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PERSPECTIVES OF RURAL EDUCATION

J.R. Nidamaluri[1] **and P. Vidyasagar**[2]
[1]Department of Master of Business Administration
Andhra Loyola Institute of Engineering and Technology, Vijayawada, Andhra Pradesh, India
[2]Telangana Minorities Residential Society, Hyderabad
[1]janardhan.alietmba@gmail.com, [2]Pasalavidyasgar@gmail.com

ABSTRACT

Education is a dynamic process that starts from birth. A child is surrounded by parents and other siblings and experiences his surroundings and responds. The surrounding environment, the physical and social environment imparts information and the child tries to learn from that information and responds (Ritu Chandra). Celebrated as the soul of the nation, rural India comprises 70 per cent of India's population and is, in fact, home to more people than the entire continent of Europe. Despite an increasing trend in urbanization, it is projected that the majority of India will still reside in rural regions even in the year 2050. Given the country's ripe demographic opportunity, the development of rural India is critical to forge the nation's progress. The Government of India has been successful in its efforts to universalize access to education. The Sarva Shiksha Abhiyan (Education For All) launched in 2000, the Mid-Day Meal Scheme initiated in 2001, as well as the enactment of the Right to Education Act in 2009, have been instrumental in increasing enrolment and providing equitable educational opportunities. In fact, enrolment in the age group between 6 to 14 years, across both rural and urban areas, has been above 95 per cent since 2007(Ashish kumar and saralype - 2019). Present Study tries analyse the various issues and perspectives of rural education.

Keywords: *Sarva Shiksha Abhiyan, Mid-Day Meal Scheme, equitable educational opportunities, urbanization, Demographic opportunity.*

1. Introduction

Spread over an enormous landscape, impacting over 18 crore students (71 per cent of the nation's students), the rural school education sector accounts for over 84 per cent of the total schools in India. Historical analysis depicts admirable progress in this sector and unravels a transformation in the narrative around education. From being a luxury only a few could afford, today the sight of children in school uniforms even in the most remote regions of the country, has become common place. With a marked increase in first-generation learners, students are transcending the educational attainment of their parents. The United Nations Human Development Report reveals a doubling in the mean years of schooling from 3.0 to 6.4 between the years 1990 and 2017(Ashishkumar and saralype - 2019).

1.1 Need of Education for Rural Development

Education, economic development, physical and social infrastructure play an important role in rural development. Rural development is also characterized by its emphasis on locally produced economic development strategies. In contrast to urban regions, which have many similarities, rural areas are highly distinctive from one another. For this reason there are a large variety of rural development approaches used globally. It is interesting to note that the rural regions perform better in terms of gender parity, as evident in the ratio of girls' enrolment to total enrolment.

1.2 Objectives of the Study

1. To study the Rural-Urban Comparison in School Education.
2. To analyse the various Initiatives to Promote Equitable Education.

1.3 Research Methodology

An attempt has been made in this study to analyse the secondary data available in the field of study.

2. An Overview of the Education Sector in India

Table 1: Summary Statistics of Education in India

	Rural	Urban
Number of schools (in lakhs)	12.97	2.39
Number of students enrolled(in crores)	18	7.1
Number of teachers (in lakhs)	65	24

Source: UDISE 2016-17

2.1 A Rural-Urban Comparison in School Education

A deeper analysis comprising a rural-urban comparison of critical indicators offers interesting insights.

Table 2: Descriptive Statistics A Rural-Urban Comparison in School Education

Indicator	Rural	Urban
INFRASTRUCTURE PARAMETERS		
Percentage of schools with drinking water	96.81	98.78
Percentage of schools with girls' toilet	97.30	98.71
Percentage of schools with electricity connection	54.84	87.60
Percentage of schools having library facility	82.13	87.20
Percentage of schools established since 2002	27.40	30.63
Percentage distribution of classrooms in good condition	78.35	92.37
SCHOOL PROFILE		
Average enrolment in schools	108	208
Average number of teachers per school	5	10.2
Student Classroom Ratio	24	28
Pupil Teacher Ratio	23	22
Percentage of distribution of classrooms with enrolment <50	37.86	21.11
Percentage distribution of single teacher schools	7.77	3.84
Percentage of schools with regular head-master/ principal	40.19	49.71
Percentage of schools inspected in previous academic year	46.13	31.68
Average number of instructional days Average number of working days	225	223
Spent on non-teaching assignments	1.27	1.34

Source: UDISE 2016-17

3. Initiatives to Promote Equitable Education

Launched by the Prime Minister in 2018, the Transformation of Aspirational Districts Program aims to expeditiously improve the socio-economic status of some of the most backward regions in the country. With the highest weightage accorded to education, 112 Districts across the country are consistently monitored and ranked in terms of progress made, on a critical set of indicators. Anchored at the NITI Aayog and in line with its mandate to promote 'cooperative and competitive' federalism, the program is resulting in tangible progress. More than 71 districts improved their language scores in Class 3 within just 6 months since the launch of the program. There has been exceptional progress in infrastructure parameters as well, especially in the 25 districts mentored by NITI Aayog. In less than one year, between the baseline (June 2018) and midline (February-March 2019), the percentage of secondary schools with electricity has increased by over 10 percentage points, from approximately 84 per cent to 95 per cent.The draft National Education Policy 2019 envisions an inclusive and equitable education system where all children have an equal opportunity to learn and thrive. It advocates for equalizing participation and learning outcomes across regions through concerted policy action. Through the establishment of special education zones, targeted funding for inclusion as well as district-wise assistance for independent research on inclusive education, the policy lays the road ahead for India, building on existing efforts to this end (Ashishkumar and saralype - 2019).

4. Conclusion

Rural India happens to be the root of our country. In order to strengthen the roots, it is important to feed it adequately with education. If we are able strengthen the roots; reaping the fruits shall not be far behind. Enlightening the minds of rural population will pave the way for our nations growth in world scenario. The educated agregrarian society of India with strong value system will be able to leave an everlasting footprint (Ritu Chandra). It is time we foster our school education system to 'draw out the best in child and man, in body, mind and spirit'. With over 50 per cent of the workforce estimated to come from rural India in 2050, it is imperative to establish the strongest foundations of learning through school education, (Ashishkumar and saralype - 2019). Efforts are being made to make Rural India a knowledge super power by equipping rural students with the necessary skills and knowledge and to eliminate the shortage of manpower in science, technology, academics and industry.

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NEO BANKING-OVERVIEW IN INDIAN BANKING INDUSTRY

Lavanya P.B.[1] and S.R.Thunga[2]
Andhra Loyola Institute of Engineering and Technology, Vijayawada, Andhra Pradesh, India
[2]rayudu.thunga@gmail.com

ABSTRACT

Banking sector contributes extensively in the fiscal and communal progress of the nation. It is the lifeline of an economy. A strong banking system is important for economic growth. Indian banking industry, today, is in the midst of an information technology revolution in the name of digital banking and neo-banking. The past few years have seen a number of startups came up with digital banking model, a few banks initiated neo-banking services like SBI Yono, Kotak 811and many others offering services to their customers. This study is an attempt to understand the key opportunities and challenges of neo-banking with reference to Indian banking industry. The results indicate that the usage is low. Customers perceive awareness, trust, and security as significant factors affecting their decision of choosing neo-banking.

Key words: *Digitalization, Financial Technology, Information Technology, Neo-banking.*

1. Introduction

Technology plays a major role in the banking sector. Nowadays everything traditional became everything digital; this revolution is called neo-bank. Neo-bank is essentially 100% digital banks, without any branches. They are called financial technology firms offer banking as a service ranging from faster accounts, mobile deposits, free debit card, credits, payments and many more without the burden of a physical network. The emergence of information and communication technology had made great development in finance, operational transactions of both individual and organizations (Slozko, 2015).

Business world is dynamically changing; technology has changed the way of business operations particularly financial transactions have rapidly changed from cash to digital. (Mohamad & Haroon, 2009). Electronic payment system initiated many payment modes to financial institutions such as the credit cards, debit cards, on-line banking and mobile banking (Premchand& Choudhry, 2015). As a result, adoption of e- banking has become inseparable from business (Balogun, 2012).

1.1 Objectives of the study

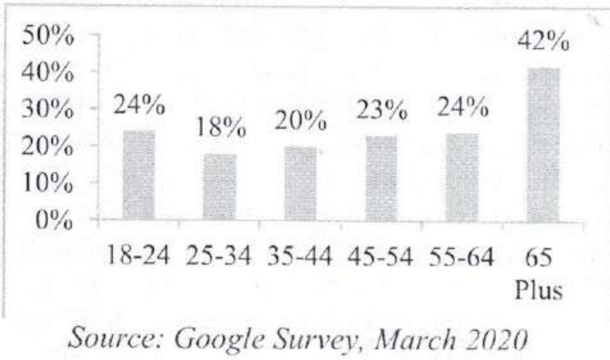
1. To understand, analyze the concept and growth of digital transactions
2. To study the key opportunities and challenges of neo-banking in Indian banking sector
3. To offer recommendations for promoting the use of digital and neo-banking.

1.2 Research Methodology

The primary objective of this paper is to study the key opportunities and challenges of digital and neo-banking with reference to Indian banking industry. The data required for the study has been collected from secondary sources such as research papers, Journals, magazines, annual reports of Reserve Bank of India and websites.

