worth of US$ 280 billion.

Need for Digitization and Its Advantages

To do the digitization of hospital services and operations, first is a needs assessment and gap analysis of present processes for what is and what needs. How much time the staff, patient and providers take in current system and how much time it saves after digitization needs to be assessed. There is a need for customization and optimization of the digitization process and assessment of how much time it will be required for a functional system to be monitored. Detailed workflow analysis of what needs to be digitized and what are the expected outcomes has to be studied. For operational perspective, what are the processes that need to be digitized, i.e., human resource, finance, hospital services, procurement, logistics, and patient records? We should keep in mind what patient records will be saved/ stored in the hospital and what the patient will have to generate on their visit. For user perspective, what the clinical care providers in the hospital by doctors, nurses, lab reports, what information patient and relative can be accessed, how patient and relatives will be integral part of information sharing during the patient care in the hospital? If there is need for an outside hospital consultant, then what information and how the outside healthcare providers will be integrated with the hospital? Internet of Things (IoT) is going to revolutionize healthcare.5 According to the author, technology can reduce errors during delivery of care. IoT can also help the people at their home, in rural and urban areas and extend the scope of healthcare to where the people are. Digitization of hospital services and operations requires involving all

stakeholders for their inputs and capacity building of all stakeholders for implementation of digitization. Before digitization, we would have to decide what quality of care digitization could provide to the current system.

Big Data: Background and its Sources

Big data is a term that is used to describe large volume of data. Data may in form of structured or unstructured. The analytics of Big data leads to any organization towards better decision making and strategic steps. Giant companies in sectors like retail, manufacture and government agencies are using Big data to meet their business and strategic objectives. The Big data analytics also plays a vital role for small and medium size industries to capitalize their business. Industry analyst Doug Laney originally coined the concept of Big data while referring to the challenge of data management. According to that, there are three important dimensions of the Big data concept illustrated below.

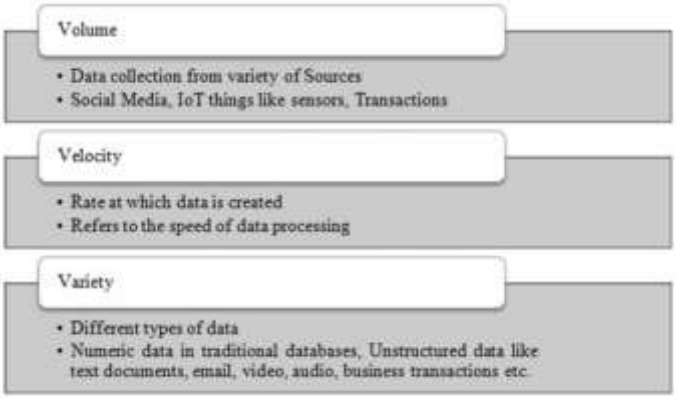


Figure 1. Three Vs of Big Data

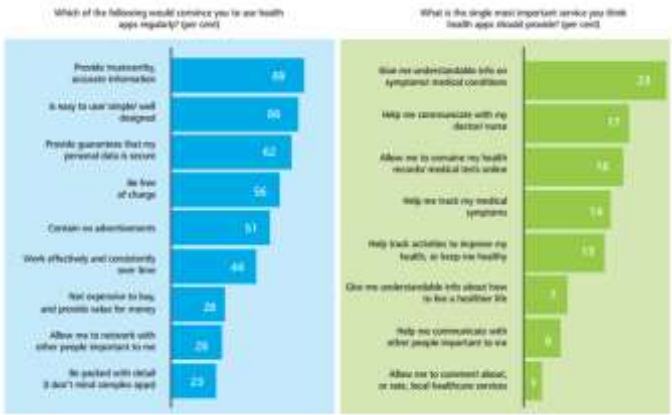
Health Care and Big Data

An information and communications technology (ICT) is playing a vital role in improving health care for individuals and communities. It helps to improve health system efficiencies and prevent medical errors. With an invent of new and efficient mechanisms for storing and accessing information, ICT helps to serve a society in a better way. ICT powered health mechanisms are often known as eHealth.

One of the characteristic that health care sector possesses is its data richness. With the development in diagnostic and treatment, health care sector evolved so quickly in last few decades. There are many sources in this sector from where the data is generated. These data is undoubtedly in the form of Big Data. The data came from many sources and categorized as follows:

1. Web and social media data: Data captured from Facebook, Twitter, LinkedIn, blogs, and the like. It can also include health plan websites, smartphone apps etc.
2. Machine-to-machine (M2M) device generated data: readings from remote sensors, meters, and other devices.
3. Biometric data: Data may in form of retinal scans, x-ray images, finger prints, genetics, handwriting, other medical images, blood pressure and other similar types of data .
4. Human-generated data: In the form of unstructured and semi-structured data. Some of the examples are EMRs, Doctor's notes and paper documents.

What do patients and carers want from health apps?



Information to be Digitized and Its Uses

For effective and real-time monitoring of hospital services and operations, a dashboard should be created according to the roles and responsibilities of different users. Reports in digitized system should be interactive, easy to read, and real time. Who will enter the data and who will access data according to their roles and responsibilities should be clearly defined. Patient prescription and referral system and patient feedback system must be digitized. Patients can give their valuable suggestions to improve the services and quality of operation. Radio-frequency identification (RFID) tag can be used for patient localization, supply chain management, Inventory control, etc. In order to avoid misuse of the digitized system, confidentiality and privacy should be maintained.

Considerations for Software and Hardware

1. User friendly
2. Open-source software platform for long-term access
3. Standardization and interoperability for different formats and data transfer
4. Internet speed
5. Storage of data internally or cloud based
6. Security
7. Backup and disaster recovery plan
8. IT support
9. Online as well as offline operation
10. Flexibility in data access, reports
11. Helpdesk for IT support

Healthcare's digital future

Within the next decade, we predict the development of new technologies across several areas in diagnostics, imaging, and therapeutics. Similar to clinical practice, the reality of mHealth is becoming increasingly complex. Our analysis of the current state of the field provides three main paths for translating mHealth to the real world: to identify new methods for patient engagement that results in beneficial and measurable behavioural changes, to develop the necessary tools to streamline clinical integration and data analytics, and to outline the regulatory factors that promote the most effective and robust technologies for clinical use. To achieve all three, we are collectively required to create an evidence base that assesses the impact of mHealth on healthcare quality, cost, and outcomes. In doing so, this interplay of digital devices, digital patients, and digital doctors holds exceptional promise for the future developments in medicine.

Conclusion

We may consider Big data as a latest evolution in the field of decision support data management systems. On the other side, the digitalization in health care sector is in peak. As we discussed in the paper, there are several opportunities for Big data in health care sector. Meanwhile, the technological advancement is rapidly going on towards the implementation of Big data analytics. In near future, there will be widespread implementation of big data analytics across the health care organization and the healthcare industry. The Big data solutions could definitely save millions of life and improve patient services.

Notably, in the projects analysed as well as the existing reports on the digitalisation of healthcare (WHO 2016), little was discussed about how these developments would challenge existing structures, processes or work practices in the organisations that would implement them. As one analysed project sensibly and clearly posited: 'Telemedicine is 'trendy' but it is rarely implemented in practice because it

requires a thorough reorganization of the way doctors and nurses work, both in town and in hospital. The consequences of these changes need to be carefully assessed in terms of feasibility, safety and also from a medical and economic point of view if these new ways of medical practice are to be implemented more broadly Notably, in the projects analysed as well as the existing reports on the digitalisation of healthcare (WHO 2016), little was discussed about how these developments would challenge existing structures, processes or work practices in the organisations that would implement them. As one analysed project sensibly and clearly posited: 'Telemedicine is 'trendy' but it is rarely implemented in practice because it requires a thorough reorganization of the way doctors and nurses work, both in town and in hospital. The consequences of these changes need to be carefully assessed in terms of feasibility, safety and also from a medical and economic point of view if these new ways of medical practice are to be implemented more broadly Notably, in the projects analysed as well as the existing reports on the digitalisation of healthcare (WHO 2016), little was discussed about how these developments would challenge existing structures, processes or work practices in the organisations that would implement them. As one analysed project sensibly and clearly posited: 'Telemedicine is 'trendy' but it is rarely implemented in practice because it requires a thorough reorganization of the way doctors and nurses work, both in town and in hospital. The consequences of these changes need to be carefully assessed in terms of feasibility, safety and also from a medical and economic point of view if these new ways of medical practice are to be implemented more broadlyThe framework presented in this paper helps us to understand the implication of digitization system and related issues over the manual operation of the hospital. This framework is divided into four parts which is useful to identify the requirements, issues and stakeholders so that correct information will get in right time at right location. In the future, we will investigate the feasibility of framework to digitized the hospital operations and services

References

1. (https://www.ibef.org/industry/healthcare-india.aspx).
2. Change management in EHR implementation. The National Learning Consortium (NLC). Health Information Technology Research Center (HITRC). April 30, 2013;
3. IBM Global Business Services. The digital hospital evolution. Creating a framework for the healthcare system of the future. 2013.
4. Victor W, Mbarika A et al. The neglected continent of IS research: A research agenda for Sub-Saharan Africa. Journal of the Association for Information Systems May 2005; 6(5):130-70.
5. Sullivan C. IoT will make healthcare more accurate, consistent and affordable. Oct 18, 2017. https://health. economictimes.indiatimes.com/news/industry/iotwith-make-healthcare-more-accurate-consistent-andaffordable-chris-sullivan/61111297.
6. Friedman B. The Future of Healthcare: Virtual Physician Visits &Bedless Hospitals. Apr 01, 2013. http:// labsoftnews.typepad.com/lab_soft_news/2013/04/ the-future-of-healthcare-less-emphasis-on-hospitalvisits.html.
7. Belliveau J. What Is Healthcare Revenue Cycle Management? Jun 1, 2018. https://revcycleintelligence. com/features/what-is-healthcare-revenue-cyclemanagement.
8. Ayal, M., and A. Seidmann. 2009. An Empirical Investigation of the Value of Integrating Enterprise Information Systems: The Case of Medical Imaging Informatics. Journal of Management Information Systems 26, no. 2: 43–68.
9. Blumenthal D, Glaser JP. 2007. Information technology comes to medicine. N Engl J Med. Jun 14; 356(24):2527-34.
10. Blumenthal, D., M. Tavanner. 2010. The "Meaningful Use" Regulation for Electronic Health Records. N Engl J Med. 363(6): 501-504.
11. Reardon, J. L, and E. Davidson. 2007. An organizational learning perspective on the assimilation of electronic medical records among small physician practices. Eur. J. Inform. Syst. 16, no. 6 (12): 681-694.
12. Wilson, E V., and N. K Lankton. 2004. Modeling Patients' Acceptance of Provider-delivered E-health. J Am. Med. Inform Assn 11, no. 4 (July): 241-248.

13. Institute of Medicine, 2001. Crossing the Quality Chasm: A New Health System for the 21st Century, Washington, DC: Institute of Medicine, National Academy Press.
14. Kane, Gerard, and Maryam Alavi. 2007. "Information Technology and Organizational Learning: An Investigation of Exploitation and Exploration Processes," Organization Science (18:5). September-October, pp. 786-812.
15. Kaushal, Rainu, Kaveh G. Shojania, and David W. Bates. 2003. Effects of Computerized Physician Order Entry and Clinical Decision Support Systems on Medication Safety: A Systematic Review. Arch Intern Med 163, no. 12 (June 23): 1409-1416.
16. Indian healthcare services journals

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Impact of Digital Banking in India: Recent Trends & Challenges

Mr. Sanjaya Pawar
Assistant Professor, S.S.R.G Women's College Raichur, Karnataka (India)
Corresponding Author- Mr. Sanjaya Pawar
Email: sanjayapawar5555@gmail.com
DOI-10.5281/zenodo.8036325

Abstract

Different sectors play a very important role in the economic growth of any country. Banking sector is the most important aspect in the economic growth of India. The banking sector has become the backbone of the Indian economy. Any change related to technology or other aspects directly affects economic growth. With the change in technology, various changes are taking place in the banking sector. Now more and more customers are educated. They don't want to stand in line for various activities like: cash withdrawals, deposits cheques, opening bank accounts, deposit cash and more. As times have changed, digital banking has been introduced and it is the star of the banking industry. Nowadays, this concept of digital banking is very easily accepted and it is becoming the most popular way of doing business in the market within a short period of time. In this article, we will analyze the concept of digital banking. How it affects a person's life. The study is based on secondary data. The concept of digital banking offers many opportunities in the banking sector. But with every benefit comes risks. And this digital banking also comes with risks.

Keywords: Financial Inclusion, Digital Finance, Digital Payments, Financial Services, Innovative Financial Technology.

Introduction

Today, banks are a part of people's lives. Now the Government of India tries to create a cashless economy. Digital banking plays an important role in this era. Today, we found ourselves in a wonderland where a milkman takes cash payments without hassle, a man buys geometry kit worth Rs 100 with a credit card, and a greengrocer uses a QR code-based scan-and-pay system. New innovative digital technologies and great ideas have given birth to completely new business and social dimensions. Digital banking offers bankers solutions to meet their short and long-term business and technology needs.

Digital banking is a new paradigm in India that offers many benefits to the banking sector. This helps to increase the productivity and profitability of the banking sector. It is a technological innovation in a growing age. It is introduced mainly to improve the 4C namely Cost, Convenience, control and Customer Satisfaction. The Digital Banking Framework/Structure is the result of the collaboration of a group of IDRBT research team, bankers, IT professionals and consulting experts. The term digital refers to the storage of information in the form of digital signals. It can make banking easier. An ATM (Automated Teller Machine) is an electronic communication device. It is the best example of a digital banking system. Digital banking makes transactions very simple and easy. For example, SMS bank. Now every customer is free and does as he wants. Digital banking is part of a wider context of change an online bank, where banking services are provided via the Internet.

Literature Review

1. **Arunangshu** in his article focuses on the digitization of the banking system in rural India. Digital banking has a huge potential to change the landscape of financial inclusion. They found that the low-cost features and ease of use of digital banking could accelerate the integration of the unbanked economy into care.
2. **Aarti Sharma** in her research stated that digital banking is a milestone for the Indian economy. The study is analytical

in nature and based on secondary data. According to researcher, the impact of digital banking on the Indian economy. Due to the change in the technology of the banking system, the economy is also facing changes. It can provide better services to its customers. Due to its rapid growth, it is acceptable in the market. Now analyzing the benefits of digital banking, all the people in the market require it for overall growth and success.