2. Analysis and Discussion

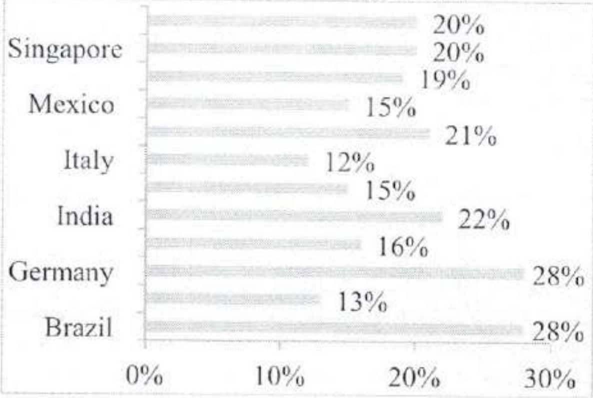
Figure-1: Age wise adoption of Neo-banking in India



Source: Google Survey, March 2020

The above figure shows that age wise adoption of Neo-banking in India during 2020. 24% of the People with age group of 18-24 have neo-bank accounts, 18% neo-bank accounts with age group of 25-34, 20% accounts with age group of 35-44, 23% bank accounts with age group of 45-54, 24% accounts with age group of 55-64 and 42% neo-bank accounts with age group of 65 plus.

Figure-2: Percentage of the Population with online Bank Account 2020



Source: Google Survey, March 2020

The above figure shows that adoption of Neo-banking in various countries during 2020. Germany& Denmark are the leading countries in Neo-Banking with a percentage of 28% followed by India with 22%, Malaysia with 21%, Spain& Singapore with 20%, Netherlands with 19%, Hong Kong with 16%,Mexico with 15%, France with13%.

Due to the pandemic situation a lot of support and initiatives given by the banks, governments for encouraging digital transactions still majority of the rural people are not in a position to use technology for financial transactions. It has been found that the lack of financial literacy, majority of the people is not having access with digital transactions. Hence the banks, governments and policy makers should initiate and educate especially rural people on digital transactions and its benefits, this will leads to reduce bribery and invisible parallel economics.

As a part of digital India and financial inclusion extension banks are promoting financial transactions and services through digital platforms such as mobile banking and virtual currencies, there is a lack of belief among the people as to the security and reliability of the technical platforms. Hence the banks and financial institutions have to promote trust in these technology based transactions and services by releasing clear guidelines and regulations that will ensure the assurance in the minds of people and clients.

3. Conclusion

Digital dealings enhance the country. Neo-banks will be integral part of the progressive payments and financial solutions in digital India. The financial system and economy will grow faster and stable and it will also boost the quality of client service with cost effective manner and also ensure an orderly growth in the economy. Financial transactions through digital way are not a onetime target. It is a contentious and progressive initiative, which will progress itself over a period of time. From the study, it can be concluded that the Reserve Bank of India, central and state Governments, policy makers' educational institutions focus on developing new policies and strong initiatives for promoting financial literacy especially financially excluded population.

4. Limitations and scope for further study

The present study has the following limitations; study was based secondary sources of data. The results cannot be generalized for other sectors and countries. The present study resolves around the area of trends and challenges of ne0-banking in India. Further research can be done on growth and opportunities of neo-banking. Research can also light on the areas like impact of neo-banking on Financial Inclusion, customer service quality and overall efficiency of the banks.

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20. Issues and Challenges of National Monetization Pipeline Policy

Dr. Subba Rayudu Thunga
Associate Professor, Andhra Loyola Institute of Engineering and Technology, Vijayawada. Andhra Pradesh. India.
Lavanya P. B.
Assistant Professor, Andhra Loyola Institute of Engineering and Technology, Vijayawada, Andhra Pradesh, India.

Abstract

Infrastructure is vitally connected to the growth and economic performance of economy. Good quality infrastructure creates most positive impacts on the economy. An eminence infrastructure is contributing various policy objectives with industrial growth, trade competitiveness in International platforms, efficient use of natural and human capital, food safety and health. With this backdrop recently government of India has released four-year national asset monetization plan to raise Rs. 6 lakh crore under the National Monetization Pipeline (NMP) policy. The objective of this paper is to examine the issues and challenges of National Monetization Pipeline policy. The study is based on secondary sources i.e. NITI Aayog Monetization pipeline guide book, web sources and news paper coverage. This study would be useful to the policy makers, government to reinforce the economy.

Key words: Industrial Development, National Monetization Pipeline, NITI Aayog.

Introduction

On August 23, 2021, India announced the asset monetization pipeline of central cabinet and public sector organizations-National Monetization Pipeline. This proposal aims to monetize assets under the Central Government to the raise INR 6,000 billion over a period of four years, from financial year 2022 to 2025; with this context NITI Aayog has been entrusted with the mandate to develop National Monetization Pipeline. Under this ambitious NMP, the government has identified 13 sectors- with roads, railways, power transmission, power generation, natural gas pipelines, petroleum, petroleum product pipelines, and other assets, urban real estate, telecom, warehousing, mining, aviation, shipping and stadiums.

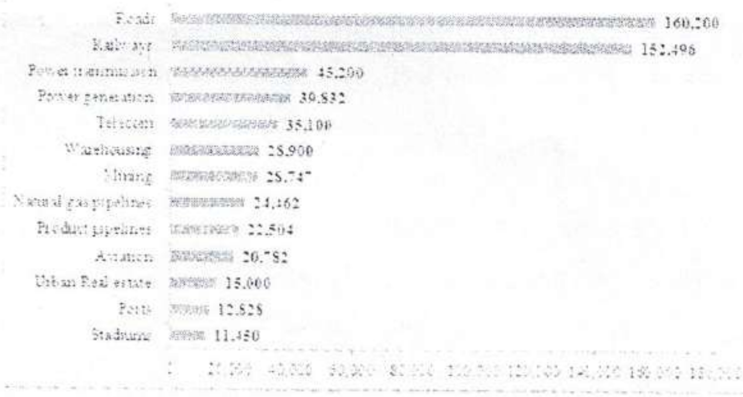
The policy will facilitate infrastructure formation through jointly beneficial collaboration between the public and private sectors, each of whom excel in their respective areas of competence, and carry on the government's socio-economic development objectives. The NMP roadmap identifies 13 sectors under which assets are to be monetized. These identified assets will be leased out to the private sector on a long-term basis. It is being reported that the lease will be applicable for four to five decades.

Table: 1 Sources of finance for NMP

Budgetary Sources	**Private or Extra Budgetary Sources**	**Innovative alternative financing sources**
Central Budget (18-20%)	Financing by Banks (8-10%)	Innovative and alternative financing (15-17%)
	Bond Markets (6-8%)	
State Budget (24-26%)	Infrastructure NBFCs (15-17%)	
	PSU Accruals, Equity and Others (8-15%)	

Source: National Monetization Pipeline, Volume 1: Monetization guide book by NITI Aayog, July, 2021

Figure: 1 Sectoral share of NMP for Financial Year 2022- 2025 (in Rs. crore)



Source: NITI Aayog (https://www.india.gov.in/spotlight/national-monetisation-pipeline-nmp)

Objectives of the Study

1. To provide conceptual overview on National Monetization Pipeline policy
2. To understand the underlying reasons for monetization of assets
3. To examine the issues and challenges of National Monetization Pipeline policy

Methodology of the Study

The present study namely "Issues and challenges of National Monetization Pipeline Policy" based on secondary data, the data required for the study has been collected from NITI Aayog Monetization pipeline guide book, web sources and news paper coverage.

Issues and Challenges of Monetization

Disruptive thinking is the hallmark of present day. Central Government's bold decision to monetize its 13 key sectors is such an initiative. The first major challenge is to address the terms and conditions of public sector employment. The employees must to be protected during the monetization process otherwise it may lead to strikes and unrest in economy. Considering this issue, if Government opts for wet lease, the revenue generated from the sectors may be not profitable as the lessee may agree to pay less lease rent or bulk payment. If government wants to generate more revenue it may handover the decision of hiring and retaining to private players. In this case, lessee may prefer to hire skilled and talented people in key positions and retain only skilled manpower from the existing human resource of monetized sectors.

The second major issue of monetization is to handle Crony Capitalism. Already Indian wealth is concentrated is few Capitalists hands. Due to the high intensity of capital required it is estimated that only few large players can only participate in the bidding process. This may further lead to Cronyism in monetized sectors. The bidding process should be stringent and should attract maximum number of bidders including all sections of the society to avoid this challenge.

One more challenge faced by the government is to generate the value out of the monetization process. The big question before the government, strategists and economists is whether, this monetization process will generate the required revenue. This challenge is multi faceted. The metrics used to estimate the worth of each sector is challenging. The monetization must generate more revenue than continuing its operations or it should reduce the operational losses incurred by government. Otherwise, the whole monetization process will be a back slap on government and the consequences of it would much worse on the economy. Implementation of NMP is also challenging as many hurdle will come in way. Implementation of such programmes requires meticulous planning and implementation. Intervention of political parties or terms dictated by the Capitalist may ruin the successful implementation of this programme.

One more issue that needs to be addressed is to answer its citizens. A promise that needs to be kept by the government is: monetizing the key sectors will not be a detriment to the right of common citizens. The profit maximization objective of private players cannot be burden on ultimate users. They are not deprived of quality goods and services at affordable cost. For long many decades these sectors have been developed and maintained by the government with revenue generates out of tax payers money. Because of monetizing these sectors, the same people need to pay additional money to utilize the services to lessee. The government is answerable to the hard earned money of the common public which is being handed over to private players. Failure in implementation of this programme may create agony among citizens against the government.

The next challenge is from the lessee's point of view. Creating a Win-Win situation out of leased sector in the long run is highly demanded by both the players. The Public Private Partnership (PPP) process will not give full free hand to the private players in strategic decisions without government intervention. With the strong regulated framework, restriction on prices and quality of service, operational losses in certain sectors and high expectations of government on the revenue generated out of lease amount, whether the monetization will be profitable to the lessee is still a big question.

Conclusion

The world economy is in volatile condition. The pandemic has created lot of uncertainty across the globe. Indian government decision to raise revenue through monetization of 13 public sector enterprises is a challenging yet a bold decision and the need of the hour. This generates revenue to the government which can be utilized for other government plans and policies on one side and more qualitative goods and services can be offered to the public in general. This also offers positive signals to global business players and becomes a yardstick for progress of moving from more conventional public sector enterprises to more dynamic and resilient public private partnership. The expertise of both players is operating business may create a synergic effect and create long term sustainable development of Indian economy. Addressing the challenges with global outlook, strong regulatory framework, attractive auction policy, participation of large number of bidders, optimizing the learning from past monetizing experiences, consumer centric approach from private players will definitely result in the success of this National Monetization Pipeline Policy.

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Role of microfinance in women empowerment

Mr.GANGADHARA RAO.U

M.COM,M.B.A, (Ph.D)

Research Scholar,

Department of Commerce and Management Studies

Andhra university

Prof.JALADI.RAVI

M.COM,M.B.A,Ph.D

Department of Commerce and Management Studies

Andhra university

ABSTRACT

In the modern economy, microfinance is proving to be a strong tool for poverty reduction. Self Help Groups and Commercial Bank Linkage Programs dominate the Indian microfinance landscape as an efficient method for delivering financial services to the "Un-reached Poor." This has been effective in addressing the financial requirements of rural poor women as well as strengthening their collective self-help capabilities, resulting in their empowerment. Women get the capacity to influence or make decisions as a consequence of economic empowerment, as well as greater self-confidence, a better position and role in the home. This article tries to show how microfinance has gained widespread acceptance as a method for women's economic empowerment. The role of microfinance institutions on rural women's economic empowerment and poverty alleviation was investigated in this study. There is also an attempt to propose methods to improve women's empowerment.

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INTRODUCTION

Micro finance is a relatively new word that is often used to refer to problems such as poverty reduction, financial assistance for micro businesses, and gender development. There is no legislative definition of micro finance, however. The taskforce on supportive policy and Regulatory Framework for Microfinance has defined microfinance as "Provision of thrift, credit and other financial services and products of very small amounts to the poor in rural, semi-urban or urban areas for enabling them to raise their income levels and improve living standards". Microfinance Institutions (MFIs) are financial institutions that provide financial and non-financial goods and services to low-income individuals who would not have access to conventional financial institutions' services otherwise. In India, there are many registered financial institutions, of which a few hundred are microfinancial institutions. Women Entrepreneur Program is a microfinance organisation working in the area. It provides financial products and services to the needy especially women.

The Grameen Bank in Bangladesh was founded by the prestigious Nobel peace prize winner Professor Mohammed Yunus, who was celebrated as the founder of the most successful micro-finance microfinance institution in the world with the highest number of registered members and borrowers and the highest effective repayment rate. His outstanding work has been copied and replicated by almost all developing nations, and has extended its wings to even the rich world as the finest instruments to relieve poverty via the provision of modest and cheap loans to the poor active through solidarity and on-lending processes.

OBJECTIVES

1. To investigatethe Role of Women in Indian Economy.

2. Determine the impact of microfinance on women's empowerment.

METHODOLOGY

It's essential to constantly be sceptical of the information provided in sources, particularly if the information was collected to solve a different issue. Furthermore, many secondary sources do not clearly explain topics such as the aim of a study, how data was collected, analysed, and evaluated, making it difficult for the researcher to evaluate their use. To solve this issue, I attempted to triangulate secondary data by using several independent sources.

The problem's information is gathered from Research Journals, Trade Magazines, Bank Annual Reports, and the Internet. We focused on as much current information as possible while assessing "the role of Microfinance in Women Empowerment." I utilised a number of papers published in academic publications and commercial periodicals to keep up with the newest advances in this field. We also utilised secondary data from discussion groups on the internet.

DISCUSSIONS

Women's Role in the Indian Economy:

Over the last three decades, the substantial increase in women entering the workforce has resulted in dramatic changes in the structure of families, society, the economy, and urban life all over the globe. Women's economic activity have been gradually growing since the late 1950s. Women have traditionally played an important role in their communities' economy. Women generate 80 percent of the food in Africa, 60 percent in Asia, and 40 percent in Latin America, for example. In many instances, women not only produce but also sell the food, giving them a thorough understanding of local markets and consumers.

This is only one illustration of how crucial women's labour is in society. It does not reflect the true amount of women's participation to the labour force, particularly in developing countries, nor their position as a major source of revenue for the family. In Africa, for example, women are responsible for all duties linked to a family's support. A woman's presence has been a matter of survival for her family due to cultural and traditional factors.

Women, particularly impoverished moms, must split their time between their "productive role" at work and their "reproductive role" at home, while balancing all demands. These women value their time since their livelihoods are dependent on their ability to meet the various demands of the home and the marketplace. In spite of the extraordinary significance of women's involvement, their professions have been regarded as a "additional income" to family survival or merely to enhance its living circumstances. Furthermore, women-owned microenterprises have been seen as a means to fulfil basic necessities rather than a lucrative source of revenue.

Unfortunately, labour markets have reflected this view and have provided women with less favourable working circumstances. Working women are regularly paid less than their male counterparts. Women have had to battle against a hostile environment that has historically minimised and exploited their abilities. As a result of this reality, some women are only interested in the non-monetary advantages, such as the psychological pleasure of "social interaction."

MFIs should, in general, encourage microenterprise programmes to create particular methods for recruiting women as clients from within their current target categories in order to promote women's empowerment in micro and small business.

Encourage microenterprise programmes to broaden their target audiences to include the sizes and kinds of businesses in which women participate and/or experiment with support methods, as well as the business and technical help requirements of these businesses.

Consider extending your contribution to a wider variety of organisations, particularly those working to alleviate poverty in rural regions. Technical support and training in programme planning, management, and building teams of female employees to assist clients in business planning and management should be provided to these organisations.

MFIs should do the following to improve women's access to credit:

- Increase the amount of operating capital available;
- Experiment with lending programmes that don't need the use of traditional types of collateral.
- Replicate and extend effective small working-capital loan delivery methods.
- Introduce savings mobilisation elements into loan or other types of business support programmes;

- Promote financing policies that are accessible to both small-scale business operations and businesses in trade, commerce, and other small business sectors where women make up a larger percentage of the workforce.

Microfinance's Contribution to Women's Empowerment

A basic difference between relative and absolute welfare must be stated or clarified while addressing the word empowerment. There are many measures of empowerment for women engaged in microfinance mobility, economic security, social independence, main family decision-making, freedom from male dominance, political and legal knowledge, according to Hashemi et al (1996). Education, health and nutrition, and labour force participation are all absolute indicators. Relative: a procedure in which a woman's position in making choices and managing home resources is contrasted to a man's position. Meetings, talks of linked family problems, and ongoing meetings between group members and credit personnel (Hashemi et al, 1997, Kibas, 2001).

Women's capacity to influence or make decisions is enhanced as a consequence of economic empowerment, as is their self-confidence, status, and position in the family. Microfinance is required to combat exploitation and to instil confidence in the rural poor, especially rural women, who are mostly invisible in the social system.

People's assets and capacities to influence control and hold accountable institutions that impact their lives are expanded via empowerment (World Bank Resource Book).

Empowerment is the process of allowing or permitting a person to think, conduct, act, and direct their job independently. It is a condition of feeling self-assured and capable of controlling one's own fate. It encompasses both physical, human, intellectual, and financial resources, as well as ideological (beliefs, values, and attitudes) restrictions (Batliwala, 1994).

According to Mayoux (2001), women have become economically and socially empowered as a result of the availability of credit and non-credit facilities.

According to the findings, there are a variety of effects on women's access to microfinance institutions. When correctly executed, microfinance programmes not only assist to decrease poverty, but also contribute to women's empowerment. They assist rural women get access to resources that might otherwise be unavailable to them. This enables women to expand their economic activities and, as a result, improve their quality of life. This study demonstrates the beneficial impacts of money on impoverished women's livelihoods, particularly in India. The following are some of the main advantages of microfinance:

Empowerment in the Economy Women's access to savings and credit allows women to have a larger economic role in decision-making via their savings and credit choices. When women make choices about credit and savings, they improve their own and their families' well-being. Investing in women's economic activities will increase their job prospects, resulting in a "trickle down" impact. Women's own income-generating activities are emphasised in the financial sustainability and feminist empowerment paradigms. The focus in the poverty alleviation paradigm is on raising family earnings and the utilisation of loans for spending. Individual economic empowerment is viewed as contingent on social and political empowerment in the feminist empowerment paradigm.

Making decisions According to studies, a woman's financial situation has an impact on her participation in decision-making in her household and in the society at large. Because of this interconnection, policymakers working on problems affecting women must be aware of the financial status-women empowerment connections. In this setting, women's empowerment may both influence and be affected by financial position, resulting in multi-directional consequences. Family decisions, company investments, and management strategies (Kibas 2001). Microfinance, according to proponents, may boost women's negotiating power in the home. Women will gain "empowerment," meaning they will have more say over household choices and resources. Microfinance is expected to offer protection to women in their families to the degree that group financing in microfinance involves peer monitoring by other borrowers in the same group. Peer borrowers will want to know why certain women in their group have ceased attending payback meetings, thus violent actions and abuses by males against women may now be investigated by a third party.

Enhanced well-being This refers to the increased profits from loans that have been invested. The women are able to re-invest the interest money produced, resulting in the expansion of their businesses and more power. Access to savings and credit facilities, as well as women's choices about what to do with savings and credit, strengthen women's voice in family economic decisions. This

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allows women to spend more money on their own and their children's well-being. In the poverty alleviation paradigm, this is the most pressing issue. Men gain from women's decision-making power because it prevents family money from going to useless and destructive activities. Other welfare initiatives, including as nutrition, health, and literacy campaigns, are recommended in addition to microfinance to reduce women's vulnerability and enhance their abilities. Improved well-being is considered as a result of increasing women's economic activities and earnings under the financial self-sustainability and feminist empowerment paradigms. Women's capacity to make economic decisions increases as a result of increased access to credit and increased income, which they would not be able to accomplish if they were dependent on their spouses.