3. **Vishal** conducted a study and found that customers always want security in cash transactions. This paper focuses more on the perception and opinion of users of urban mobile banking users. He focuses on practices, challenges and security issues related to mobile banking in India. It uses the quota sampling method. Data is collected from a primary data source. The sample size is 100 respondents who are divided into two categories: 50 mobile banking users and 50 non-users. The sample was taken from Ghaziabad city. It was analyzed that mobile phone user experience was most important in mobile banking because there were different phone models available in the market that supported different types of technology.
4. **Ankit and Singh** conducted a study to analyze the impact of Technology Acceptance Model (TAM) on internet banking adoption in India in terms of security and privacy threats. Taking the TAM proposed by Davis as a theoretical basis, the paper it was found that perceived risk had a negative effect on behavioral intentions to adopt online banking and trust had a negative effect on perceived risk. A well-designed website has also been found to facilitate ease of use as well as minimize the risks associated with online banking.
5. **Utpala** conducted a survey to assess the current state of e-banking in the market. From the primary data source, he analyzed the respondents' ratings of the online bank. This includes both Indian respondents and non-Indian respondents. They analyze the obstacles that customers face when using online banking. They found that 60% of city dwellers use digital banking. So it should be important for banks to focus on the rural population by creating information programs and training. This should help promote digital banking in India. 12. Hoehle notes that the use of digital banking channels has grown significantly. It focuses on customer-related issues. They analyzed that if the banks can use this digital banking system, it can improve the financial performance of the banks. Customers are looking for value and more demanding mobile banking services.
6. **Dr. Rachna Kalsan** paper entitled Impact of Digital Banking in India: Trends & Challenges. The researcher analysed role of Digital Banking among Adults life. The Pros, Cons and challenges of Digital Banking is analysed. The secondary source used to collect the data and analysed the study. Researcher concluded that most of the peoples are preferring the digital payment sytem in India.

Objectives of the study:

1. To highlight the recent trends in digital banking services in India.
2. To identify the hurdles and challenges of digital banking in India.
3. To analyse the digital payments in India

Research Methodology

The present study has focus on the impact of digital banking in India. The study is based on the secondary data. The data has been collected from various sources like annual report of RBI, information bulletin and journals of RBI. Tables are used to represent the consolidated data.

Evaluation of Digital Banking India

Definition:

1. "Digital banking - a new concept in the era of electronic banking, which aims to enrich standard online and mobile banking services by integrating digital technologies such as strategic analysis tools, social media communication, innovative payment solutions, mobile technologies and a focus on the experience of user".

2. "Digital banking is the application of technology that ensures the complete smoothness of banking transactions/operations ("STP in the old" language); customer initiated, which ensures the greatest possible benefit to the customer in terms of availability, utility and costs ; for the bank in the form of reduced operating costs, zero errors and better services."

The traditional banking system in India was the branch banking. The (MICR) Magnetic Ink Character Recognition based

cheques processing was introduced in 1986-1988. The late 80s marked the computerization of banks with the introduction of LPMs (Ledger Posting Machines). New economic policies drove the introduction of digital banking in India in the 90s. The year 1991-92 turns out to be successful thanks to rapid market growth. The biggest turning point was private and foreign land banks entered the Indian banking sector because of this new economic policy. This created tough competition and digitization trend is born. Now every bank wants to use digital banking services to provide better services to their customers.

Banks are now challenged by facilitate requirements that connect vendors with money through customer-specified channels. It is a dynamic format that is the basis of customer satisfaction. This can be maintained with customer relationship management (CRM) software. This is an important aspect of digital banking. It can communicate directly with customers. And this can be the basis for connecting both customers and bank management.

Recent Trends in Digital Banking Services in India

Digitization:

With the rapid development of digital technology, it has become to maintain banking and financial services in India monitor changes and develop new digital solutions technology clients. In addition, banking insurance, healthcare, retail, trade and commerce of major industries experiencing a huge digital transformation. Maintaining competitiveness is essential for banking the industry is jumping on the digital bandwagon. Modern trends in digital banking make it simpler, easier, paperless and branchless with many features like IMPS (Instant Payment Service), RTGS (Real Time Gross Settlement), NEFT (National Electronic Fund Transfer), internet banking and mobile banking. Digitization has created the convenience of "banking anywhere, anytime". This resulted in reduced costs and improved revenues generate and reduce human errors.

Mobile banking

Mobile banking is one of the most dominant trends in the digital world banking sector. Using your smartphone for a versatile workout banking services such as checking account balances and funds transfer and pay bills without a visit a branch. This trend has attacked traditional banking systems Changes in mobile banking are expected in a few years even more effective and easier to keep with the customer requirements Future trends in mobile banking point to acquisition IoT (Internet of Things) and voice-based payment Services will become tomorrow's reality. These voice-controlled services are available on smart TVs, smart cars and smartphones homes and all the wise.

Unified Payments Interface (UPI)

Unifed Payments Interface or UPI is one of the fastest and the most secure payment gateway that has changed completely how payments are made. Using a mobile phone it offers real-time interbank transactions anytime and wherever. The UPI payment system is considered to be the future retail banking in India. UPI is developed by National Payments Corporation of India and is regulated by the Reserve Bank of India. This revolutionary event system is introduced in 2016. This system allows money to be transferred 24x7, 365 days unlike other online banking systems. there are about 40 applications and 50 banks supports UPI transaction system. In post-demonetisation India, this system played an important role. Banking operations are expected to become "more open" with the aid UPI in near future.

Blockchain

Blockchain is the new buzzword in the digital world. They say it is to be the future technology of banking and financial services which works on the principles of computer science, data structures and cryptography and is its main component crypto currency. Without the ability to change it, Blockchain uses technology to create blocks that can be processed, verified and stored transactions. Niti Aayog is building India's largest blockchain network called India Chain, which is expected to change across multiple industries to minimize opportunities for fraud, improve transparency, speeding up the transaction process, less human manage and create an unbreakable database. Multiple aspects of banking and finance such as payments, clearing and settlement systems, exchanges and to the stock market,

business financing and lending are foreseen affected by the introduction of the

Chatbots

Chatbots are one of the emerging trends in Indian banking in the field More help in customer support services Private and nationalized banks in India have started to adopt chatbots or artificial intelligence bots. Still in use this technology is in its infancy and its use is should grow in the near future. Banks and finance institutions should adopt more chatbots higher intelligence to improve customer interactions and individual solutions. Technology is reducing opportunities for human error and delivers accurate solutions Customers. You can also detect fraud, compare inquiries and suggestions and assist in financial decision making.

Fintech companies

Fintech companies are leading the way technology to the world of banking and industry. Fintech Companies have become an important part of financing service sector in India. Huge in recent decades Investments were made in these companies and were made has evolved into a multi-billion dollar industry worldwide. Fintech companies and fintech applications have changed the way finance is done services are offered to customers. Some important ones the affected names are Paytm, PhonePe, policy bazar, MobiKwik, Shubh Loans, Lending Kart, PayU, Kissht and Faircen. Fintech companies have brought a huge improve financial services, customer experience and reduced the price paid. According to a report from the National Association of Software and Service Companies (NASSCOM), things are still working with the Indian market could be $2.4 billion by 2020.

Cloud banking

Cloud banking has taken the banking world by storm to show technology will soon find its place in banking and financial services sector in India. Cloud computing will organize and improve banking and financial operations. cloud-based technology means better information security, better flexibility and scalability, greater efficiency, faster services, solution, easier to integrate with newer technologies and applications. Besides, banks don't one has to invest in expensive software and hardware Updating information is easier India Chain network.

in cloud banking models

Wearable technology

Developing smart watch technology, banking financial services technology is also trying to evolve mobile devices for retail banking customers and where they are offered more control and easier access to your account. Wearable has completely changed the way we function in our daily lives activity Therefore, it is assumed that this technology is in the future in retail banking, offering greater banking services by clicking on the service's user-friendly interface portable device.

Biometric

Mainly for data security reasons, biometric authentication the system changes the politics and influence of national identity expected to be extensive. Banking and financial services is just one of many other industries feel the impact. With a combination of encryption technology and OTPs, biometric authentication is envisaged create a highly secure database that protects it from leaks and pirate companies. For enhanced security customer account and capital financial institutions in India explore the possibilities of this powerful technology.

Challenges and Obstacles of Digital Banking System in India

Lack of digital literacy

Digital for the older and uneducated change is a problematic thing. Literacy in India people is only moderate, only few are digital literacy. They are afraid to act digitally trading due to lack of knowledge and fear of doing so mistakes, because a small mistake leads to a huge financial loss. There is no digital without proper knowledge transition from cash to a cashless economy.

Cash dependent economy

More than half of India's population lives below the poverty line, without a bank account and unorganized. Most Indians depend on cash payments because they know more convenience and security of cash handling. Countryside Indians are not very familiar with digital banking due to lack of modern technology and illiteracy.

Data protection risk

Risk of disclosing personal data and

fear of identity theft is one of the most important deterrents for consumers when you choose digital banking services. The majority consumers believe that using online banking services will do this they are vulnerable to identity theft. According to the study consumers care about their privacy and believe that the bank can violates their privacy by using their data for marketing and other secondary purposes without

Security risk consent:

The security problem has become one a big concern for banks. A large number of customers refuse choose digital banking services due to uncertainty and security issues. Most internet users do not consume digital content banking in India for security reasons. So that's a big one challenge marketer and satisfies consumers of its security problems, which may worsen for use in digital banking.

Intense competition

Nationalized banks and commercial banks are competition with foreign and new private sector banks. Competition in the banking sector brings with it various challenges before banks, such as product positioning, innovative ideas and channels, new market trends, cross-selling notice at the administrative and organizational part of this system must be manage, steal and manage risk. Banks limit their activities administrative foil, turning work into a machine capacity i.e. banks reduce manual skills and receive the maximum work done by the power of the machine. Clever and one must use a specialized workforce and be results oriented the target staff is determined.

Low Internet Penetration

Digital bank transfer and online service available has evolved over the years. For cashless development affordable broadband and internet connection and its bandwidth should be improved and provided at an affordable price publishing Most cities have gotten rich by offering free Wi-Fi services even in railway and subway stations, shopping centers and cinemas. But still information and availability Internet access in rural India remains one of the biggest challenges before digital banking. So penetration Internet and online information are big obstacles which can be overcome by the joint effort of various people stakeholders.

Technology Management

Developing or acquiring the right technology, implementing it optimally and then use it to the maximum degree achieve and maintain high levels of service and efficiency standards being cost-effective and functional sustainable return for shareholders. Early adopters technology is gaining significant competition Therefore, technology management is a key challenge Indian Banking Sector.

Difficult for first timers

A single user browses a website using online banking can be difficult and time consuming. Account creation may also take some time if some sites require a range of personal information, including photo ID which may annoy the potential customer. Because of its complexity, they may not be able to use it on the Internet banking service Tutorials and live customer support can be but to help the client with the tasks he needs so it is best to spend time exploring the virtual environment.

Cybercrime

Cyber security is a major concern in the digital industry banking Most banking and financial applications are subordinated for cyber fraud or attacks. There's probably a reason money is an undeniable goal. Hackers have who are known to be innovative in their theft attempts whether big or small thousands of accounts over a long period of time. If there is no money directly, there is always a risk that the customer's information is endangered According to IAMAI reports, the majority Internet users are not using internet banking in India because for security reasons.

Regulation and legality

Digital banking services enable banks and their customers can do business anywhere in the world. This significantly increases the potential customer base of banks. A banking license makes it very difficult in terms of regulation control financial laws. In addition, the rules varies from country to country and banks not always competent in all financial laws of the countries in which they are located is a business The lack of skills opens the banks and their customers to violations and litigation.

Durability

An organization can achieve

sustainability as the leader is only possible through synergy. Only if users recognize the value of a product or service the value of the organization jumps to success and stays there. Social media is the powerhouse of digital banking is often overlooked. Although consistently good reviews are uplifting for the better position of the organization, consistently bad reviews can even destroy an entire empire.

Total number of digital payments across India from financial year 2017-18 to 2021-22

Now the time has changed. As technology changes, people's lives also change. He used to go to banks and does his own work. But now everyone is educated and adopting new techniques for their growth. Now nobody wants to go to the bank because of the problem of time everyone is busy with their work. I'm sure none of them want to stand in line to deposit or withdraw money. Everyone wants comfort and peace in their life. This banking system has been implemented in the past. Smart banking starts now and this smart banking has come into our lives and It is part of our life. Now all transactions are done through mobile banking. Now paying bills with mobile banking is very easy.

Year	No. of Transactions in billions
2017-18	14.59
2018-19	23.26
2019-20	34.00
2020-21	43.74
2021-22	71.95

Source: www.statista.com

From the above table we can say the number of transactions carried out through credit cards and debit cards are increasing from the year 2017-18 to 2021-22. Indians prefer a digital-first approach to banking, and will not hesitate to protest poor service, finds a survey by Avaya. 51% of Indians use online banking channels. 26% of Indian customers prefer to access services via their bank's website, and the same number would prefer to use a mobile app rather than talk to a human agent

Conclusion

Digital banking occupies a large market share. Today, with the development of technology, there has been a change in the banking sector. Now every customer accepts digital banking for their convenience. But with this success comes some shortcomings. So there are some technical issues that affect the customer perception. According to the survey, there are 562 million active digital banking users in India. Digital banking makes conventional banks an even better and more efficient place to operate. The digital banking service makes all transactions easier for customers. They can easily pay their bills, find convenient locations, transfer money from one place to another and easily check their bank details. Growth of digital banking in India can help in various things like growth of capital market, growth of insurance sector, growth of venture capital market.

References

1. Sharma Aarti, "Digital Banking in India: A Review of Trends, Opportunities and Challenges", IRJMST, vol. 8, issue 1, PP. 1680 180.
2. Aladwani A.M, "Online Banking: A Field study of drivers, development, challenges and expectations", International Journal of Information Management, vol. 21, pp. 213- 225.
3. Rajeshwari M, "Digital Banking and Indian Perspective", International Journal of Economics and Finance, Vol. 10, issue 3, pp. 1- 5.
4. Jindal Kiran, "Customer Awareness and Preference for Digital Banking offered by HDFC Bank: An Empirical Study", Journal of Internet Banking and Commerce.
5. Avasthi G.P., "Information Technologi in Banking: Challengers for regulators", Prajnan International Journal, vol. 4, pp. 3- 17.
6. Vishal G, "Mobile Banking in India: Practices, Challenges and Security Issues", International Journal of Advanced Trends in Computer Science and Engineering, vol. 1, pp. 56- 66.
7. Vanmali Utpala, "Digital Banking-Roadway to Success", International Journal of Marketing & Financial Management, vol. 4, issue 8, pp. 39- 47.
8. http://www.intel.in/content/dam/doc/financialservices- the impact of mobile

banking.pdf.

9. Herzberg, "Payments and Banking with Mobile Personal Devices", Communication of ACM, vol. 46, issue 5.
10. Sardana Varda, "Digital technology in the realm of Banking: A Review of Literature", International Journal of Research in Finance and Management, vol. 1, issue 2, pp. 28- 32.
11. Golden Anthony, "An Overview of Digitization in Indian Banking Sector", Indo- Iranian Journal of Scientific Research, vol. 1, issue 1, pp. 209- 212.
12. Dr. Kalsan Rachna "Impact of Digital Banking in India: Trends & Challenges" International journal for research in engineering application & management, ISSN 2454-9150 Vol-5 Issue-5

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Awareness of Cyber Crime and Security

Hasina Agasimani[1], Prof. V. B. Korishetty[2]
[1]Research scholar, Dept of Sociology, KSAWU Vijayapura
[2]Research guide, Dept of Sociology, KSAWU Vijayapura
Corresponding Author- Hasina Agasimani
Email: afriidgaradimani@gmail.com
DOI-10.5281/zenodo.8036329

Abstract:

For most people, using the internet for daily transactions has become commonplace. Both internet usage and cyber crime have significantly increased. Cyber crime is any crime committed via a computer or network. In both the private and professional sectors, the threat of cyber crime is a constant and growing reality. Old crimes have a new look since the internet's invention. The goal of this study is to raise awareness about the cyber crimes that are occurring in the modern world as well as about the need for greater cybersecurity. This essay aims to examine the degree to which internet users of various ages and educational backgrounds are aware of cyber crime. Both objectives have been analysed using a linear regression model. This study discovers a connection between the respondents' respondents' age groups and educational backgrounds. Therefore, it is the responsibility of each and every internet user to understand cyber crime and security and to spread this knowledge to others.

Keywords: Cyber-crime, Cyber criminals, Cyber security, Internet, IT Act, Awareness.

Introduction: Everything is altered by the internet. It has challenged our preconceived ideas about how things ought to operate, including how governments ought to be run, businesses ought to be run, teachers ought to instruct students, and even housewives ought to create new dishes. It muddles our intellectual foundation of what we believe to be true about the world, other people, and ourselves. It is simultaneously freeing, thrilling, difficult, and terrifying. Most individuals still find the Internet to be mysterious, intimidating, confusing, and frightening.

The Internet has grown tremendously, and with that expansion have come more chances for cyber crime. Computer crimes increasingly encompass extortion, child pornography, money laundering, fraud, software piracy, and corporate espionage, to mention a few, as a result of the Internet's rapid adoption across the globe. Law enforcement officials have expressed frustration over legislators' incapacity to keep cyber crime legislation abreast of the rapidly advancing technology landscape. 'Cyber crime' is a misnomer. In no statute or Act passed or adopted by the Indian Parliament is this term defined. The idea of cyber crime is similar to the idea of traditional crime in many ways. Both include actions, whether deliberate or not, that violate the law and are punished by the government. It is evident that the concept of conventional crime must first be evaluated, and that the similarities and differences between these two forms of crime can then be examined.

Definition of Cyber Crime:- "Any unlawful act where computer, communication device, or computer network is used to commit or facilitate the commission of a crime" is one definition of cybercrime.

Cybercrime Helpline Number:- The Cyber Crime Helpline Number is 155260.

Types of Cyber Crime

For practically all cybercrimes, a computer is a necessary instrument. The number of weapons in the arsenal of hackers is anticipated to increase as more devices are made capable of communicating with the Internet. A computer may be the object of the crime, the instrument used in the crime, or it may hold the evidence of the crime. Criminal statutes will develop from the many usage of computers. The criminal intent is to

steal information from or harm a computer, computer system, or computer network when a computer is the intended victim of the crime.

Computer-targeting crimes include hacking, cracking, espionage, cyberwarfare, and malicious computer viruses. Teenagers, college students, professionals, or terrorists could be the culprits. The computer might also be the offender's tool. The cyber criminals use the computer to carry out more conventional crimes, like printing counterfeit money on high-tech colour printers. Although they may be unrelated to the crime, computers are nevertheless significant since they hold the evidence of a crime. For instance, child pornographer computers may have child content that was created, owned, received, and/or distributed. Instead of relying solely on paper accounting records, money launderers may use computers to keep information about their laundering operation.

Categories of Cyber Crimes:

Based on their target and effects, the four basic categories of cybercrime can be broadly divided into the following groups:

1. Crimes against Individuals:

These crimes are committed with the intention of hurting certain people. These include child pornography, assault by threat, denial of service attack, forgeries, and phishing. They also include hacking, cracking, email harassment, cyber-stalking, cyber-bullying, defamation, and the spread of offensive information.

2. **Crimes against Property:**

There are cybercrimes committed to damage a person's property.Intellectual property crimes, cyber-squatting, cyber-vandalism, computer hacking, computer vandalism, computer forgery, transmitting viruses and malicious software to damage information, Trojan horses, cyber trespass, Internet time thefts, robbery or stealing money while money transfers, etc. are some of the categories they fall under.

3. **Crimes against Government /Firm /Company /Group of individuals:**

These kinds of crimes include online jacking, salami attacks, logic bombs, possession of unauthorised information, distribution of pirated software, cyber terrorism, etc. These crooks intend to terrorise the nation's residents.

4. **Crimes against Society:**

All of the aforementioned crimes have an impact on society as a whole, whether directly or indirectly. Therefore, all such crimes—including pornography, online gambling, forgery, the selling of illegal goods, phishing, cyberterrorism, etc.—are included in this.

Objectives of the study:

1. To investigate the association between people education level and their knowledge of cybercrime and security.
2. To investigate the association between the various age groups and their knowledge of cyber-crime and security.
3. To determine how often the respondents use the internet.
4. To determine the degree of awareness among internet users of cyber-crimes related safety when using personal computers and the internet.

Literature Review:

Mehta and Singh (2013): The author carried out a poll to determine how well-known cyber regulations are in Indian society.He discovered that there is a large gap in awareness between male and female internet service consumers. In comparison to female users, male internet users are more knowledgeable about cyber regulations.

Hasan *et al.*, (2015): An investigation into Malaysia's understanding of cybercrime revealed that female students are more knowledgeable about it than male students are.

Agarwal (2015): In her essay, the author covered the various forms of cybercrime and the laws created to address them. Her goal was to determine whether online users were aware of cybercrimes. She also underlined that it is everyone's responsibility to be knowledgeable about cybercrimes and cyberlaws.

Archana Chanuvai Narahari and Vrajesh Shah (2016): To determine if netizens are actually aware of cybercrimes, the author of this article performed a survey with 100 respondents. They discovered that although the respondents were somewhat aware of cybercrimes and cyber security, there was still a need to raise awareness. Additionally, they proposed a conceptual framework outlining how to maintain and carry out campaigns to educate internet users about cybercrimes.

Number of cyber-crimes reported in India 2012-2021

India saw a significant jump in cyber-crimes reported in 2021 from the previous year. That year, over 52 thousand cyber-crime incidents were registered. Karnataka and Uttar Pradesh accounted for the highest share during the measured time period. Uttar Pradesh leads the way. The northern state of Uttar Pradesh had the highest number of cyber crimes compared to the rest of the country, with over six thousand cases registered with the authorities in 2018 alone. India's tech state, Karnataka, followed suite that year. A majority of these cases were registered under the IT Act with the motive to defraud, or sexually exploit victims. It's a numbers game It was estimated that in 2017, consumers in India collectively lost over 18 billion U.S. dollars due to cyber crimes. However, these were estimates based only on reported numbers. In a country like India, it is highly likely that the actual figures could be under-reported due to a lack of cyber crime awareness or the mechanisms to classify them. Recent government initiatives such as a dedicated online portal to report cyber-crimes could very well be the main factor behind a sudden spike in online crimes from 2017 onwards

Cyber Crime & Securit: As internet usage continues to increase, so does the amount of personal information and data that is made available online. This could be out of choice, for example, somebody providing personal details to a social network in order to use their service - or it could be unwillingly, as a victim of a cybercrime attack or data breach. With the development of various AI tools, cyber-crime is currently transforming. Therefore, the risks to individuals, companies, organizations, and governments have never been greater

Value of expenditure towards cyber security India 2019-2022, by sector

India's banking, financial services and insurance sector had the highest expenditure on cyber security, amounting to over 500 million U.S. dollars in 2019. This was estimated to go up to over 800 million dollars by 2022. The information technology and services sector came second with cyber security expenses worth over 430 million dollars in 2019.

Suggestions: Cyber-crimes are also on the rise along with the number of internet users. Cybercrimes come in many different forms, and they occur frequently. However, the public is unaware of all such varieties. Most people just have a basic understanding of hacking and viruses/worms. Phishing, defamation, identity theft, cybersquatting, etc. are not known to them. Knowing about these online crimes is essential in today's environment. The study reveals that 48% of respondents disclose their personal information with people they don't know well.According to 55% of respondents, malware frequently harm PCs.

Spam emails, phishing calls, and emails requesting sensitive information such a cellphone number, bank account, address, etc. caused problems for internet users. Each of us has a responsibility to understand the fundamentals of cyber security. Cybersecurity is the term for the systems and procedures used to safeguard computers, networks, and data from unauthorized access and online attacks by noncriminals. a) To safeguard the computer from risks like viruses and worms, install security suites like Avast Internet Security, Kaspersky antivirus, McAfee antivirus, Norton Antivirus, etc.

b) Turn on your antivirus software, firewall, and network threat protection.

c) Always use secure passwords, ideally ones that are alphanumeric.

d) Only share personal information over secure websites or by phone.

e) When opening emails from unknown senders, avoid clicking on links, downloading files, or opening attachments.

b) Be wary of links in emails that pop up or request personal information.

g) Verify that the computer operating system and all antivirus applications are up to date.

h) Verify that a website's URL, HTTP addresses, and other addresses are spelt correctly.

Conclusion

The government is also attempting to control cybercrimes. It has created cyber laws to aid in educating the public about various forms of cybercrime and cyber security. The Information Technology(IT) Act of 2000 addresses cybercrime. To catch the offenders, both the government and the populace should cooperate. Anyone who has experienced one of these cybercrimes should come forward and report them to specialized cybercrime cells. This will undoubtedly aid in the fight against cybercrime. Therefore, it is imperative that people are informed of

cybercrimes and security. People who spend a lot of time online now face challenges due to the rising internet usage rate. In 2017, there were 12.49 percent more mobile phone internet users than in the previous year, and 23.93 percent of people used their phones to access the internet. In 2022, this percentage is projected to increase to 34.85 percent. 2017 (statista.com).As a result, greater internet use has opened the floodgates for cybercrime. Lack of knowledge about these matters will harm moral, emotional, economical, and ethical foundations.

In such a worrying situation, raising awareness among internet users about "cybercrimes and security" is a matter that needs to be prioritised over combating cybercrimes. Therefore, the current study's primary goal is to determine the answers to the troubling question, "Are people really aware that they are vulnerable to various cyber-crimes?" "If they are aware, to what extent are they aware?" and "If not, what steps can be taken to make them more informed and aware?"

References:

1. Aggarwal, Gifty (2015), General Awareness on Cyber Crime. International Journal of Advanced Research in Computer Science and Software Engineering. Vol 5, Issue 8.
2. Aparna and Chauhan, Meenal (2012), Preventing Cyber Crime: A Study Regarding Awareness of Cyber Crime in Tricity. International Journal of Enterprise Computing and Business Systems, January, Vol 2, Issue 1.
3. Archana Chanuvai Narahari and Vrajesh Shah (2016).Cyber Crime and Security – A Study on Awareness among Young Netizens of Anand.International Journal of Advance Research and Innovative Ideas in Education.Vol-2 Issue-6.
4. Avais, M. Abdullah et.al. (2014), Awareness regarding cyber victimization among students of University of Sindh, Jamsharo. International Journal of Asian Social Science, Vol. 4(5): 632-641
5. Hasan et al., (2015), Perception and Awareness of Young Internet Users towards Cybercrime: Evidence from Malaysia. Journal of Social Sciences, Vol. 11 (4): 395.404
6. Jamil D. and Khan M.N.A. (2011), Data Protection Act in India with Compared To the European Union Countries. International Journal of Electrical and Computer Sciences, Vol: 11 No: 06.
7. Tanushree Basuroy,Oct 13, 2022
8. Anupreet Kaur Mokha Assistant Professor, SGTB Khalsa College, University of Delhi
9. Parmar, Aniruddhsinh and Patel Kuntal (2016), Critical Study and Analysis of Cyber Law Awareness among Netizens. Conference: International Conference on ICT for Sustainable Development, At http://link.springer.com/chapter/10.1007%2F978-981-10-0135-2_32, Volume: 409
10. Singaravelu, S and Pillai, K. Perumal (2014), B.Ed. Students Awareness on Cybercrime in Perambalur District. International Journal of Teacher Educational Research (IJTER) Vol.3 No.3 March.
11. The Times of India(July 22, 2017), http://timesofindia.indiatimes.com/india/one-cybercrime-in-india-every-10-minutes/articleshow/59707605.cms
12. www.statista.com,2016, https://www.statista.com/statistics/309020/india-mobile-phone-internet-user-growth/
13. http://www.ncrb.nic.in
14. Eric J. Sinrod and William P Reilly, Cyber Crimes (2000), A Practical Approach to the Application of Federal Computer Crime Laws, Santa Clara University, Vol 16, Number 2.

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Digital Literacy and Empowerment of Indian Women

Prof. Vijaya.B.Korishetti
Department Of Sociology, Karnataka State Akkamahadevi, Womens University, Vijayapur
Corresponding Author- Prof. Vijaya.B.Korishetti
DOI-10.5281/zenodo.8036356

Abstract:
This paper explores the empowerment of women through digital literacy. This article explains the need for expansion of digital facilities for the empowerment of Indian women. Digital literacy is needed for women to enable them to have right access to education, right access to employment and right access to equitable resources. Besides this empowers them with right decision making power, to fight against societal discrimination. It focus on the role of digital literacy in the economic empowerment women in India. It suggest the required measures and strategies for the upliftment of Indian women

Keywords: Digital literacy, women empowerment, Programmatic Pillars, Gender Inequality, strategies

Introduction

"We use the Internet to make our dreams possible. To make our communities better places for us. Safer places. And we become, more and more every day, the rulers of our destinies."

Jacqueline Patiño, Bolivia

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.

Digital revolution has made technology an art of adapting & knitting pieces together evaluating possible strategies & understanding requirements & limitations of functionality outcomes, It is reported by GSMA 2015 that nearly 72% of the women do not have access to mobile phones , only 8% of the women have access to Internet in Urban areas while it is 12 % in rural India .National policy for the empowerment of women 2001 has enjoyment of common rights.

Concept of Digital Literacy

Digital literacy is an individual's ability to find, evaluate, and communicate information by utilizing typing or digital media platforms. It is a combination of both technical and cognitive abilities in using information and communication technologies to create, evaluate, and share information.