Control and access to financial resources Hashemi et al., Goetzad Gupta, Hashemi et al., Hashemi et al., Hashemi et al., Hashem (1996), Women have more influence over the credit they get and the money they earn as a result of it. Women have considerable control over their lending operations, according to evidence. According to Ackerly (1995); Goetz and Gupta (1995), the impact of microfinance services is greater when women have direct authority over the financial resources obtained in their names. Women's empowerment, entrepreneurship, reproductive duties, and repayment load are all likely to benefit from more control.

Domestic violence and relationships Families with financial independence, according to Kibas (2001), are more stable and have less domestic violence. Women in the Grameenprogramme were significantly less likely than women in non-Grameen bank programmes to be abused by their husbands, according to Schuler, Hashemi, and Akhter (1996).

Education and Health Due to the fact that women bear the majority of the family burden, access to credit has allowed women to enhance the health and education of their children, let alone access to education for girls; access to credit has enabled women to get government-subsidized health insurance. Credit has aided women in preparing nutritious meals for their families (Kabeer, 2001; Rwabangira, 1996).

Conclusion

Micro finance, as an essential component of poverty reduction programmes for women, may help to solve the issues of insufficient housing and urban services, according to the findings of this research.

Multipurpose lone or composite credit for income creation, home improvement, and consumption assistance is a potential option. The consumption loan is shown to be particularly significant during the time between starting a new economic activity and earning a profit. In order for the idea to function, thorough research into prospective borrowers' desire for finance and savings behaviour, as well as their involvement in choosing the mix of multi-purpose loans, is required. We may deduce from this that microfinance can help women not just economically but also socially.

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CHALLENGES AND STRATEGIES OF SERVICES MARKETING IN A GLOBALISED BUSINESS ENVIRONMENT

Ningibothu Bharanidhar[*1], Gangadhara Rao.U[*2], Dr. Jaladi Ravi[*3]

[*1]Research Scholar (Full-Time), Department Of Commerce And Management Studies, Andhra University, Visakhapatnam, Andhra Pradesh State, India.

[*2]Research Scholar (Part-Time), Department Of Commerce And Management Studies, Andhra University, Visakhapatnam, Andhra Pradesh State, India.

[*3]Professor, Department Of Commerce And Management Studies, Andhra University, Visakhapatnam, Andhra Pradesh State, India.

ABSTRACT

Because of the rise of the service sector in nations across the globe, service marketing is becoming a recognised and acknowledged component of the marketing discipline. A services marketing system is a dynamic combination of people, technology, organisation, and shared data that generates and distributes value between the supplier and the client via service. Basic features like as intangibility, inseparability, heterogeneity, and perishability provide obstacles and concerns that commodities marketers do not encounter. Services marketing concerns and obstacles need feasible tactics, whereas products marketing techniques are often ineffective. Understanding client requirements and expectations for service, tangibility of the service providing, working with a diverse group of individuals, delivery concerns, and maintaining promises made to consumers are all obstacles.

Keywords: Services Marketing, Intangibility, Inseparability, Heterogeneity, Perishability.

I. INTRODUCTION

Services marketing is a kind of marketing that is used by businesses that provide a service to their customers in order to increase brand awareness and income. Unlike product marketing, services marketing focuses on fostering intangible interactions that provide value to customers. Advertisers use effective service marketing techniques to build customer trust and show how their product may benefit them. Businesses' service marketing strategies might include promoting ideas, benefits, and promises to help sell their services.

The services marketing system is a dynamic mix of people, technology, organisation, and shared data that creates and delivers value between the supplier and the customer via service. To achieve a competitive edge in today's competitive climate, firms compete strategically on the basis of service quality. This is due to the fact that services are rapidly becoming the primary mechanism via which companies communicate with their clients (Irons, 1997 in Strydom, 2004). Innovative organisations that supply fresh products as well as differentiated client services are currently succeeding in sectors where conventional corporations have failed (Lovelock and Patterson, 1998 in Strydom, 2004). Enhancing public relations, increasing client loyalty, improving service quality, managing relationships, and responding to complaints are all part of the process.

According to Zeithaml, Parasuraman, and Berry, service marketing is becoming a recognised and authorised aspect of the marketing discipline as a result of the growth of the service sector in nations throughout the world (1985). The service sector seems to be taking over the world economy as its significance grows and it becomes a larger portion of most nations' economic landscapes. The service sector has long been regarded as a leading indicator of a country's economic development. Emerging economies have frequently shifted from agriculture to manufacturing, and then to the service sector as their primary economic sector throughout history. Service marketing, like any other marketing technique, is influenced by a multitude of factors in today's global economy. Businesses can tap into global resources and expand into a slew of new international markets, improving their overall performance. On the other hand, greater market uncertainty, as well as a rise in the number of competitors and the intensity of competition, pose risks (Eng. 2001: Fawcett & Closs, 1993 and Hafsi, 2002). As a consequence, a service marketer must examine this complex problem in order to establish appropriate business strategies that will ensure a company's survival and development in a global market. Services are presently distinguished from physical goods in the literature based on four basic characteristics:

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IHIP (Intangibility-I, Heterogeneity-H, Inseparability of production and consumption-I and Perishability-P). Service marketers have severe problems as a result of these distinguishing characteristics. Service should be defined and evaluated in relation to how it varies from and complements products. Services marketing issues need service marketing solutions. Marketing tactics for experienced-based goods are often insufficient..

USERS OF SERVICES MARKETING:

Companies that provide a service use services marketing strategies to reach potential customers. Popular examples of service-based industries that use this form of marketing include:

- Telecommunications
- Health and wellness
- Financial
- Tourism, leisure and entertainment
- Transportation
- Hospitality
- Consulting
- Design, marketing and sales
- Management
- Education
- Trade industries
- Restaurants

II. REVIEW OF LITERATURE

"Activities, advantages, and satisfaction that are offered for sale or delivered in conjunction with the sale of products," according to the American Marketing Association (AMA). The rising amount of literature on services marketing is based on three key principles. To begin, there are the intangibility and inseparability of production and consumption. Services are distinguished from physical things by their variety and perishability. Second, these distinct qualities provide distinct challenges in the marketing of services as opposed to products. Third, the difficulties that have been stated need one-of-a-kind answers (Ziethaml et al, 1985).

According to Papastathopoulou (2006), service marketing has gone through three phases in order to become a significant sub-unit of marketing: the crawling out stage, the crawling out stage, and the crawling out stage (pre-1980). The Scurrying about stage (1980-1985) and The Walking Erect stage (1986-today) (1986-today). Services marketing ideas, frameworks, and strategies were formed as a consequence of interconnected forces of various sectors, companies, and people who understood the rising importance of services in the contemporary global economy, according to Strydom (2004). Initially, service sectors were the focus of services marketing development. Manufacturing and technology companies, on the other hand, have long recognised services as a necessary complement to their goods in order to compete effectively in the marketplace. As a result, it may be claimed that delivering a service is no longer a choice but a requirement in most businesses.

OBJECTIVES OF THE STUDY:

1. To identify the problems of service marketing in a globalized business environment.
2. To appraise strategies used in marketing services in global businesses.
3. To suggest and to overcome these problems.

Importance of Services Marketing:

1. Creation of Workplace Opportunities:

The service sector's components are many and diverse. Personal care, education, Medicare, communication, tourism, hospitality, banking, insurance, transportation, and consultant services are all examples of the service industry. The expansion of the service industry in a planned and methodical manner would result in a massive increase in job possibilities.

2. Optimal resource utilisation:

Personal care services, entertainment services, tourist services, and hotel services all contribute to economic development without depleting natural resources. In some ways, the expansion of these types of service businesses conserves natural resources. As a result, services marketing contributes to the conservation of valuable resources for future generations.

3. Creation of capital:

There are signs that services may expand at a faster rate in the foreseeable future. The service industry is expanding due to economic, social, and political causes. When compared to manufacturing, the service sector has significantly more investments and employment creation.

4. Improved living standards:

The quality and grade of items consumed or services provided in day-to-day life will determine the people's standard of living in any nation.

5. Utilization of eco-friendly technology:

Almost all services nowadays are determined to be technology-driven. When providing services, developed nations make extensive use of cutting-edge technology. Service-generating firms such as banks, insurance companies, tourism, hotels, communication, and education services employ technologies that are not harmful to the environment in any manner.

CHARACTERISTICS OF SERVICE MARKETING:

The presence of a number of features of services that are frequently stated in the literature justifies a distinct study of services marketing: intangibility, inseparability of production and consumption, heterogeneity, and perishability.

1. Intangibility:

Intangibility is the basic distinction identified by Bateson (1995) and Lovelock (1999). This is true because, unlike products, services are performances that cannot be seen, felt, tasted, or touched in the same way that goods can. The essential goods-services distinction from which all other distinctions derive is intangibility.

2. Inseparability:

The simultaneous production and consumption that characterises most services is referred to as inseparability of production and consumption. Unlike products, which are created, sold, and consumed sequentially, services are sold first, then produced, and consumed concurrently (Zeithaml, Bitner, and Gremler, 2006). Since the consumer must be present throughout the creation of many services (haircuts, aircraft journeys), inseparability "forces the buyer into close touch with the production process." Inseparability also implies that the seller and the producer are one and the same person. In most situations, only direct distribution is feasible, making marketing and manufacturing very participatory.

3. Heterogeneity:

It is concerned with the possibility of considerable variability in service performance. The quality and substance of a service (such as a medical checkup, vehicle rental, or restaurant meal) might differ from one producer to the next, from one consumer to the next, and from one day to the next. For labor-intensive services, heterogeneity in service output is a specific issue. Many diverse personnel may come into touch with a same consumer, posing a challenge of behaviour consistency. The quality of service provided by the same person may vary.