While digital literacy initially focused on digital skills and stand-alone computers, the advent of the internet and the use of social media has resulted in a shift in some of its focus to mobile devices. Similar to other evolving definitions of literacy that recognize the cultural and historical ways of making meaning, digital literacy does not replace traditional methods of interpreting information, but rather extends the foundational skills of these traditional literacies. Digital literacy should be considered a part of the path towards acquiring knowledge.

Digital Literacy for Women

People need a basic understanding of and ability to use digital media to work effectively in today's society and use

technologies in a meaningful and multiple way. The ability to use a computer, a smart phone, the internet, e banking, a website, operating through an e commerce site, as well as basic operating systems and software applications, can be considered digitally literate. In addition to higher education, digital and internet literacy is an essential and important tool that makes women truly employable and empowered.

It is noteworthy that there is a huge gap between the digital literacy levels of men and women in India. Among Indian women, less than 29 percent use the internet. However, the number of male internet users in India is more than 52%, which is not surprising. More and more male internet users are joining every day at a staggering rate, while female internet users are growing much more slowly. The majority of women are still dependent on men for many different purposes due to their lack of digital literacy. Due to such factors, they lack confidence in their communication skills, suffer from low self-esteem, illiteracy, doing day to day work on internet , a poor knowledge of news or even digital transactions, doing digital formalities for different reasons, etc.

Women's access and literacy to digital technologies and the Internet can enable them to become more productive and career-oriented. The importance of providing women with basic knowledge and the proper exposure to the Internet and digital technologies allows them to start their own businesses, fight for their rights, and become financially independent, thus benefitting society and the country in the long run.

Concept of Women's empowerment:

The "expansion in (women's) ability to make strategic life choices in a context where this ability was previously denied to them" (Kabeer 2001, cited in Malhotra, Schuler, and Boender 2002, pp 6). In this view, the constituent elements of choices are: "resources, which form the conditions under which choices are made; agency, which is at the heart of the process through which choices are made and achievements, which are the outcomes of choices" (ibid, pp 8). Most importantly, the process of choices has to come without "punishingly high costs" (Kabeer 2005). Agency, or the power that women have to make and act on their life choices in relation to empowerment, implies "not only actively exercising choice, but also doing this in ways that challenge power relations". Therefore, "empowerment is, first and foremost, about power; changing power relations in favour of those who previously exercised little power over their own lives" (Sen 1997, cited in Cornwall 2014). This power stems from "control over material assets, intellectual resources, and ideology" (Batliwala 1994, cited in Cornwall 2014).

Programmatic Pillars of Digital India

Digital India is a flagship programme that seeks to transform India into "a digitally empowered society and knowledge economy" by 2018 (Government of India Cabinet, 2014). It was approved by the Union Cabinet in August 2014 with the objective of providing "intensified impetus" to existing e-governance initiatives and promoting "inclusive growth" by leveraging new manufacturing and job opportunities, especially in electronic manufacturing and IT-enabled services. The focus of the programme is defined in terms of nine key areas, termed the "programmatic pillars". They are summarised below :

1. Building national broadband highways: Expanding the National Optic Fibre Network to provide high-speed broadband to all 2,50,000 Gram Panchayats, and developing the National Information Infrastructure: an integrated high speed and network infrastructure for ensuring connectivity to government offices from state upto Gram Panchayat level.
2. Universal access to mobile connectivity: Increasing mobile network penetration and coverage of gaps in the connectivity grid.
3. Public Internet access programme: Setting up Common Service Centres, Internetenabled kiosks at the village level to provide access to digitalised public and private services for citizens, in all 2,50,000 Gram Panchayats of the country, under a franchisee model involving village level entrepreneurs; and converting 1,50,000 post offices across the country to digitalised multi-service centres.
4. Reforming Government through technology: Transitioning to integrated e-service delivery through business process re-engineering, work flow automation, and the systemic adoption of the digitalised unique citizen identification system provided by Aadhaar.

5. E-kranti / electronic delivery of services: Supporting the development of eservices and m-services by various sectoral ministries and agencies.
6. Information for all: Strengthening online access to information and open data for citizens, and promoting online citizen engagement through the MyGov portal.
7. Electronics Manufacturing: Ensuring net zero imports of electronics by 2020.
8. IT for Jobs: Opening up new job opportunities for individuals in villages and small towns, through digital literacy drives and enskillment, and promoting the establishment of BPOs in these areas.
9. Early Harvest Programmes: Initiating short term projects for digitalisation, mainly pertaining to in-house administration of government departments and establishment of Public Wi-fi.

The nine pillars are seen as jointly contributing to the realisation of three core objectives: the provisioning of digital infrastructure as a core utility, shifting to an e-governance paradigm that guarantees services on-demand, and the digital empowerment of all citizens. Since the programme's launch in 2014, the rhetoric of Digital India has been associated with a wide gamut of initiatives. The Prime Minister and members of his cabinet, particularly the Union Minister of Electronics and IT, have deployed the term in relation to a range of initiatives, in the media and in public events. Particularly noteworthy among these initiatives are the Skill India campaign that aims at training 40 crore youth by 2022, for employability in the current context where manufacturing is being restructured by technology, and the Stand up India, Start up India campaign that seeks to promote medium, small and micro enterprises (MSMEs), against the backdrop of the emerging digital marketplace. 'Aadhaar-enablement' in relation to e-service delivery is another important theme in officialspeak. In his public speeches, the Prime Minister, on more than one occasion, has highlighted how "Aadhaar has enabled people to get the entitlements that they rightfully deserve" (IndiaToday, 2017) and in keeping with Digital India's emphasis, "greatly helped reduce corruption and bring transparency in the country". Innovations through Digital India are also sought to be linked to the idea of "Minimum Government, Maximum Governance

'Women's empowerment', however, features rather prominently in popular discourse and official narratives on Digital India, including public statements and speeches by the Prime Minister and members of his Cabinet. The Start up India campaign has been seen as critical for promoting women-owned MSMEs in the digital economy. For example, in his 2015 Independence Day address, the Prime Minister announced that the Start up India campaign would ensure that "the country could, in no time, have at least 125000 startups by women and Dalits". Similarly, the 2,50,000 Common Service Centres – Internet-enabled one-stop-shops that provide access to egovernment services and other commercial digital services to rural communities across the country – have been celebrated for opening up opportunities for women to become digital entrepreneurs in their villages. The Union Minister of Electronics and IT, Shri Ravi Shankar Prasad, has heralded these centres as catalysts of "an information technology revolution for social change that is led by women" (Abbas, 2016) and "a digital revolution for women's empowerment".

Need for Digital Literacy for Women Economic Participation

Globally, millions of jobs have been created as a result of the support, access, and use of digital technology. If digital technology is used more widely in society it could create a million more jobs. Increasing the focus on digital literacy among women will provide them with the opportunity to actively participate in the economy. Women who are economically empowered will be able to support their families and communities in an unprecedented way. There will be an increase in the families' monetary fluency and a rise in the national gross domestic product. The role of women as catalysts for nation and society building will be enhanced with the proper digital literacy among women in our society.

Disruption of Gender Inequality

With an increase in digital literacy in our society, we will be able to alleviate many of the issues associated with gender inequality. In addition to the oppression that women face as a result of gender inequality, they are also the victim of many heinous crimes as a result of it. As women become

more digitally literate, they will be able to participate in digital campaigns to protest crimes against women, domestic abuse, child marriage, etc. In the digital age, women can protest and stay safe and reduce the number of crimes against women by having access to social media.

Increased awareness

We all know that the Internet is an interim access to the vast amounts of information that exist out there. By having access to social media and search engines, women are able to find the answers to all their questions, which increases their self-awareness and global awareness. In addition, it allows them to educate themselves and stimulate their creativity. Despite the fact that they do not have to travel, they are able to look at the world and enrich their knowledge with new experiences. Regaining a sense of agency in their education teaches them new skills and develops new interests. In turn, it will improve their communication skills, thought processes, lifestyle, self-confidence and many more. Remember, knowledge is a weapon when only a few have it, but it becomes a power when society is blessed with it.

Overcome Traditional Limitations

In most developing countries, including in India, women face structural and social barriers that limit their ability to participate in many outdoor activities. Considering patriarchal society's traditional gender roles, the primary role of a woman in a family is to take care of the household and to keep them from pursuing further knowledge. There may not be a direct solution to the issue of gender inequality in this way, but it has the potential to provide a nudge towards newer approaches. Women who are unaware of their rights and are not permitted to know about them will be able to begin to stand up for themselves and others, which will benefit a much larger cause, namely gender inequality. Digital literacy has the potential to help them greatly in this regard.

Economic Empowerment of women through digital literacy

Over recent decades, India has made impressive gains in reducing poverty and improving lives and livelihoods, lifting more than 270 million people out of poverty between 2006 and 2016. Yet, despite these gains, women's economic empowerment continues to lag. Before the onset of the COVID-19 pandemic, less than one in four women in India was estimated to participate in the labour force compared to more than three in four men. This stark gap was already amongst the highest in the world – and the impact of COVID-19 has only widened it further. The pandemic increased the use of digital technology and opened new platforms for e-commerce and online learning, enabling access to markets that were previously out of reach for women micro-entrepreneurs and women's collectives.While digital technologies and digitalisation can open important new opportunities for women, the existing digital divide risks leaving many vulnerable women behind. India's Fifth National Family Health Survey released in December 2020 reveals that only 43 percent of women have ever used the internet, and for rural women that figure drops to just 34 percent.Improving digital literacy and expanding access to digital technologies is critical to tackling this digital divide and enabling women from all walks of life to benefit from digital transformation.

Digital divide and gender gaps in internet accessibility is a key factor in augmenting economic resources for national progression. A nation can manage to reflect positive progress only when the gender gaps are very less or comparatively negligible. The Societal setup in rural India differs from Urban India and social cultural restrictions on women following their gender limitations are very much discernible. The Indian social value system do not allow women to share resources as with male counterparts. There are about 2,50,000 panchayats 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 specially 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 males literacy points. The school dropout ratio needs to be focused with strong education policy. The patriarchal restriction have to eased 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 , hence her community have to support her towards empowering them with responsiveness on equal rights of women.

Empowerment of women through digital literacy strategies

Women face challenges towards access to technology & information skills. Need for awareness creation- There is a necessity to extend digital literacy support to women through access packages including

1	Training on digital literacy
2	Simplified learning sessions for illiterate women
3	Comfortable tutoring about digital usage
4	User friendly environment creation
5	Easy applications for easier handling

1. Establishing a corporate alliance towards coordination of programs for promotion of gender equality.
2. Ensuring health safety and addressing barriers towards removal of barriers towards accessing health care .
3. Promotion of equality and creating awareness on human rights, child rights ,labour rights.
4. Measures of achieving gender equality through curriculum content development. This would serve to create responsiveness among children through education.
5. India government initiatives are good.

References:

1. Kabeer, N. (2005). Gender equality and women's empowerment: a critical analysis of the third Millennium Development Goal. Retrieved from http://eprints.lse.ac.uk/53087/, 2005
2. Malhotra, A., Schuler, S. R., Boender, C. (2002). Measuring Women's Empowerment as a Variable in International Development, pp6. Retrieved from https:// siteresources.worldbank.org/INTGENDER/Resources/MalhotraSchulerBoender.pdf , June 28, 2002.
3. Sen, J.(2017, July 20). Errors and Exclusion Mark Jharkhand's Aadhaar-MGNREGA Link. Retrieved from https://thewire.in/158692/aadhaar-card-jharkhand-mgnrega/
4. Government of India Cabinet.(2014). Digital India – A programme to transform India into digital empowered society and knowledge economy.[Press Release]. Retrieved from http://pib.nic.in/newsite/PrintRelease.aspx?relid=108926
5. Anita Gurumurthy & Nandini Chami, Digital India Through A Gender Lens, Research Report Submitted To Heinrich Böll Foundation January 2018
6. Smitha H S., Empowerment of women through digital literacy strategies - new challenges, IOSR Journal Of Humanities And Social Science (IOSR-JHSS) PP 21-23, www.iosrjournals.org

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Migration of Paper Based Funds Movement to Electronic Funds Transfers

Dr. Jayashree Beerappa
Assistant Professor, BLDEA's SBS, Arts, Commerce & Science College for Women, Vijayapur.
Corresponding Author- Dr. Jayashree Beerappa
Email: jrkotnal@gmail.com
DOI-10.5281/zenodo.8036362

Abstract:

Payment systems in India have a chequered history with the earliest system being coin based which dates back to many centuries. Paper based systems entered the fray with the loan deeds (or hund is as commonly referred to), which were complemented in the eighteenth century by paper based currency. With banking becoming a dominant economic facilitator in the mid nineteenth century, cheques also came into the scene. The passage of the Negotiable Instruments (NI) Act, 1881 paved the way for large scale usage of cheques in the country.

Recent initiatives by the Reserve Bank - in the form of providing for electronic payment systems and the Real Time Gross Settlement (RTGS) System - have provided a sound foundation for the more safe of migration, secure and efficient payment systems. While these systems have been registering growth rates which are encouraging, the potential to migrate from paper based cheques to other electronic means of funds movement is high. Against this backdrop, Governor had indicated that the entire issue relating to migration of paper based funds movement to electronic funds methods be analysed.

Key Words: RTGS, NEFT, RBI, Electronic Fund transfer.

Introduction

Payment and settlement systems found the support of any economy. In India, payment systems are considered by the presence of a large quantity of paper based transactions, with cheques creating more than 80%in terms of volume. Reserve Bank has recently initiatives - in the form of electronic payment systems and the Real Time Gross Settlement (RTGS) System - have provided a complete foundation for more safe migration, efficient and secure payment systems. While these systems have been recording growth rates which are boosting, the potential to migrate from paper based cheques to other electronic means of funds movement is high. Governor had showed that the whole issue relating to migration of paper based funds movement to electronic funds methods be analysed. Accordingly a Group comprising the Chief General Manager-in-charge, DIT, Chief General Manager, DPSS and the Regional Director for Maharashtra and Goa was constituted. The Group deliberated on various related aspects and the recommendations along with implementable, time-bound action plans are enclosed.

1. Overview

Payment systems in India have a chequered history with the earliest system being coin based which dates back to many centuries. Paper based systems entered the fight with the loan deeds (or hundis as commonly referred to), which were complemented in the eighteenth century by paper based currency. With banking becoming a dominant economic facilitator in the mid nineteenth century, cheques also came into the scene. The passage of the Negotiable Instruments (NI) Act, 1881 covered the way for large scale usage of cheques in the country. Today, after the passage of more than twelve decades, the NI Act remains the basic law governing cheques; but the usage of cheques as a significant payment system has grown by leaps and bounds to cover more than 80% of the payment systems in the country in terms of volume.