4. Perishability:

It indicates that services cannot be spared (Bessom & Jackson 1975, Thomas, 1978, quoted in Zeithaml et al). (2006). Motel rooms that haven't been filled, airline tickets that haven't been bought, and phone line capacity that hasn't been utilised can't be returned. Services organisations generally struggle to coordinate supply and demand since services are often one-time events that cannot be preserved. Sometimes there is too much demand (a popular restaurant on a Saturday night), and other times there is not enough demand (an income tax service in the summer). According to the literature, each distinctive feature of a service causes particular issues for service marketers, necessitating various techniques for dealing with it.

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CLASSIFICATION OF SERVICES MARKETING

1. People-processing services:

These services need the presence of the consumer while the service is being given. Such services are usually directed or applied to individuals, therefore their presence is required. Customers must be willing to spend time collaborating with the service operator in order to utilise, appreciate, and purchase these services (Lovelock, Vandermerwe & Lewis, 1996). Medical services, passenger transportation, hotels, fitness centres, and beauticians are all good examples.

2. Processing of possessions:

The services are geared on people's belongings, such as safe transportation, washing, and repair. These services, obviously, do not need consumer participation and are less difficult than people processing services.

3. Information/mental stimulation services:

A growing number of services geared towards people's brains and assets, such as entertainment and education, fall under this area. Many of these services are represented in items such as CD ROMs, DVDs, books, movies, and cassettes, as observed by Vandermerwe and Chadwick (1989), and hence exportable as products. The usual worldwide marketing philosophy may be applied to personal interaction with these services.

CHALLENGES OF SERVICE MARKETING

According to Linton (2014), service enterprises confront distinct problems than companies that sell tangible goods. Service businesses are selling an intangible product that the consumer will not be able to experience until the company has provided it. While certain parts of service marketing are comparable to product marketing, the service sector must focus on offering value, uniqueness, and specialisation.

1. Price:

The degree to which a service is regarded by its client to suit his or her requirements or desires, as assessed by the customer's willingness to pay for it, is referred to as service value. Customers and prospects want a service company to show value. Accountancy, computer maintenance, and insurance are all necessary for a company's day-to-day operations to run smoothly. Marketing, training, and consulting, on the other hand, are more ancillary services. Service providers must show that their services offer value to their customers' businesses. Training, for example, may boost employee productivity and performance. A business may also need to demonstrate how marketing services might help it gain a competitive edge. Alternatively, a consultant may assist a business in improving its operations and profitability.

2. Service Improvement:

When compared to product companies, service companies have higher development expenses. Service businesses are unable to maintain typical services in stock or benefit from economies of scale. For each assignment, they must design a fresh version of a service that is tailored to the demands of particular clients. To establish a service, a representative meets with the client to discuss their needs, creates a service specification for approval, then assembles the pieces required to execute the service.

3. Constructive competition:

Direct and indirect competition exists in the service industry. Other service organisations that provide comparable services, as well as manufacturers that provide services to support their goods, are direct rivals. For example, a company that provides computer maintenance services confronts competition from other maintenance companies as well as computer manufacturers' service divisions. Customers who supply services using their own internal resources are also a type of indirect competition for service organisations. To encourage customers to outsource their operations, service firms must show that their offering is both better and cost efficient.

4. Distinctiveness:

Customers can only determine a service's quality after they have used it. They are unable to check the service in the same manner that a product on a shelf can be examined. As a result, service businesses must find ways to set themselves apart from their competitors. Professionalism may be shown via accreditation with a recognised beds. Firms strive to establish a positive reputation by publishing authoritative papers or speaking at industry conferences. Specialization might also help you stand out from the crowd. A company that provides training services, for example, might set itself apart by concentrating on customised training for a certain industry, such as financial services.

STRATEGIES OF SERVICE MARKETING:

1) Application of the Extended Marketing Mix:

For product marketing, the 4P's marketing mix (Product, Place, Price, and Promotion) has been the most extensively used model. It depicts the corporation developing a product and pricing offer, as well as an integrated marketing mix, in order to reach the target customers via the chosen distribution channels. The 4 P's of marketing have traditionally been the primary areas where marketing managers deploy limited corporate resources to accomplish company goals. Intangibility, heterogeneity, inseparability, and perishability are all characteristics of services. Because of the distinctions between services and physical products, Booms and Bitner (1981) proposed that the 4P framework be expanded to include three additional factors: Marketing mix factors for services marketing include people, physical proof, and processes.

a) People:

Employees and other consumers are examples of persons who are actively or indirectly engaged in the consumption of a service. Service organisations rely greatly on their workers' capacity to offer the service due to the inseparability of production and consumption for services, which entails the simultaneous production and consumption of services.

Employees contribute to service quality through promoting the company's image and offering superior service to rivals. The service providers are involved in the service's production in real time. They are the provider of services. The fact that a service is a lived-through event contributes significantly to its uniqueness.

Service companies must figure out how to properly manage contact staff so that their attitudes and actions are conducive to providing high-quality service. This is particularly essential in the service industry since workers' performance varies, which may lead to varying quality, or heterogeneity, in service delivery.

The absence of service uniformity causes problems for service providers. Because service delivery happens through interactions between contact personnel and customers, service providers' attitudes and behaviours may have a substantial impact on consumers' opinions of the service.

b) Physical:

The environment in which the service is constructed and in which the vendor and consumer interact, as well as tangible commodities that enable or communicate the service, are referred to as physical evidence. All tangible representations of service, such as brochures, letterhead, business cards, reports, signs, online presence, and equipment, are included in the physical proof of service.

c) Process:

The methods, mechanisms, and flow of activities through which the service is supplied, i.e. the service delivery and operational systems, are referred to as process. Services often entail a series of steps and activities since they are acts or actions performed for or with consumers. Customers assess the service process as a result of the combination of these processes.

In addition, in a service scenario, consumers are likely to have to wait in line before being serviced, and the service delivery itself is likely to take some time. It is beneficial if marketers ensure that clients are aware of the service acquisition procedure and the acceptable delivery periods.

For service businesses, creating and monitoring good service procedures is critical. This is especially true since services are perishable, which means they can't be inventoried. Whether it's kept for future use or returned, it's up to you. Hotel rooms that haven't been occupied and airline tickets that haven't been bought can't be recovered. Service firms have a problem in managing conditions of excess or under demand since services are non-storable performances.

2) Differentiating Your Service:

It's not uncommon for service marketers to lament the difficulties of distinguishing their offerings. A dentist, for example, would ponder how it might set itself apart from other dentists. While it may be tempting to compete on price, doing so frequently hurts rather than helps your organisation since rivals will drop their

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rates to match. Develop a distinct product, delivery, image, and/or quality as an alternative to compete on pricing.

a) Make an offer:

Innovative features might be included in an offer. The core service or quality.package is what people anticipate, and you may add a secondary service feature to it. A coffee establishment, for example, may provide free internet connection and nice sofas as additional services.

b) Shipping:

A service organisation may improve its service delivery by hiring and training better employees, creating a more appealing physical setting, or designing a faster delivery procedure.

c) Image:

Symbols and branding may also help service firms distinguish their image. Use a nice logo and symbols to assist customers identify high quality with your services if your firm is respected and delivers a valuable service.

d) Service Excellence:

By continually providing higher-quality services and surpassing consumer expectations, you may get an advantage over your competition. Past experiences, word of mouth, and the messages you send via advertising shape their expectations. Customers will lose interest in your services if you do not meet or surpass their expectations.

III. CONCLUSION

To be effective at services marketing, today's marketer must understand how the nature of services might affect marketing strategy. While creating revenues for the organisation, service marketing gives customers with intangible processes and experiences. To achieve this goal, a firm understanding of the need to develop strategies to overcome the challenges posed by the internal and external business environments can significantly improve the survival and sustainability of service marketing organisations in a global market place.

IV. RECOMMENDATIONS

Intangible, indivisible, changing, and perishable are all characteristics of services. Each of these features poses a challenge to marketers and necessitates the use of certain methods. The intangible must be made concrete by (marketers):

- It needs to boost its service's productivity (and hence profitability).providers:
- Have to keep service quality fluctuation to a minimum:
- Should adjust service provision in response to variations in demand.
- Optimal combination of strategic factors (7Ps) to address service difficulties marketing.
- Marketers may more successfully sell their offers to their target audience by tailoring these methods to the particular qualities of services.

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THE ROLE OF CURRENT AND EMERGING ETHICAL ISSUES IN MARKETING SERVICES

GANGADHARA RAO. U[1], NINGIBOTHU BHARANIDHAR[2] , Dr. JALADI RAVI[3]

[1]Research Scholar (Part-Time), Department of Commerce and Management Studies,Andhra University, Visakhapatnam, Andhra Pradesh State. Ph:9398787969

Email: mba.ugr@gmail.com

[2]Research Scholar (Full-Time),Department of Commerce and Management Studies,Andhra University, Visakhapatnam, Andhra Pradesh State. Ph:9177744039

Email Id: nbharanidhar2011@gmail.com

[3]Professor,Department of Commerce and Management Studies,Andhra University, Visakhapatnam, Andhra Pradesh State.

ABSTRACT

Marketing is defined as a social process through which people and organisations achieve what they want and desire by developing, selling, and freely trading valuable items and services. Marketing is the act of identifying and converting customer wants and requirements into goods and services, generating demand for these products and services via a network of marketing channels, and increasing the market base in the face of competition. The goals range from assessing existing and upcoming ethical alarms to explaining particular real-life models that embody those fears and the influence they have on individual customers and society as a whole. As a result, it is important to pursue particular pathways that are based on good intents and ethics in order to benefit society and societal ideals. This paper looked into the components of ethical marketing, emerging ethical issues in marketing, and how these factors affect consumers and society, with a focus on current and emerging ethical issues that Marketing Services are facing, as well as the best directions and proposals for making services..

Keywords: Ethics, Marketing Ethics, Emerging Ethical Issues. Ethical Marketing.