Technological advancements the world over have had a positive impact on payment

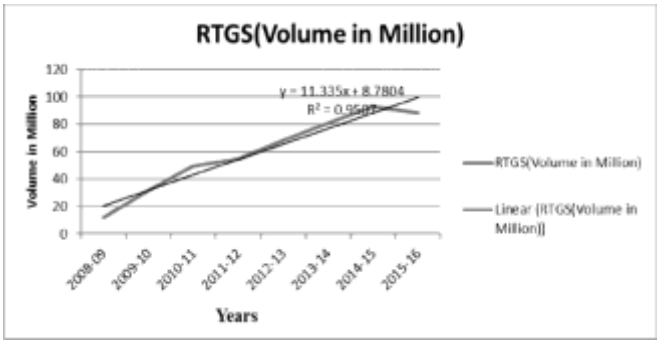
and settlement systems. The Reserve Bank has been, since the late eighties, spear heading reforms in the payment and settlement systems of the country using the benefits derived from technological developments. The most important set of initiatives taken by the Reserve Bank from the nineties of the twentieth century was the introduction of electronic funds transfer systems. While the facilities for small value and repetitive transactions set initially systems provided facilities, the retail sector, the introduction of the Real Time Gross Settlement (RTGS) System in 2004 Systemically Important Payment Systems (SIPS) witnessed the infrastructure, which also ensured that the risks in Deferred Net Settlement (DNS) systems are taken care of. Usage of electronic payment systems has been showing increasing trends which are encouraging. With general customer awareness on the rise and the implementation of core banking systems by banks, the time is now appropriate to review the progress made in the use of electronic systems. There is a need for customers of banks to switch over to large scale usage of electronic modes of funds transfers. The Group deliberated at length on the various aspects relating to the pros and cons of each of the available systems and the measures which could be taken up for implementation on a time bound basis.

2. Electronic Funds Transfers

Indian payment systems have one of the features the comfort and confidence reposed by constituents of banks on paper based modes of funds transfer. Cheques are used for transfer of funds for two major categories of transactions - those which relate to systemically important payment and settlement systems (such as the Securities and Equity market transactions, large value funds movement and bank-to-bank movement of funds), and those which pertain to other systems such as retail payments as well as other small value payments. Electronic means are of recent origin but their increasing usage by customers suggests that this is becoming one of the popular means of funds transfer. The existence of a bouquet of systems suiting the requirements of each customer / purpose is a facilitating factor in this regard. Further, the fact that these systems are supported by the central bank adds to the levels of confidence among the users.

As the Payment and Settlement Systems hold more and more technology it is important that large value transactions often called Systemically Important Payment System (SIPS) transactions take place electronically The SIPS form an important component of the payment systems of the country. A working Group on SIPS (2001; Chairman: Shri K. R. Ganapathy), had categorised the following as SIPS:

1. The Interbank Clearing System;
2. The High Value Clearing System;
3. The Equities Clearing and Settlement Systems of the Stock Exchanges;
4. The MICR Clearing System;
5. The Government Securities Clearing System;
6. The Foreign Exchange Clearing Systems; and,
7. The Real Time Gross Settlement System.



Source: secondary source, using RBI data

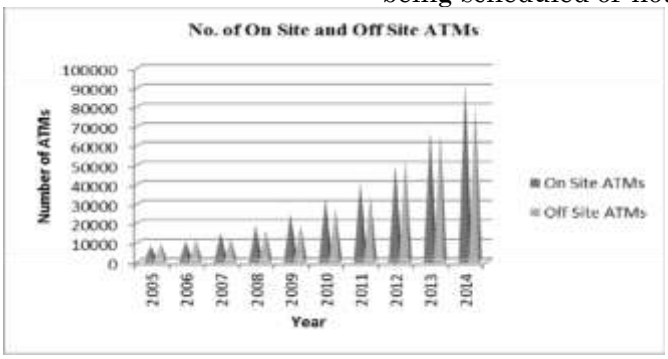
With the introduction of the Real Time Gross Settlement (RTGS) System, the Inter-bank clearing has been discontinued and the paper based funds settlement through the Inter-bank clearing has now been replaced by the electronic, credit transfer based RTGS system which minimises systemic and settlement risks. Although RTGS is available for inter-bank funds transfers, it has been noticed that a few inter-bank transactions still get settled

through the paper cheque route as all banks, PDs etc are still not members of RTGS.

In view of the systemic importance of the inter-bank transactions and since these take place only amongst banks; it is proposed that Reserve Bank may mandate that all major RBI inter-bank transactions among commercial banks having accounts with are directed only through the RTGS system**.** A time frame of 6 months would be sufficient to implement this. The Bank could indicate right away to banks that all inter-bank transactions should be effected through the RTGS mode and monitor the progress for a period of six months.

One of the challenges which may have to be faced in the implementation of this fiat relates to co-operative banks and other such banks who are not members of the RTGS system or of the Indian Financial Network (INFINET) which is used for transmission of RTGS messages. Under the RTGS system, banks can transfer funds on behalf of their constituents as well, which includes other banks too. Such banks who are not members of the RTGS system and who do not want to become members because of system related costs for low processing volumes and / or other business considerations at their end can be encouraged to route their transactions through other banks who would sponsor their transactions. This approach would be similar to the concept of sub-members in the clearing houses - a feature which has established well and is operating to the satisfaction of all clearing members.

In respect of extension of INFINET membership, the Group is of the opinion that INFINET membership should be extended to all banks irrespective of their status. INFINET is only a communication facility and the absence of such a facility may by itself also become a factor which would result in some level of weakness for such banks. In this connection, the Group understands that the Institute for Development and Research in Banking Technology (IDRBT) is in the process of migrating to the use of Multi-Protocol Layer Switching (MPLS) and the use of Virtual Private Networks (VPN) as part of improved network services using common services available through the Internet. This would enable banks to have their own sub VPNs as well. A Bank which needs to contribute in electronic payment systems through another bank as a sub-member may use INFINET as a communication channel and, therefore, providing access to INFINET to all banks irrespective of their status might be desirable. Extension of INFINET membership would not expose either the bank concerned or the system to any additional risk and the Group therefore, is of the view that Reserve Bank should review the current norms for membership to the INFINET and facilitate any intending bank to be part of the INFINET if they meet all the technical requirements which are required for the INFINET, irrespective of being scheduled or not.



As far as RTGS is concerned, currently, membership is extended to banks that have a current account with the Reserve Bank. A non-scheduled bank which is not mandated to have a current account with RBI may be asked to open a current account so that it can participate in RTGS or alternatively can come in as a sub-member through another RTGS member bank. As far as co-operative banks - especially the State Co-operative Banks are concerned, they may not have a current account with the Reserve Bank. In this regard the Group recommends that the State Level Apex Co-operative banks could be encouraged to open current accounts with the Reserve Bank so that RTGS transactions of other co-operative banks could be routed through the State level Apex Co-operative Bank. Since RTGS is a credit transfer system and the movement of funds does not commence unless there is adequate balance in the account of the sending bank,

there would be no additional risk either to the participants of the RTGS system or to the central bank as the provider of the RTGS system. In fact it would be preferable from the systemic stability point of view that weak banks participate in RTGS as fate of each of the transactions put in by that bank would be known immediately, the risk that such banks pose to the system in net settlement system would be eliminated. The Group, therefore, recommends that the as a long term strategy all banks, including co-operative banks actively participating in various financial markets, whether scheduled or not, should be encouraged to become members of RTGS and hence open a current account with RBI. All other banks may participate in RTGS through a primary member of RTGS as a sub-member. A time schedule for bringing them into the RTGS fold could be reviewed after 6 months when all commercial banks would have migrated to the RTGS platform. Therefore, the earlier approach that co-operative banks should be asked to close their current accounts over a period of time needs a re-look.

An important component to be examined as far as systemic risk is concerned is the clearing systems of the country, which are all Deferred Net Settlement (DNS) Systems. In order to reduce contagion effect and to ensure that settlement finality is achieved in central bank money (as indicated in the Core Principles for Systemically Important Payment Systems by the Bank for International; Settlements, Basle), the settlements arrived at the conclusion of all such clearings may be posted as RTGS transactions. This process has already commenced in a small way in the form of the clearing settlement net debits/credits arrived at by the National Clearing Cell, Mumbai being posted as RTGS transactions in the form of the Multi-Lateral Net Settlement Batch (MNSB). Further, the settlements arrived at by the Clearing Corporation of India Ltd (CCIL) for the Foreign exchange, G-Secs, CBLO and NFS are also being posted as RTGS transactions. There is, however, the need to effect these settlements in a Straight Through Processing (STP) mode so that there is least manual intervention.

The experience gained out of the posting of these net settlements over a period of say, three months, may be used for fine tuning the process of accounting the Net Settlements in a Straight Through Processing (STP) manner. For this purpose, the adequate software interfaces at CCIL may be tested thoroughly with the RBI. The Group recommends that the Reserve Bank may work towards effecting the net settlements of the National Clearing Cell at Mumbai and the CCIL in a STP manner. The next set of systemically important DNS would be the funds settlements arrived at by the two major Stock Exchanges performing equities settlements - the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE). There are many aspects to be taken care of while migrating these settlements, including the need for Lines of Credit as also other operational issues at both the NSE and BSE. It is recommended necessary technical framework for putting these transactions through RTGS could be finalized, if required in consultation with SEBI; after a three month period of monitoring, these could be mandated. The Group also recommends that a Working Group be constituted within the Bank, comprising all stake holders (DIT, DPSS, Mumbai Office) to facilitate the transition. The Group may interact with NSE and BSE for finalising the procedure.

The settlements taking place at the other clearing houses in the country also need to be addressed for minimization of risk. To this end, these could also be migrated to the RTGS system as part of the National Settlement System (NSS). This could be implemented in a phased manner. To begin with, the clearing houses managed by the Reserve Bank at the major metropolitan centres (Mumbai, Delhi, Chennai, Kolkata, Ahmedabad, Bangalore and Hyderabad) could be brought under the ambit of NSS based settlement under RTGS from June 2007 onwards. Since posting of local settlements at Mumbai will require banks and the respective clearing houses to put in place procedures to take care of local funds requirements and in order to ensure that the clearing houses are part of the network for transmission of messages to the NSS / RTGS at Mumbai, the coverage of the remaining clearing houses in the country may take some time. Recognising this, the Group recommends that the migration of clearing settlements generated at other clearing houses to the NSS and settled as RTGS transactions in Mumbai be attempted in a phased manner so as to ensure that all

clearing houses are covered in a phased manner.

Funds transfer requirements of the equities markets need to migrate to electronic modes instead of the current system where paper based funds transfers also take place. While various options are available for movement of funds electronically across various parties in the equities market chain, a combination of EFT, NEFT and RTGS may be used by the equities market participants based on the nature and value of the transaction,. Accordingly, the Group recommends that equities market participants be encouraged to use a judicious mix of EFT, NEFT and RTGS. After monitoring the progress for about six months, the position could be reviewed to decide on the further course of action including the need for issuing a mandate by the regulator for this market segment. EFT will be phased out after NEFT stablises and, therefore, all users will have to be advised to be ready for the switch over in time.

The High value clearing which exists at 25 centres in the country facilitates settlement of paper based cheque transactions on a 'same-day' basis. In order to provide a fillip to electronic transaction processing, The Group recommends a phased approach. To begin with, in order to make the settlement more secure, the settlement could be effected as RTGS based MNSB processing which can be implemented in about three months after the STP based processing commences as outlined in paras 2.9 and 2.12.

While inter-bank transactions constitute a significant proportion of funds transfers in value terms, it is customer transactions which result in the large volumes of funds movements taking place in the country. Most of these transactions are not systemically important; nevertheless they have an impact on the ultimate beneficiary customer who requires funds for his own requirements. In order to improve the efficiency of the retail payments, there is a need to migrate these to electronic modes as well. Taking into account the various facets including costs, processing requirements, efficiencies of scale and various other relevant aspects, the Group is of the opinion that large value customer transactions - of Rs. 10 Crore and above per transaction - should be ideally be settled through the RTGS system. The approach to achieve this goal could follow the path of encouraging customers to effect large value funds movement through RTGS. Other transactions could be settled through the National Electronic Funds Transfer (NEFT) System. It would be prudent to discourage customers to settlement transactions for face values of less than Rs. 10.00 lakh through the RTGS system in view of the costs (including liquidity requirements) and their reduced systemic importance.

Migration of paper based funds movement to electronic modes for the populace of this country is a challenging task and may not be achieved overnight. Substantial progress can be, however, made by means of a system of incentives and disincentives. Taking various factors into account, the Group recommends the feasibility of the following options: Levying a charge for all paper based cheques which will be borne by the customer. Presently the service charges for MICR processing are borne by the banks. Banks may have to educate their customers on the need to migrate to electronic processing and in case the paper based cheques are continued, the service charges relating to the processing of such cheques may be passed on to them. Providing disincentives to customers for using paper based cheques vis-à-vis electronic modes

Making electronic funds transfers cheaper than paper modes. To begin with ECS based transactions should be free and this could continue for another three years. The payee of a cheque has certain legal protection under Negotiable Instruments Act against dishonour of such instruments. Similar comfort should be available for electronic mode of funds transfer.

For certain transactions which are essentially used for effecting non-paper based funds settlement - such as for reimbursement of credit card dues; payment by banks to card accepting member establishments for transactions settled through the Point-of-sale (POS) terminals etc., it is recommended that such payments should not be through paper based cheques; ECS based transaction settlement (including facilities offered by bill payment utilities such as Bill Junction, BillPay etc., should be the mode used for these transactions. A similar approach could be adopted for mobile phone payments as well.

Adopting a differential pricing pattern for paper based Demand Drafts, Pay

orders and Bankers' Cheques issued by banks - these could be priced higher than electronic transactions making internet based transactions free of charge for the customers, since banks would be saving on costs involved if these transactions were to be processed by them as paper based transactions or serviced by tellers at the counters of branches.

One of the basic requirements for NEFT based funds transfers relates to the coverage of NEFT. Today, the number of branches under NEFT is less than the coverage offered either by the RTGS or the EFT systems. Efforts need to be immediately initiated to make all RTGS enabled branches capable of undertaking NEFT transactions as well. We can even think of stipulating that in future only those branches which are NEFT enabled would be added to the RTGS cluster. In order to ensure that NEFT becomes the system of the future, the Group recommends that EFT be continued till NEFT reaches a critical mass in terms of coverage of branches in the country. Further, banks should be encouraged to adopt NEFT which uses SFMS which is safe, secure and legally sound. SFMS could be also priced to be attractive for users**.** Another advantage of this approach is that NEFT can act as a back-up to RTGS in the vent of a disaster affecting the RTGS system.

A major segment which could make a change in the payment systems of the country is the Government. There is an imperative need to migrate Government Transactions from being paper based to electronic. The recent initiatives in the form of the OLTAS, EASIEST etc., have all proved that this is an achievable reality. However, given the fact that processed and procedures of the Government take time to change, the Group is of the view that the Government can be encouraged to migrate to electronic based receipts and payments within a time frame of three years. The progress can be reviewed in the half-yearly finance Secretaries meetings convened by RBI.

The use of paper based cheques cannot be completely eliminated from India in the near future. To address this, the Reserve Bank has already taken steps towards the introduction of Cheque Truncation System (CTS) for which the pilot project is scheduled to be made operational by the end of the calendar year 2007. Transactions which are to be settled through the issue of cheques could be converted as images by CTS and the processing at banks performed as electronic transactions thereafter. This approach would ensure that the objective of migration towards electronic payments will be achieved in the near future as well.

Conclusion:

With the growth and development of IT and technology in all sectors of the economy, it becomes highly important for the banking sector to keep pace with the changing times. In order to be more updated with the changes happening across the banking sector, all kind of banks have to make use of Information Technology to make their work efficient. Also customers are required to change and adapt as per the need of the time. However, with more involvement of Information technology, there are high level of security issues which should be handled critically in order to safeguard customers and banks information.

References

1. Andrade, C "Banking products and services" in Indian institute of banking and Finance, Mumbai.
2. Avasthi G P M (2000-01), "Information Technology in Banking: Challenges for Regulators", Prajnan, Vol. XXIX, No. 4, pp. 3 – 17.
3. Dadabhoy K. Bakhtiar (2013) "Barons of Banking" Random House.
4. Reddy, Y. V. 2005. "Banking Sector Reforms in India: An Overview." RBI Bulletin. June.
5. Sethi Jyotsna, Bhatia Nishwan (2012) "Elements of Banking and Insurance" New Delhi, PHI Learning Pvt. Ltd.
6. Shastri, R.V. (2003), "Recent Trends in Banking Industry: IT Emergence", Analyst,(March), pp. 45-46.
7. Shekhar K C, Shekhar Lekshmy (2013) "Banking: Theory and Practice" Noida, Vikas Publishing House Pvt. Ltd.
8. Suresh Padmalatha, Paul Justin (2010) "Management of Banking and Financial System" Singapore, Pearson Education Singapore Pvt. Ltd.
9. Repot on Trend and Progress of Banking Sector in India
10. http://rbidocs.rbi.org.in/rdocs/Publications /PDFs/0RTP21112013_F.pdf

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Digital Literacy Important for Educators

Dr. Rashmi. G. Vanshakrutamath
Full Time Guest Faculty, Dept of Sociology, KSAWU, Vijayapura
Corresponding Author- Dr. Rashmi. G. Vanshakrutamath
DOI-10.5281/zenodo.8036366

Abstract:

Digital literacy has been recognised as essential in today's educational systems, although reading and mathematics have remained two separate disciplines at the primary level of education. This crucial life skill is essential for socialisation, education, and job readiness, in addition to career readiness. As technology expands to become part of both children's and adults' daily lives, it is becoming more and clearer how important it is for pupils to have digital literacy abilities. Today, it is thought that being able to use technology efficiently is crucial for modern success in everything from social relations to entertainment to education.

It's essential to start digital literacy programmes in schools. Children and the younger generation learn the skills necessary to utilise technology safely and responsibly through the use of digital media. Furthermore, by giving kids the tools they need to thrive in a constantly changing digital environment, digital technology education empowers and educates them.

Introduction:

Digital literacy is "the ability to use information and communication technology to find, evaluate, create, and communicate information, requiring both cognitive and technical skills," according to the American Library Association. According to the definition, digital literacy refers to the skills necessary to live, learn, and work in a society where digital technology, including the Internet and mobile devices, provides communication and knowledge. When we think of traditional literacy, we typically think of reading and writing proficiency. It's crucial to learn phonics, sight words, and, lastly, how to read literature. Of course, the definition of traditional literacy is the capacity for effective writing and reading.

Digital literacy today encompasses a wider range of abilities due to modern technology use, including reading novels on e-books, verifying the accuracy of information on websites, communicating via digital media, and making and distributing videos on online platforms. Around 1.5 billion kids, or 91.3 percent of enrolled students worldwide as of April 17th, 2020, were unable to attend school because of the COVID-19 epidemic (UNESCO, 2020). Because of this, technology, including the Internet, cellphones, and mobile gadgets, is becoming more significant.

Digital literacy is an essential for education for multiple reasons, one of which is that it makes students more interested in reading. The digital book is one instance of how technology is used as a literacy movement media. Digital books might be a way to get people interested in reading more. Books used to be printed on sheets of paper, but today they may also be read electronically. Digital books, often known as E-books, are publications in digital form that may be read on a computer, a mobile device, and other technology devices. They include text, images, videos, and even noises. More and more digital books are now available for free download. In most cases, digital books are just electronic versions of printed books. Student-centered learning is supported by digital literacy-based education. Students are urged to use a variety of printed and digital resources to research topics. Students' enthusiasm for studying, especially reading, can be increased by using digital books or other learning resources for problem-solving, creating original projects, or completing other assignments. Students must learn how to use new technologies, gather resources, and communicate digitally because being involved in the digital world requires them to do so.

Although there are a number of benefits, many claim that digital books lack convenience. The fact that we readers must spend a lot of time staring at the computer screen makes reading digital books uncomfortable.

Another advantage is that students who are digitally literate learn faster. Prior to the development of technology, the availability of different types of information was quite limited. In the past, teachers would advise students to study literature while having a dictionary nearby. Therefore, if they encounter any challenging words, they can simply look them up in a dictionary. It is very dissimilar from the state of affairs today, when there are numerous information sources that can be accessed at any time and from any location. Education keeps innovating as technology advances. Before, if pupils wanted to read, they had to bring their books with them everywhere. This is unquestionably less effective. But thanks to e-book services, carrying books around is no longer necessary.

Digital Literacy Important

Students' interest in reading will decline as a result of this. In this situation, parents have a responsibility to educate kids about the necessity and significance of utilising technology so that they will know when and when not to use it properly. Additionally, teachers have a role to play in educating pupils about globalisation and the advantages and disadvantages of emerging technologies, including communication, information, and other technologies. Despite technological advancements, children's environments still have an impact on their growth. For example, situations where children choose to play outside are better for their cognitive development than those where they prefer to play video games. Consequently, it assumes the role.

Support Educational Progress

We must first define digital literacy in order to grasp it. The abilities needed to utilise technology safely, effectively, and ethically are included in digital literacy. Learning digital literacy skills is becoming increasingly important as technology continues to permeate every aspect of daily life. Here are five justifications for teaching students digital literacy:
The growing use of technology in education is one of the main reasons digital literacy skills are crucial. In the past 15 years, the use of technology as a learning tool has increased, with platforms like computers, tablets, and the internet becoming more common in K–12 classrooms and colleges.

Increase Online Safety

Students who are proficient in digital literacy will feel more at ease and confident using these platforms for learning, whereas students who are not proficient in this area may find it difficult or unnerving to use the relevant technology, which could hinder their progress. Additionally, it's crucial that pupils have the assurance to concentrate on the content at hand rather than being slowed down or distracted by using technology for the test because the bulk of standardised state assessments are now given online. View our blog for additional information on this subject.

Understand Digital Responsibility

Digital responsibility, or the capacity to interact and consume information online responsibly, is a skill that is taught alongside online safety in the context of digital literacy. Students who rely more on computers face difficulties with copyright and plagiarism, cyberbullying, evaluating information sources, and behaving appropriately around others. Students who are more proficient in digital literacy become more responsible digital citizens by mastering their capacity to comprehend and successfully handle these hurdles.

Improves Social Opportunities

Online social engagement is becoming more common, whether we like it or not. On the one hand, being able to socialise with individuals outside of your immediate area is influenced by digital literacy. The use of technology removes the constraints of location when it comes to socialising, where friendships and even familial bonds used to depend on delayed communication. However, this expanded social landscape exposes people—particularly young people—to risky social situations. Learning digital literacy techniques enables students to communicate online while maintaining their privacy and security.

Improve Digital Equity

The digital divide can also be closed by promoting digital equity. Even with the widespread use of technology in homes and schools, there are still disproportionately many minority workers who lack basic digital literacy abilities. Institutions may boost digital literacy among underrepresented

groups and upskill these students so they may have more professional possibilities in the future by making digital literacy a priority in K–12 education.

Supports Lifelong Skills

Although technology is always evolving, digital literacy foundations equip students with fundamental information and abilities that may be used with a variety of technologies both today and in the future. Examples of fundamental principles that can be learned and applied to new and developing technologies include input and output, application functioning, hardware device identification, and how to use them.

Reference:

1. https://edubirdie.com/examples/the-importance-of-digital-literacy-in-education/
2. https://www.learning.com/blog/reasons-digital-literacy-is-important-for-students/

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

A Study on Digital Marketing and Its Impact on Small and Medium Scale Enterprises

Dr. Ashwini H. A[1], Dr. Sangeeta Bagali[2]
[1]Assistant Professor, Dept. of Commerce, Government First Grade College, Holehonnur
[2]Assistant Professor, Dept. of Management, Government First Grade College, Holehonnur
Corresponding Author- Dr. Ashwini H. A
DOI-10.5281/zenodo.8036384

Abstract:
The prominence of Small and Medium Scale Enterprises (SME's) is evident as they are allied with the balanced growth of Indian Economy, playing a vital role through contribution to Gross Domestic Product (GDP) and employment generation. The success of these SME's in the newly emerging Digital Economy relies upon how well they market their products. Effectivedigital marketing strategies ensure greater visibility, increased sales and higher levels of income.The paper focuses on the need for SME's to shift from traditional marketing to digital marketing style, benefits, various digital marketing tools available to SMEs.

Keywords: Digital Marketing, traditional marketing, employment, visibility.

Introduction

There are an estimated 42.5 million Small and Medium Enterprises (SMEs) in India, representing 95% of the total industrial units in the country and most of these businesses arehighly localized with a minimal reach. Though the e-commerce platforms (such as Amazon, Flipkart, etc.) have helped these businesses gain visibility, the actual potential of most of thefirms remains untapped. The most important aspect of a business is its growth, and Marketing is one of the most critical facets that help sell its products (or) services to the customers. The traditional style of marketing allowed businesses to communicate in a top-down manner and reach out to the consumers through mass media such as TV ads, newspapers, radio, etc. But withthe advent of the internet, the world gradually started shifting from offline to an online medium; the newspaper was replaced by online print media, radio was replaced by online music streaming apps, yellow pages by search engine advertising, etc.

India currently has around 845 million active internet users, and the figure is expected to rise to more than 1500 million by the end of 2040. With the change in consumer preferences and psychology, marketing techniques also evolved over the years. Whether it is an online market place or a 'brick-and-mortar' store, companies are now focusing to adopt digital marketing over the traditional means of marketing. A typical marketing budget constitutes around 3-5% of the total sales of the firm, and with the pandemic adversely affecting the total sales, i.e., an increasing cash outflow and declining cash inflow, the discretionary budgets have reduced drastically. The onset of the pandemic has thusfurther accelerated the need to change and adapt digital media to reach the target customers. Thepost pandemic erahave mounted extreme pressures on SMEs, and for the business to stay afloat, the revenue stream must start coming back on track.

Review of Literature

1. **P. Sathya (2017)** in the article on "A Study on Digital Marketing and its Impact" identify that Digital marketing has turn out to be crucial part of approach of many companies. At the present time, still for tiny business proprietor a than have an extremely inexpensive and competent method by using digital marketing to market theirproducts or services in the society. It has no restrictions.

Company can utilize any devicessuch as tablets, smart phones, TV, laptops, media, social media, and email and lot other tosupport company and its products and services. Digital marketing may achieve something more if it considers consumer desires as a peak priority.

2. **Kishor Kumar (2019)** in the article "A Study Of The Growth Of Digital Marketing InIndian Scenario" through the study conclude that of the respondents have judged the importance of digital marketing and hence have commented that in near future the potential of digital marketing is bound to increase and also this will generate more revenue for companies and digital marketing will be successful in near future.

Objectives of the study

1. To identify the need for digital marketing for SMEs.
2. To identify the various digital marketing tools available to SMEs.

Research Methodology:

Descriptive research is used in this study where the primary objective is to define the characteristics of a particular phenomenon without necessarily investigating the causes that produce it.

4.1 Sources of Data

Secondary Data: Information from various articles published in journals and company websites has also been used for the purpose of the study.

USE of Digital Marketing:

With an outburst of technology and digital media influencing every realm of life, the world ofdigital marketing has also been revolutionized. So, is digital marketing actually helpful or just anoverhyped state of affairs? An offline means of advertisement is often costly, time constraining, and narrowly focused. The edge that the online means of advertising gives includes lower costwith high ROI, high conversion rate with trackable and measurable results, ability to build abrand by precisely targeting the right set of customers. The typical Return on Ad Spend (ROAS) on Google ranges from 100-200%; however, even though the figure is high, it is difficult tomeasure the same for offline marketing. The conversion rate for the Google Ad campaign is 3-4% on the search network as compared to 0.5-1% through a TV ad campaign. This shows thestark difference in the impact which an online marketing campaign has on the performance of abusiness.

Digital Marketing tools

1. Google My Business:

This is a free online tool provided by Google for businesses to manage their online presence and improve their reach to customers. The platform consolidates all the features of Google (such as Maps, Reviews) in a single place to provide necessary data and insights from Google Analytics. This tool helps create and optimize the web page by managing the information that the users seewhen searching for a business on its search platform. The free tools such as Google SearchCentral (used for Search Engine Optimization (SEO)) and Page Speed Insights (used to checkspeed and performance of webpage) further helps a business strengthen its brand on the digital media.

2. Social Media Marketing:

The social media platforms such as Facebook, Instagram, Pinterest, etc., have endless free resources that help businesses to speed up on the latest advancements in this landscape. These social media websites are one of the best platforms to help businesses reach the right set of customers by providing the option to run a highly targeted social media ad campaign and understand its performance using analytics tools. By regular updates on the performance, the ads can be curate accordingly.

Alongside the above-mentioned free tools, various paid features can help out in running an evenmore targeted ad campaign, thus further improving the chances of conversions. The advanced analytics tools provided by these platforms offer a detailed report about overall CTR (Clickthrough rate), relevancy, and traffic on the landing page, etc., thus allowing curation and updating of the ad campaign regularly. The most exciting part about this opportunity is that the Government of India is also doing its bitin helping out small businesses to make it big in the market. Through its Digital India initiative, GOI has aimed to transform the country into a digitally empowered society with a massive pushon

Internet data usage, especially in rural India. By providing digital infrastructure to every citizen, it basically provides an open chance for small businesses all across the country to expand their wings.