INTRODUCTION:

Marketing is defined as a social process through which people and organisations achieve what they want and desire by developing, selling, and freely trading valuable items and services. Marketing is the act of identifying and converting customer wants and requirements into goods and services, generating demand for these products and services via a network of marketing channels, and increasing the market base in the face of competition. Paul Mazur's concept is more meaningful from a larger sociological standpoint. Marketing, according to Mazur, is the process of creating and delivering a standard of life to society. This is a much larger perspective, in which the company is seen as an organised behaviour system that produces valuable outputs for customers.

Marketing is described as the creation and distribution of products and services for specific consumer categories with the objective of achieving profitability while maintaining customer happiness. New product ideas and designs are studied and produced to fulfil particular customer demands as part of marketing operations. Other than the distribution function, this broad definition of marketing encompasses a wide range of organisational functions.

Thanks to technological advancements and creativity, the new economy has emerged in the twenty-first century. To comprehend the new economy, it is necessary to first comprehend the old economy's traits and attributes. The old economy began with the Industrial Revolution, which focused on mass production of standardised items in large numbers. This mass product was critical for cost-cutting and servicing a huge customer base, and as manufacturing rose, corporations moved into new markets around the globe. The ancient economy featured an organisational structure, with top management issuing orders that were carried out by a middle manager over labour.

Ethics and Ethical Marketing:

In the literature, the term ethics refers to a set of moral norms, principles or values, and the nature and grounds of morality that guide people’s behavior such as moral judgments, standards, and rules of conduct [2,3]. The terms unethical or ethical describe an individual’s subjective moral judgment of right/wrong or good/bad. By nature, moral sentiments can be either neutral or negatively/positively valanced [1]. Shea argued that “ethics is a discipline that deals with what true and false is [4]. Ethics in marketing transpires from marketing executives’ relationships with organizational members, consumers, rivals, and the sides and include public opinion in the exchange process” [5]. On the other hand, business ethics is a vital topic for scholars and practitioners [6, 7]. Corporate ethics requires setting and maintaining minimum standards of responsibility and behavior that companies should follow or a system of accountability for a company's implementation of its ethical role [8].

Considering previous business ethics research, a plethora of research has focused on the relationship between ethical management and ethical activities. Ethics is also closely related to social responsibility because social responsibility relating to ethics includes social relationships within society, in which enterprises work [9-12]. Consumers in current society continue to demand more high-quality products, and they display a preference for brands that are socially reputable even at higher prices when evaluating similar products [13]. Ethical marketing practices provide managers and marketers with a guideline concerning what they should do when they face an ethical problem [14]. Gaski defined "ethical marketing as a code of morals and conduct used in marketing practices" [15]. Some scholars define it as "the systematic study of how moral standards are applied to marketing decisions" [16]. Marketing continuously involves ethical and moral activities [17,18]. Ethical marketing practices include product-related ethics, price-related ethics, place-related ethics, and promotion-related ethics.

Objectives of the Study:

1. To study impact of consumer and society on current and emerging ethics in marketing.
2. To Focus on current and emerging ethical issues facing by marketing services.
3. To suggest directions and proposals for making services.

Impact on Consumer and Society:

The above conduct we see that there are two main folds that have impact first has direct on consumer and the second has on society. People think that they pay high prices because the companies use high marketing camping for the products. When they see that product is heavily priced for promotions and advertising so the excessive price is paid by the consumer thorough, in reality consumer is the one paying all the expensive incurred (Philip Kotler & G. Armstrong, 2009:38).

Some marketers even use deceptive marketing saying that they offer product on low prices as of whole scale however ,they do not , and on comparison consumer find a huge price difference just because they see few of the difference in packing and labelling of the product. So, the mode of marketing of does affect the price of the product as the expensive and better the marketing of a product is high its price is . So the consumer and buyer have been known to be directly affected by the way of marketing and the expenses sent on the promotion of he product.

Marketing has changed the people's nature by turning their desires and wants into their needs. It has made people materialistic and has created many problems for the society. People judge other by their possessions and not by their nature and behaviour. Each country has a different culture, values and norms but advertisement that sent message related to sex power and materials goods are changing mind of people. Unethical way of marketing has polluted our social values and added a big deal of the poor and week moral values and high crimes to our society at all. The adult marketing style has increased the attention of people towards the sex and sexual actions where other bad ways of marketing has highly weekend the social elements .

On many say that the marketing effect on the people is exaggerated because as a matter of fact people make up on their mind and purchase what they want to and that does not rely on the advertisement but also on the quality of the product this can be proved by the fact that most of the new products still enjoy the edge over the other just because they give what they promise to .advertisement of the product is not the key to success but the prefect working and excellent result is the main thing which brings about the high demand of the product again and again happily .

Some of the people think that the business has created this issue and the two main reason that are; consumerism and environmentalism, consumerism is said to have concerns with the needs and wants of consumer while the environmentalism is related to the affects that the marketing has no environment (Philip Kotler & G. Armstong, 2009:38). They are not against it but want marketers to work in an ethical and moral full way. The main attention is towards the mutual relationship and the balance among the marketers and the environment so that no loss could be found in both the field rather a healthy and proper relationship could be bought about.

Focus on current and emerging ethical issues facing by Marketing Services:

Most of the marketing literature and books are dominated with examples of business practices of manufacturing and product marketing companies. This is due to rapid application of marketing concepts to product marketing and domination of manufacturing and product marketing in business across the world. However, the service sector has come to stay as one of the key drivers of modern economic systems. While, consumer affluence is propelled by increase in income level, and generation of wealth across majority of industrialized nations, it has also contributed towards growth in services.

The service economy contributed more than half of the Gross Domestic Product in many of the developed nations. Even in developing countries like India and China, services have emerged as a key sector fueling growth and success for business houses. Many of the successful manufacturing companies like Tata, Birla and Reliance have entered into the service business.

The service sector has become more competitive and is posing more challenges to marketing managers to apply marketing principles and strategies to achieve success in the service sector. Deregulation, economic liberalization and rising expectations of consumer have made managers to apply managerial skills, practices and strategies to satisfy consumers.

The industrial revolution saw development of many services whose existence was important for economic development. For example, without development in transport and shipping services, goods would not have been able to move across the nations, without financial services and distribution of finance and wealth to entrepreneurs, business would not have got the desired feed for seeding and growth. So, a strong service industry emerged to meet the needs of manufacturing sector, to meet the demand patterns of intermediaries who took the output of manufacturing sector for wide distribution to consumers. Since then, service sector has come to stay as the biggest source of employment and value generation.

Directions and proposals for making services:

After going thought all the issues and concerns that exist in the marketing field today, we need to come up with some rules and regulations that all the companies must follows, American Marketing Association (AMA) has set some of the rules and that the marketers should be responsible for the actions he take and the reactions and the effects of that. He must work in a way that the individual ,society and environment all are satisfied, this means marketers has to act in a way that does not harm anyone , to follow the rules and regulations, to get proper training.

Marketing of Ethics means that there should be a clear understanding of what is right and what is wrong means what should be done and what should not . On the other hand, social responsibility means that if there is any sort of harmful effects on the society then they must be removed so to get the positive behaviour. Companies that work on both are the one that are seen as working for the whole society's wellbeing.

Those participating in the marketing exchange process are expecting those product or services that are offered are safe, alleging that they were deceptive as to communicating a product but they have done it on good faith. This should not discharge them from taking the responsibility of the action, so they must be aware that no such kind of misleading marketing is done otherwise the trade descriptions act take that into consideration (F.D. Rose ,2010:93). Moreover, there must be clear price and no hiding cost rules and regulations so that a proper method of marketing get active into form and there should be a non-violent and good way to promote the products could be removed so that the proper relationship and development of mutual interest that consumer is not misled. And the research department must also represent it clearly without omitting anything. So the buyer should not feel reluctant or confused regarding the increased or changed price and quality of the product in case of the alternative price tags .If there is any sort of unethical activity going on around marketer must control it so that it has a good effect on the overall organization. The codes set by American Marketing Association (AMA) must be followed if not then there is legal action for that and it may suspend the company that can affect the image. Some people think that those codes must be mandatory so that they are more willingly adopted.

However, there must be rules keeping in mind marketers are human beings and therefore as marketers are business people it could be useful those certain guidelines should be drawn concerning business people. Business requirements and needs should be kept in mind while making the marketing and ethical rules and regulations so that the marketers could feel free and easy to these guidelines practically. This will supress the violent attitude of people and bring the good values too.

One more ethical conduct set by Direct Marketing Association (DMA) is that when direct selling product there must be clear offers for the consumer, the price, additional cost, any terms and conditions should be stated clearly. The products that have warranties and guarantees must be stated clearly and the name of the company and brand should be told. The privacy of the customer should be kept and they should be treated in convenient manner. Do not ask to cancel any deal with other company if they wish to deal with you too. If there is trail version of their product so make sure it the authentic one. Direct marketing and selling of objects need the proper outcome and showing of all the factors about the products and this also vanish the confusion and dangers regarding the product the products instead there is a clean and fine dealing among the costumers and seller and a good ethical information must be accurate and therefore not misleading some companies play with human psyche such as pharmaceuticals by advertising drugs and claiming that it can make you live a healthy life style.

This unethical as the use of drug is injurious to health and asking a doctor for taking a drug can create a problems as well . these must be advertised clearly means the effects should illustrated and the salesman must not take the advantage of consumer's limited knowledge and should make everything clear to him before selling that drug if companies act according to the above rules then they are said to be on the right track that is ethical(J. P. Khan, August 9 1999).

CONCLUSOIN

Generally, ethical issues arise due to the difference between the individual and company's values and norms. Sometimes the competitions also makes you and propels you to go for unethical means when you see you competitor doing so like false publicity, using wrong statistics, biased situation, etc. these situations also lead you to unethical marketing and related issues. So, the marketers should always shoe the side effects, usage and the components of the product so that people may not get deceived or buy a wrong product only because of the hiding of certain factors .this also shoe the good ethics of marketers and society.