Conclusion

The growth of the small business is of paramount importance for a thriving economy, and apart from the various government interventions to alleviate the effects of the pandemic, these businesses have to look for growth opportunities beyond their current boundaries. This will help the products get a global outreach, which can easily be translated to sales, irrespective of the geographic location. With the advancement in technology, Digital Marketing is evolving at anunprecedented rate. The digital 'FOMO' is real, and if the businesses do not get on board this train, they are most likely to be left behind.

References:

1. Chaffey D, E-business & e-Commerce Management Strategy, Implementation and Practice Pearson Education, Paris, 2011, 72-79
2. Chaffey D & Smith P, E-Marketing Excellence: Planning and Optimizing Your Digital Marketing, Routledge. Fourth Edition,2008, 580-593
3. Kishor Kumar (2019) A Study Of The Growth Of Digital Marketing In Indian Scenario, Pramana Research Journal Volume 9, Issue 1, 2019 ISSN NO: 2249-2976
4. Sathya P (2017) A Study on Digital Marketing and its Impact, International Journal of Science and Research (IJSR) ISSN(Online):2319-7064.

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

"Effectiveness of e-Software (using MS-excel) for Analysis of Significance of Difference between Two Means (T-Test)"

Dr. Prakash K. Badiger
Assistant Professor, Department of Education, Karnataka State Akkamahadevi Women's University, Vijayapura
Corresponding Author- Dr. Prakash K. Badiger
Email- drprakashkb@kswu.ac.in
DOI-10.5281/zenodo.8036404

Abstract:
This paper is about user-friendly, flexible data analysis e-software by which a researcher can easily put his raw data and find the results. This is possible with the simple MS-Office applications. In the light of the objectives which are meant for this study are achieved through the use of statistical technique in terms of the percentage analysis of results and also interpreted with reference to the selected variables. The e-software (using MS- excel) is more effective than the manual method of calculating t-value. The study is also helpful to understand the various dimensions of data analysis using t-test. It encourages self-guided data analysis process.

Key words: e-software, MS- excel, Development, Internal validation, External Validation and Flied absorption capacity.etc

Introduction:

In the research process, data analysis is an integral part. The main purpose of data analysis is to provide effective and efficient meaning for a given data. Now day's the manual data analysis process is hard and time consuming process. To overcome by this difficulty the only possible way is ICT integration. In another context, due to globalization, marketing and advancement in the education research field many more data analysis software's are evolved. In this modern era we find greater development in the field of educational data analysis software's. But, the softwares available in the market are highly commercialized. There is no scope for flexibility for researchers, teacher and students.

The available data analysis software's like SPSS are required much more training and guidance. Hence it is evident that, there is urgent need of user-friendly, flexible data analysis softwares by which a researcher can easily put his raw data and find the results. This is possible with the simple MS-Office applications. Hence by keeping all this contexts researcher has undertaken the present study.

Statement of the Problem:

The researcher has undertaken the study entitled **"Effectiveness of e-software (using MS-excel) for analysis of significance of difference between two means (t-test)".**

Objectives of the Study:

The following three major objectives were designed by the researcher for the study;

1. To develop e-software for analysis of significance of difference between two means (t-test).
2. To validate the developed e-software.
3. To find out the effectiveness of e-software in terms of its user friendliness, usability, flexibility and acceptance by research scholars.

Hypothesis of the Study:

1. The e-software is effective in terms of its user friendliness, flexibility and applicability by male and female students.
2. The e-software is effective in terms of its user friendliness, flexibility and applicability by rural and urban students.

Operational Definition of the Terms Used:

E- software:

It is windows based plat form where we can access, edit and browse the data for the purpose of analysis of data.

Limitations of Study:

The following limitations were stetted by the researcher to the smooth conduct of research

work undertaken.

1. This study is limited to the Ms-office applications.
2. This study is limited to research scholars of DOE, KSAWU Vijayapura.

Design of the Study:

Method Used:

For the present study researcher was used the New Product Development (NPD) design. This software development and validation process was done as follows;

1. Development of e-software
2. Internal validation of e-software
3. External validation of e-software
4. Flied absorption capacity

Phase- 1: Development of E-Software:

During this first phase, the researcher was intensively depended on the computer software specialists for developing the software. With reference to the needs and software references, researcher was made a systematic plan for designing the development of the e-software. The process involved following sequential steps:

1. User requirement specification (URS)
2. Software requirements specification (SRS)
3. Design Specification (DS) or Outline of Software.

Phase -2: Internal Validation Of E-Software:

In this phase, the internal validation of e-software was done against software architects, educational experts' and research scholars so as to find out the errors and required necessities in modifying the content and software. The software was validated with the following plan;

Installation Qualification (IQ):

For using e- software it's essential to install Mozilla Fire Fox with default and M.S. Access 2007 version, M.s Publisher, Adobe.

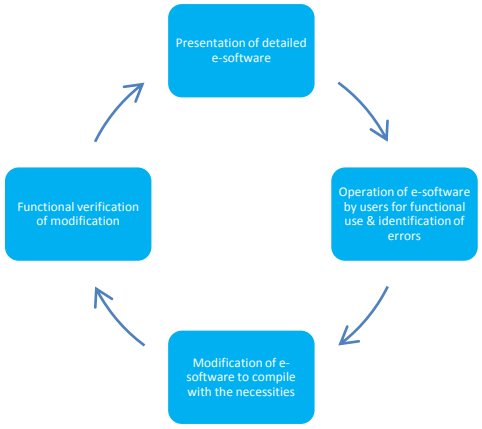
Admin comfort testing with Computer science faculties:

e- Software testing done under computer science faculties hands on experience and collected their feedbacks about admin comfort.

Labs try out with research scholars for user friendly and comfort level:

Lab-try out conducted with research scholars to find the user friendly and comfort level of software.

Detail of internal validation process:



Phase- 3: External Validation of E-Software:

During this Phase the researcher was focused on the External validation of e-software. For checking external validity researcher followed the following steps;

A) Development Of Reaction Scale :

This study requires a tool to collect the opinions regarding effectiveness of developed e-software and its applications in data analysis process as dependent variable that affect the study. For this purpose she used a self-prepared tool that is a reaction scale. This reaction scale is mainly intended to measure the factors user friendliness, usability, flexibility and acceptance of the e-software. Related to these factors the items were designed and are used collectively. This reaction scale contains totally 15 statements. Which are rated in four point ratings namely Strongly Agree (SA), Agree (A), Strongly Disagree (SDA) and Disagree (DA).

B) Experimentation :

- **Experimental Design:**

In this study experimental design that is parallel group design was adopted for the smooth conduct of experiment.

- **Experimental treatment:**

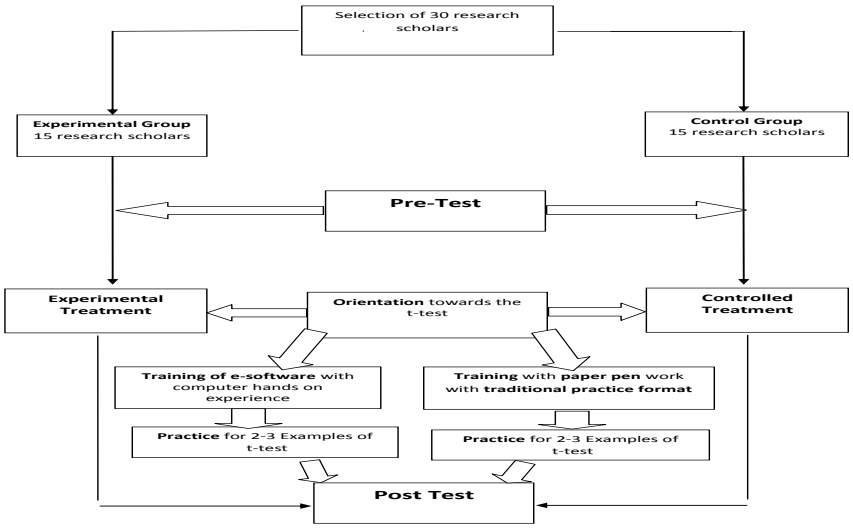
Population for experiment:

The research scholars of the Department of Education, Karnataka State Akkamahadevi Women's University, Vijayapura were target population.

Sample:

Research scholars with specified quality as in population were identified and required for their interest to participate in use of the software. Among the interested 30 research scholars were the samples for the study. The study is designed with the purposive sampling based validation.

Detail of the experimental procedure is as follows;



Phase- 4: Flied Absorption Capacity

After experimentation the researcher is interested to conduct field absorption capacity of the e-Software. For this purpose researcher administered tool already prepared and orientation to the research scholars

Administration of tools:

Later the researcher presented the e-software material demonstration to the research scholars. The presentation was followed by the discussion. The reaction scale prepared for the purpose was administered and data was collected.

Data Analysis:

In the light of the objectives which are meant for this study are achieved through the use of statistical technique in terms of the percentage analysis of results and also interpreted with reference to the selected variables.

Major Findigs of the Study:

The major findings of the study were enlisted below by the researcher:

1. The e-software (that is using MS- excel) is more effective than the manual method of calculating t-value.
2. The e-software is effective in terms of its user friendliness, flexibility and applicability by the research scholars with respect to gender.
3. The e-software is effective in terms of its user friendliness, flexibility and applicability by the research scholars with respect to gender.

Educational Implications:

The following are some of the educational implications which we can think of;

1. The study provided e-Software package to be used for analysis of data that is t-test.
2. Study also helpful to understand the various dimensions of data analysis using t-test.
3. It encourages self-guided data analysis process.

References:

1. Gauch, J. H. (2003). *Scientific method in practice*. Cambridge, UK: Cambridge University Press.
2. Grinnell, R. M. (1993). *Social work research and evaluation*. Adelaide: Peacock Publishers.
3. Karen. (2013). *Choosing a statistical software package or two*. http://www.theanalysisfactor.com/choosing-statistical-software/
4. McGann, C. v. (2013). *Role of statistical software*. http://www.ehow.com/facts_6923793_role-statistical-software.html#ixzz2xoZFcTZX
5. Merriam Webstar. (n.d.). *Research*. Retrieved September 29, 2016, from

http://www.merriam-webster.com/dictionary/research

6. Oxford Advanced Learner's Dictionary. (2015). *Oxford Advanced Learner's Dictionary of Current English* (9th ed.). New York: Oxford University Press.
7. Polonsky, M. J. (2005). *Designing and managing a research project: A business student's guide".* India: Response Books (A division of Sage Publications India Pvt. Ltd.) .

International Journal of Advance and Applied Research
www.ijaar.co.in
ISSN – 2347-7075 Impact Factor – 7.328
Peer Reviewed Bi-Monthly
Vol.4 No.20 May – June 2023

Relation between CG and CSR: A Study of Listed Companies in India

Mrs. Gouri Kalagond[1], Prof. S. B. Kamashetty[2]
[1]Research Scholar & Guest Faculty, Department of PG Studies and Research in Management, Karnataka State Akkamahadevi Women's University, Jnanashakti Campus, Torvi, Vijayapura, Karnataka
[2]Chairman,& Department of PG Studies and Research in Management, Karnataka State Akkamahadevi Women's University, Jnanashakti Campus, Torvi, Vijayapura, Karnataka
Corresponding Author- Mrs. Gouri Kalagond
Email: gour.kalagond@gmail.com.
DOI-10.5281/zenodo.8036419

Abstract:
Corporate governance has greater responsibility not only towards economic development but also towards social welfare and environmental benefits. The present study intends to examine the relation between corporate governance and corporate social responsibility practices. It is essentially the study to analyze the correlation between companies' board characteristics and their CSR performance i.e., the extent of adherence to 2% mandate as per companies' act 2013, using Karl Pearson's correlation analysis. The study includes 235 companies, representing 17 sectors, chosen from NSE NIFTY 100, NSE NIFTY Midcap 100 and NSE Nifty Small cap 100. The study covers period of six years from 2014-15 to 2019-20. The findings of the study reveal that the board size, independent directors, women directors in the board or in CSR committee, non-executive chairman and CSR committee meetings do not have significant association with CSR performance, whereas CSR committee size and CSR committee independence have positive and significant relation with CSR performance. The companies' act 2013 obligates the eligible companies to form a CSR committee consisting of three or more directors, of which at least one shall be an independent director. Hence the companies must comply with CSR committee requirement and add, if possible, more directors and especially independent directors into CSR committee to adhere to the CSR legal requirement with more rigors.

Keywords: Corporate Governance (CG), Corporate Social Responsibility (CSR), Board size, Independent directors, CSR committee.

1. **Introduction:** Corporate governance means set of rules, policies, and practices through which a company is directed towards its objectives. It essentially involves balancing the attainment of interests of various stakeholders such as shareholders, management, employees, customers, suppliers, government, and society at large. "CG and CSR are inextricably interlinked, intertwined and inseparable from each other" (Das, 2009). The corporate house enjoys many facilities from the society in terms of developed infrastructure, trained workforce, rightful raw-materials, Peaceful environment, law, and order etc. because of which it becomes important for the company to give back to society in return in the form of good governance. Many studies reveal that the board characteristics like size, composition, gender, qualification, ethnicity, etc. influence CSR practices. The companies act, 2013 also confers specific set of functions on board of directors and CSR committee in order to execute CSR activities in a responsible manner. Hence the present study considers examining the quantitative composition of board and CSR committee and its impact on CSR practices.
2. **Literature Review:** (Confederation of Indian Indusry, 2013) Mentions that corporate social responsibility and sustainability are so closely entwined that both are company's commitment to its stakeholders to conduct business in an economically, socially, and

environmentally sustainable manner, which is transparent and ethical.

(Muhammad & Sabo, 2015) In their study of Nigerian food product firms, find that board size, and women directors in the board are having a positive relationship with CSR disclosures. Large board sizes are more versatile, and women participation brings in new perspectives on the boards and hence the same should be encouraged as much as practicable.

(Rangan, Chase, & Karim, 2015) Examine that best CSR practicing companies operate coordinated and interdependent programs which create shared value for the society and firm, and these companies stand in stark contrast to those that are focused solely on creating value for their shareholders.

(Singh, 2017) Holds that section 135 of companies act 2013 ought to take the corrective arrangements stringent with specific end goal to hold the directors liable in the event of infringement of triple bottom line.

(Joshi & Hyderabad, 2019) reveal from their study that size of the board, size of CSR committee and frequency of CSR committee meetings have positive and significant influence on CSR disclosures whereas presence of independent directors, non-executive chairman, women on board and CSR committee independence do not have significant association with the level of CSR disclosures.