The only way these unethical behaviours can be stopped is by enforcing them properly and then by making sure that everyone follows it. And if someone does not then the proper actions must be taken against them for breaching the codes of conduct. The moral values are required in this regard strengthen the social values ultimately the ethical code of conduct. If moral values of the society are weak then there will be no ethic and strong moral values will be strengthen the ethics (A. Macintyre, 2007:3).

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EARLY PREDICTION OF CORONARY HEART DISEASE

Mr. MD. IMRAN, M. Tech, Assistant Professor, Dept. of INFORMATION TECHNOLOGY, ANDHRA LOYOLA INSTITUTE OF ENGINEERING & TECHNOLOGY, A.P., India.

LAKSHMIPRASANNA V, JAHNAVI G, SAI SREE T, Students, B.Tech (IT), ANDHRA LOYOLA INSTITUTE OF ENGINEERING & TECHNOLOGY, A.P., India.

Abstract — In this paper, This study proposes an effective heart disease prediction model (HDPM) for a CDSS which consists of Density-Based Spatial Clustering of Applications with Noise (DBSCAN) to detect and eliminate the outliers, a hybrid Synthetic Minority Over-sampling Technique-Edited Nearest Neighbor (SMOTE-ENN) to balance the training data distribution and XG-Boost to predict heart disease.In this project we make use of real time hospital dataset. The proposed work predicts the chances of Coronary Heart Disease and classifies patient's risk levels by implementing different Machine learning techniques such as Support Vector Machine, KNN, Random Forest, Decision Tree. Thus, this presents a comparative study by analyzing the performance of different Machine Learning models.

INTRODUCTION

In Heart disease is a cardiovascular disease (CVD) that remains the number one cause of death globally and contributes to approximately 30% of all global deaths. If unmitigated, the total number of deaths globally is projected to increase to around 22 million in 2030. The American Heart Association reported that nearly half of American adults are affected by CVDs, equating to nearly 121.5 million adults. In Korea, heart disease is among the top three leading causes of death and contributed to nearly 45% of total deaths in 2018 [3]. Heart disease is a condition when plaque on arterial walls can block the flow of blood and cause a heart attack or stroke. Several risk factors that can lead to heart disease include unhealthy diet, physical inactivity, and excessive use of tobacco and alcohol. These risk factors can be minimized by practicing good daily lifestyle such as salt reduction in the diet, consuming fruits and vegetables, doing regular physical activity, and discontinuing use of tobacco and alcohol which eventually could help to reduce the risk of heart disease [4]. The early

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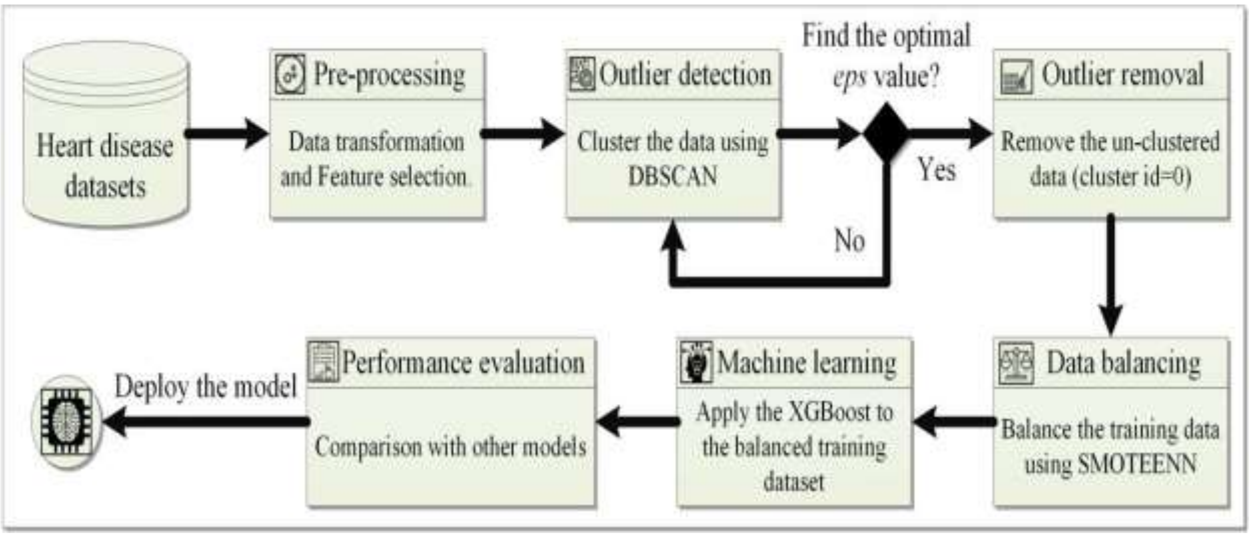
heart disease identification of high-risk individuals and the improved diagnosis using a prediction model have generally been recommended to reduce the fatality rate and improve the decision-making for further prevention and treatment.



System Architecture

PROPOSED SYSTEM

In the existing system, the results are compared for two datasets and the results are compared with various machine learning algorithms. A clinical decision support system, a hybrid Synthetic Minority Over-sampling Technique-Edited NearestNeighbor (SMOTE-ENN) to balance the training data distribution and XG-Boost to predict heart disease. Two publicly available datasets (Statlog and Cleveland) were used to build the model and compare the results can be used to diagnose the subject's heart disease status earlier. This study proposes an effective heart disease prediction model (HDPM) for a CDSS which consists of Density-Based Spatial Clustering of Applications with Noise (DBSCAN) to detect and eliminate the outliers with those of other models (naive Bayes (NB), logistic regression (LR), multilayer perceptron (MLP), support vector machine (SVM), decision tree (DT), and random forest (RF).

Disadvantages Of Existing system

- Time consuming.
- Require high storage capacity

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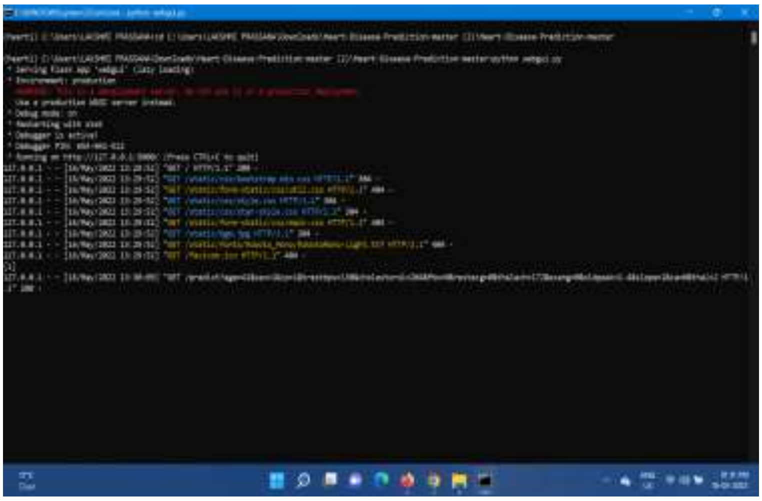
PROPOSEDSYSTEM

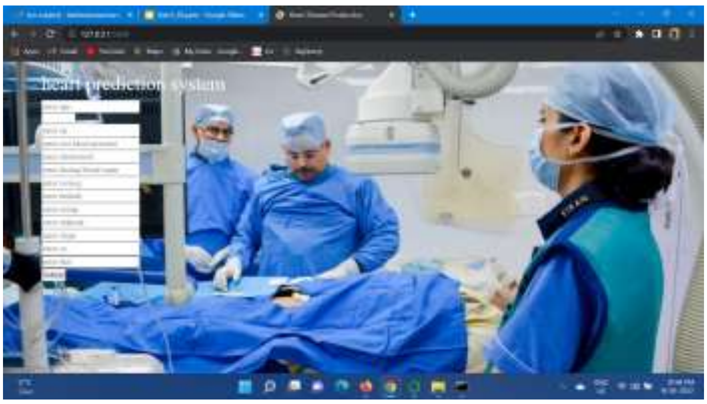
The proposed system overcomes the drawbacks of the shortcomings of the existing system. Managing fast execution and can work with minimum storage capacity. This results gives the maximum accuracy.

Advantages of Proposed system

- Consumes less time.
- Minimal manpower.
- Paper-less management.

RELATED WORK





Home Page for Heart disease prediction

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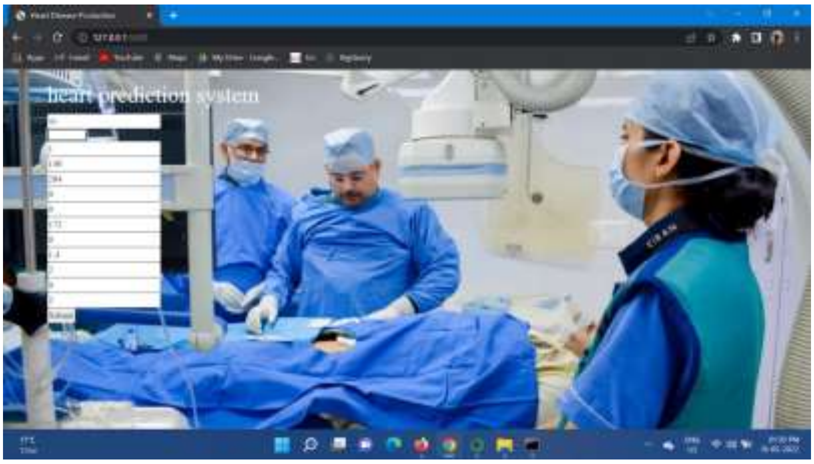

Input values

CONCLUSION

In this paper, We proposed an effective heart disease prediction model (HDPM) for heart disease diagnosis by integrating DBSCAN, SMOTE-ENN, and XGBoost-based MLA to improve pre-diction accuracy. The DBSCAN was applied to detect and remove the outlier data, SMOTE-ENN was used to balance the unbalanced training dataset and XGBoost MLA was adopted to learn and generate the prediction model. Using datasets of heart disease were utilized by produce the generalized prediction model. We performed evaluation analysis of our proposed model with other classication models and the results from previous studies. In addition, we presented the statistical evaluation to our model as compared to other models. The experimental results conformed that the proposed model achieved better performance for the taken dataset than previous study results, by achieving an accuracy up to 84.90%. In addition, the statistical-based analysis result also showed the significant improvement for the proposed model as compared with the other models.