3. **Objectives:** There are several international as well as Indian studies about the impact of corporate governance on CSR practices. But there is dearth in the studies relating to the association of board, especially CSR committee with compliance to mandatory CSR. Hence the present study aims to understand the relation of board size, independent directors, woman directors, non-executive chairman, CSR committee size, independent directors in CSR committee, woman directors in CSR committee, and CSR committee meetings with Corporate Social Responsibility Performance (CSRP) - Extent of adherence to 2% mandate as per companies act, 2013.
4. **Research Methodology:** "CSR studies so far, have used methods like survey, questionnaire and content analysis, etc. of which the most popular one is content analysis" (Sapkauskiene & Leitoniene, 2014), which is used in the present study to achieve the research objectives. "Content analysis is a research technique for making replicable and valid inferences from data according to their context." (Krippendorf, 1980)
5. **Profile of Sample Companies:** Companies listed in NSE Nifty 100, NSE Nifty Midcap 100 and NSE Nifty Small cap 100 as per the NSE Indexogram/NSE Indices Limited as on December 31, 2020 are considered for this study. From the above indices, the companies belonging to financial services sector and the companies whose data is not available are excluded and finally a total of 235 companies are selected as sample. The study covers six years period from 2014-15 to 2019-20. A total of 1,387 annual reports are collected from the company websites and data pertaining to CSR is analyzed. Further, the data relating to financial aspects, board of governance and general characteristics of companies are collected from NSE and Capitaline database.
6. **Variables under Study:** The present study considers corporate social responsibility performance as the dependent variable and quantitative composition of the corporate board as the independent variable.

6.1 Dependent Variable: Corporate Social Responsibility Performance (CSRP) - Extent of Adherence to 2% Mandate as per Companies Act, 2013.

As per Companies Act, 2013, the companies with net worth of Rs. 500 crores or more, or turnover of Rs. 1000 crores or more or net profit of Rs. 5 crores or more are covered within the ambit of CSR provisions. Such companies are required to spend at least 2% of average net profit of last 3 preceding years on CSR activities every year. But the companies' actual amount spent on CSR activities is more, less, or equal to prescribed amount. Hence, the dependent variable CSRP is calculated as below:

1. Prescribed CSR amount and Actual CSR amount spent by the sample companies are compared year-on-year basis from 2014-15 to 2019-20.
2. If actual amount spent is greater than the prescribed amount, it results into overspent amount i.e., positive figure.
3. If actual amount spent is lesser than the prescribed amount, it results into unspent amount i.e., negative figure.

4. If actual amount spent equals to prescribe amount, it results into zero.
5. Such overspent and unspent amounts of all the years are totaled and averaged to get CSRP.

6.2 Independent Variables: Board size, Independent directors, Women directors, Non-Executive Chairman, CSR Committee size, Independent directors in CSR Committee, Women directors in CSR Committee, CSR Committee meetings.

"Corporate governance, essentially the board characteristics, is responsible for setting of standards, objectives, strategies, and control mechanisms etc. in its capacity as the wealth creating organization of the society." (Ali & Attan, 2013) "The board characteristic mechanism and composition such as board size, board independence, woman on board and managerial ownership are essential determinant factors of CSR disclosures". (Haniffa & Cooke, 2005) "Firms with CSR committee outperform those without, in the corporate responsibility index" (Spitzeck, 2009).

1. Study Hypothesis:

H_0: There is no significant association between board composition and CSR practices of the companies.

H_A: There is significant association between board composition and CSR practices of the companies.

The study hypothesizes that the board characteristics of the companies have significant relationship with their CSR performance.

Table 1 explains about the measurement precis of the variables.

Table 1: Summary of Measurement of Variables under Study

S. No.	Variables	Code	Measurement
1.	CSR Performance	CSRP	Average of overspent and unspent CSR amount in corers of Rs.
2.	Board Size	BSIZE	Average number of directors in the board.
3.	Independent Directors	BIND	Average number of independent directors in the board.
4.	Women Directors	BWOM	Average number of women directors in the board.
5.	Non-Executive Chairman	NEC	Average number of non-executive chairman.
6.	CSR Committee Size	CSRSIZE	Average number of directors in the CSR committee.
7.	Independent Directors in CSR Committee	CSRIND	Average number of independent directors in the CSR committee.
8.	Women Directors in CSR Committee	CSRWOM	Average number of women directors in the CSR committee.
9.	CSR Committee Meetings	CSRMEET	Average number of CSR committee meetings held in a year.

Source: Compiled by Researcher

Average is for six years' time period from 2014-15 to 2019-20.

Table 2 gives out the descriptive statistics of the dependent and independent variables.

Table 2: Descriptive Statistics

Variables	Size (N)	Min.	Max.	Mean	S. D
CSRP	235	-100.71	88.85	-0.32	15.755
BSIZE	235	5	21	9.88	2.359
BIND	235	1	11	4.90	1.486
BWOM	235	0	5	1.47	0.697
NEC	235	0	2	0.56	0.592
CSRSIZE	235	0	8	3.80	0.958
CSRIND	235	0	4	1.64	0.673
CSRWOM	235	0	3	0.53	0.520
CSRMEET	235	0	6	2.02	1.197

Source: Computations based on data collected.

Table 3 displays the results of Karl Pearson's correlation analysis of 235 companies.

Table 3: Correlation Analysis

Variables	Analysis	CSRP	Result	Decision
BSIZE	**Co-eff**	0.091	Positive	**Accept H_0**
	P-value	0.164	Insignificant	
BIND	**Co-eff**	0.033	Positive	**Accept H_0**
	P-value	0.615	Insignificant	
BWOM	**Co-eff**	-0.027	Negative	**Accept H_0**
	P-value	0.68	Insignificant	
NEC	**Co-eff**	0.019	Positive	**Accept H_0**
	P-value	0.77	Insignificant	
CSRSIZE	**Co-eff**	0.180**	Positive	**Accept H_A**
	P-value	0.006	Significant	
CSRIND	**Co-eff**	0.214**	Positive	**Accept H_A**
	P-value	0.001	Significant	
CSRWOM	**Co-eff**	-0.035	Negative	**Accept H_0**
	P-value	0.599	Insignificant	
CSRMEET	**Co-eff**	0.081	Positive	**Accept H_0**
	P-value	0.217	Insignificant	

** Significant at 0.01 level (2 tailed), * Significant at 0.05 level (2 tailed)

Source: Computations based on data collected

7. Findings:

As per the study, board size, independent directors, woman directors in the board or in CSR committee, non-executive chairman and CSR committee meetings do not have significant association with CSR performance, whereas CSR committee size and CSR committee independence have positive and significant relation with CSR performance.

Board size i.e., the total number of directors in the board is positive but insignificantly associated with CSR performance which is consistent with the studies of (Said, Zainuddin, & Haron, 2009) and (Kurawa & Kabara, 2014) but does not agree with the studies of (Janggu, Darus, Zain, & Sawani, 2014) & (Muhammad & Sabo, 2015).

Board Independence i.e., the number of independent directors in the board is positive but insignificantly associated with CSR practices. The study is in consistent with that of (Muhammad & Sabo, 2015), whereas the study of (Eng & Mak, 2003) find negative relationship between ratio of independent directors and CSR disclosures.

The study finds that the women on board has negative but insignificant relation with the CSR performance which is in line with the studies of (Joshi & Hyderabad, 2019) and (Akbas, 2016), while there are studies of (Ong & Djajadikerta, 2020) and (Williams, 2003) which find positive and significant relationship between proportion of women directors and CSR activities.

There is positive but insignificant relationship with the presence of non-

executive chairman and CSR performance. This finding is in line with that of (Joshi & Hyderabad, 2019) but is in contrary with that of (Ong & Djajadikerta, 2020). Regarding CSR committee size, the study reveals that the number of directors in CSR committee has significant positive association with CSR performance which means that, the greater number of CSR committee members the company more likely to comply with 2% mandate. This finding agrees with that of (Joshi & Hyderabad, 2019).

CSR committee independence i.e., the number of independent directors in CSR committee is positively and significantly correlated to CSR performance i.e., the greater number of independent directors in CSR committee the company more committed towards compliance of CSR mandate.

Number of women directors in CSR committee has negative but insignificant relationship with CSR practices.Number of CSR committee meetings has positive but insignificant association with CSR performance, which is in contrary with the study of (Joshi & Hyderabad, 2019). Studies related to board meetings like that of (Li, Pike, & Haniffa, 2008) find a strong association between disclosure of intellectual capital and frequency of audit committee meetings, whereas (Vafeas, 1999) find that the annual number of board meetings is inversely related to firm value.

8. Conclusion:

It is important for the corporate world to understand the fact that economic goals and social responsibility objectives need not be contradictory, but rather both co-exists and are achievable simultaneously, and this should be the mantra for sustainable business. The study intended to analyze the correlation between board characteristics and CSR performance i.e., the extent of adherence to 2% CSR mandate, using Karl Pearson's correlation analysis. As per the study, board size, independent directors, woman directors in the board or in CSR committee, non-executive chairman and CSR committee meetings do not have significant association with CSR performance, whereas CSR committee size and CSR committee independence have positive and significant relation with CSR performance.

As per the companies act 2013, the eligible companies under CSR provisions must form a CSR committee consisting of three or more directors, of which at least one shall be an independent director. Hence the companies must comply with CSR committee requirement and add, if possible, more directors, especially independent directors into CSR committee to adhere to CSR legal requirement. More number of CSR committee members brings about more commitment and versatility towards CSR activities. The greater number of independent directors in CSR committee has lesser ownership and managerial influence, which becomes an important monitoring and controlling mechanism to comply with CSR mandate.

Conversely, it can also be implied that qualitative factors of corporate governance, like qualification, talent, skill, expertise, attitude, motivation, etc., of the board are likely to determine the work culture and so also the CSR practices of the organization. In all the ways, good corporate socially responsible deeds reflect in good corporate governance. To conclude, CSR is an integral part of CG.

References:

1. Akbas, H. E. (2016). The relationship between board characteristics and environmental disclosure: Evidence from Turkish listed companies. South East European Journal of Economics and Business, 7-19.
2. Ali , M. A., & Attan, R. H. (2013). The Relationship between Corporate Governance and Corporate Social Responsibility Disclosure: A Case of Malaysian Sustainability Companies and Global Sustainability Companies. South East Asia Journal of Contemporary Business, Economics and Law, 39-48.
3. Annual Reports. (n.d.). Capitaline database. (n.d.). Retrieved from www.capitaline.com
   Confederation of Indian Indusry. (2013). Handbook on Corporate Social Responsibility in India. PricewaterhouseCoopers Private Limited.
4. Das, S. C. (2009). Corporate Governance in India: An Evaluation (2 ed.). ebook.mca.gov.in. (n.d.). Companies Act, 2013.
5. Eng, L. L., & Mak, Y. T. (2003). Corporate governance and voluntary disclosure. Journal of Accounting and Public Policy, 325-345. Haniffa, R. M., & Cooke, T. E. (2005).
6. The Impact of Culture and Governance on Corporate Reporting. Journal of Accounting and Public Policy, 391-430.

7. Janggu, T., Darus, F., Zain, M. M., & Sawani, Y. (2014). Does good corporate governance lead to better sustainability reporting? An analysis using structural equation modeling. Procedia-Social and Behavioral Sciences, 138-145.
8. Joshi, G. S., & Hyderabad, R. L. (2019, January). The Influence of Board Characteristics on CSR Disclosure: Evidence from Indian Companies. International Journal of Management, Technology And Engineering, IX(I), 1706-1720.
9. KPMG. (2020). India's CSR reporting survey 2019. Retrieved from https://assets.kpmg/content/dam/kpmg/in/pdf/2020/02/india-s-csr-reporting-survey-2019.pdf
10. Krippendorf, K. (1980). Content Analysis: An Introduction to its Methodology. Beverly Hills, CA: Sage.
11. Kurawa, J., & Kabara, A. (2014). Impact of corporate governance on voluntary disclosure by firms in the downstream sector of the Nigerian petroleum industry. Proceedings of World Business Research Conference, (pp. 21-23). Dubai. Li, J., Pike, R., & Haniffa, R. (2008). Intellectual capital disclosure and corporate governance structure in UK firms. Accounting and Business Research, 137-159.
12. Muhammad, A. I., & Sabo, M. (2015). The Impact of Board Characteristics on Corporate Social Responsibility Disclosure: Evidence from Nigerian Food Product Firms. International Journal of Management Science and Business Administration, 1(12), 34-45. doi:10.18775/ijmsba.1849-5664-5419.2014.112.1004 NSE Indices Limited. (2020, December 31). Retrieved from www1.nseindia.com.
13. Ong, T., & Djajadikerta, H. G. (2020). Corporate governance and sustainability reporting in the Australian resources industry: An empirical analysis. Social Responsibility Journal, 1-14.
14. Rangan, K. V., Chase, L., & Karim, S. (2015). The truth about CSR. Harvard Business Review. Retrieved from https://hbr.org/2015/01/the-truth-about-csr Said, R., Zainuddin, Y. H., & Haron, H. (2009). The relationship between corporate social responsibility disclosure and corporate governance characterisics in Malaysian public listed companies. Social Responsibility Journal.
15. Sapkauskiene, A., & Leitoniene, S. (2014). Corporate Social Responsibilty Research Methods Analysis. European Scientific Journal, 237-244.
16. Singh, M. K. (2017). Corporate Social Responsibility in an Indain legal perspective as per Companies Act 2013: Resolution to bridge the gap between Indian Corporate Social Responsibility objectives & it's real outcome. University of Petroleum and Energy Studies, Dehradun. Spitzeck, H. T. (2009). The Development of Governance Structures for Corporate Responsibilty.
17. The International Journal of Business in Society, 495-505. Vafeas, N. (1999). Board meeting frequency and firm performance. Journal of Financial Economics, 113-142.
18. Williams, R. J. (2003). Women on Corporate Boards of Directors and their Influence on Corporate Philanthropy. Journal of Business Ethics, 1-10.

Chief Editor
P. R. Talekar
Secretary,
Young Researcher Association, Kolhapur(M.S), India

Editor
Dr. Chandrashekar M. Mathapati
Assistant Professor
Department of PG Studies and Research in Management,
Karnataka State Akkamahadevi Womens University, Vijayapura.

Editorial & Advisory Board

Dr. S. D. Shinde	Dr. M. B. Potdar	Dr. P. K. Pandey
Dr. L. R. Rathod	Mr. V. P. Dhulap	Dr. A. G. Koppad
Dr. S. B. Abhang	Dr. S. P. Mali	Dr. G. B. Kalyanshetti
Dr. M. H. Lohgaonkar	Dr. R. D. Bodare	Dr. D. T. Bornare

Department of PG Studies and Research in Management
Karnataka State Akkamahadevi Womens University, Vijayapura.