FUTUREENHANCEMENT

Furthermore, we also designed and developed the proposed HDPM into the Heart Disease Clinical Decision Support System (HDCDSS) to diagnose the subjects'/patients' heart disease status effectively and effciently. The HDCDSS gathered the patient data combined with other diagnosis data and transmitted them to a secure web server. All the transmitted diagnosis data were then stored into MongoDB, which can effectively provide timely response with rapidly increasing medical data. The proposed HDPM was then loaded to diagnose the patients' current heart disease status, which was later sent back to the HDCDSS's diagnosis result interface. Thus,

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the developed HDCDSS is expected to help clinicians to diagnose patients and improving heart disease clinical decision making effectively and effciently. Finally, the overalldesigned and developed HDCDSS in this study can be used as a practical guideline for the healthcare practitioners.

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AUTOMATIC ATTENDANCE SYSTEM THROUGH FACE RECOGNITION

Mr. MD. IMRAN, M. Tech, Assistant Professor, Dept. of INFORMATION TECHNOLOGY, ANDHRA LOYOLA INSTITUTE OF ENGINEERING & TECHNOLOGY, A.P., India.

M. ROSHINI, S.RAMYASRAVANTHI, B. NIHARIKA, Students, B.Tech (IT), ANDHRA LOYOLA INSTITUTE OF ENGINEERING & TECHNOLOGY, A.P., India.

Abstract — In this paper, Now-a-days attendance is the major process that can be done in any educational institutions, and it is a time taking process for every educator in a piece of paper. In this project we take the attendance by recognizing the face of the students and mark the attendance in a excel sheet with the date and time and if the person absent for the class, then the message will be sent to parent telegram id, so that we can save the time and the records of student data and details of student will be stored in a particular location or in a particular file. This research is aimed to develop less intrusive, cost effective and most efficient as automatic attendance system through face recognition using Machine learning with Python.

INTRODUCTION

The human face is a unique representation of individual identity. Thus, face recognition is defined as a biometric method in which identification of an individual is performed by comparing real time capture image with stored images in the database of that person. Face recognition is crucial in daily life in order to identify family, friends or someone we are familiar with We might not perceive that several steps have actually taken in order to identify human faces Human intelligence allows us to receive information and interpret the information in the recognition process. We receive information through the image projected into our eyes, by specifically retina in the form of light. Light is a form of electromagnetic waves which are radiated from a source onto an object and projected to human vision. Robinson-Riegler, G., & Robinson Riegler, B. (2008) mentioned that after visual processing done by the human visual system, we actually classify shape, size, contour and the texture of the object in order to analyze the information. The analyzed information will be compared to other representations of objects or face that exist in our memory to recognize. In fact, it is a hard challenge to build an automated system to have the same capability as a human to recognize faces. However, we need large memory to recognize different faces, for example, in the

Universities, there are a lot of students with different race and gender, it is impossible to remember every face of the individual without making mistakes. In order to overcome human limitations, computers with almost limitless memory, high processing speed and power are used in face recognition systems.

PROPOSED SYSTEM

In the existing system, the college has to manually maintain the information regarding the student attendance. This involves a lot of man-work be it either writing by hand or storing it in MS Excel file on a computer.

Maintenance of these attendance sheets is very difficult as they have to be arranged in a particular order be it by the register number of the student or by academic year. Retrieval and updating information are tedious tasks. Sometimes the files might get lost or damaged which leads to loss in data as there might be no back-ups. This burdens them as there is a lot of data to work on.

So, this system of student attendance management system is proposed for ease of the management staff and student.

LIMITATIONS

- Time consuming.
- Need more manpower.
- Difficult to handle.
- Difficult to update data.
- Difficult to search a specific student's record.

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PROPOSED SYSTEM & ITS ADVANTAGES

The methodology that used in this project is Haar Cascade classifier and LBPH algorithms: At first it resizes the image where the original image that we have considered is very large after classifying or resizing of images it loads the image and convert it into a gray-scale images the reason for this gray channel is easy to process and it is computationally less intensive as it contains only one channel of black-and-white. After converting RGB image to gray we further classifies or extract features of face using face classifier and using in built function to detect multiple faces.

The another algorithm used for this project is LBPH (Local binary pattern histogram): It actually done by 2 methods:

1) Face recognition: It recognizes the facial images which are already resized and converted to gray scale image.

2) Face detection: It is used to find the face

Verification: It basically compares the input facial image with the facial image related to the user which is requiring the authentication.

Identification: It basically compares the input facial image with all facial images from a dataset.

ADVANTAGES

- Consumes less time.
- Minimal manpower.
- Paper-less management.
- Hassle free.
- Easy to maintain.
- High Security.

LITERATURE SURVEY

1.Automatic Face Detection and Recognition for Attendance Management

- Proposed in 2020, By Jayadev Madhavan and his group
- This project is based on Deep Learning.
- For face detection they have used YOLO v3 and MTCNN models with denoise and quality check methods.

- Noises encountered while processing an image are : pose, angle, facial expression, light conditions, size of faces in an image, occlusions.
- This gives better accuracy , but performance was reduced. Takes a huge amount of time to run.

2. Face Recognition Based Attendance Monitoring System

Proposed in 2019, By Omkar Balaji Biradar, Anurag Shashank Bhave In this project th

ey have used Raspberry – pi and OpenCV.

The algorithm used is Haar Cascade.

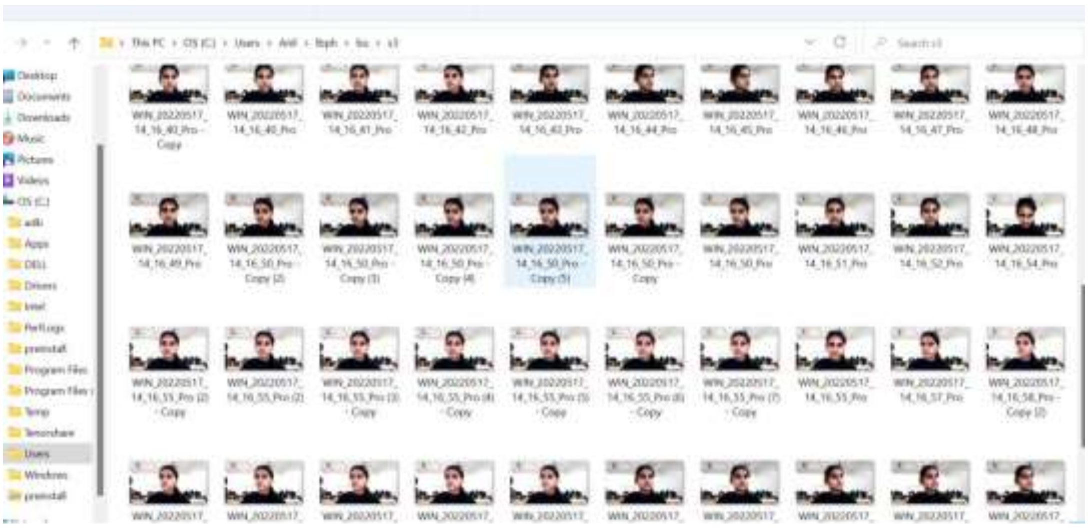
They have written a separate code for data generation and for face recognition, hence detected face will be taken, and the by applying Haar based cascade feature, a threshold value is calculated to check the similarity.

Disadvantages were, the Raspberry-pi used is high cost and we cannot guarantee its working, a high- resolution camera is needed, image quality is necessary for face detection.

3. Automatic Attendance Management System using Face Detection

- In this project they have used Eigen Faces algorithm for face Detection.
- Eyeball is detected using eyeball sensor which senses blinking of an eye and locates the iris, if iris is recognized attendance is marked.
- Software used - OpenCV, NumPy.
- Disadvantage was it takes lot of time for detecting eyeball.

RELATED WORK



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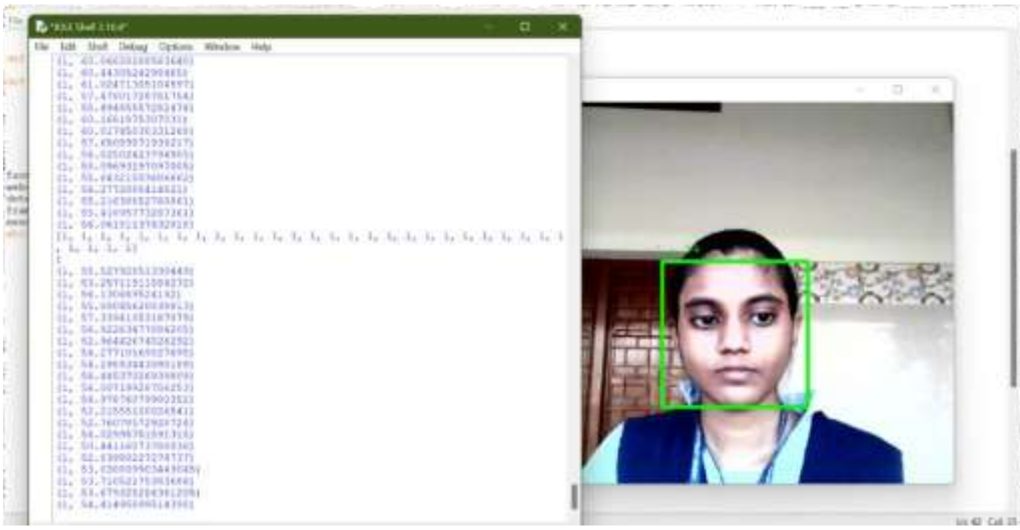

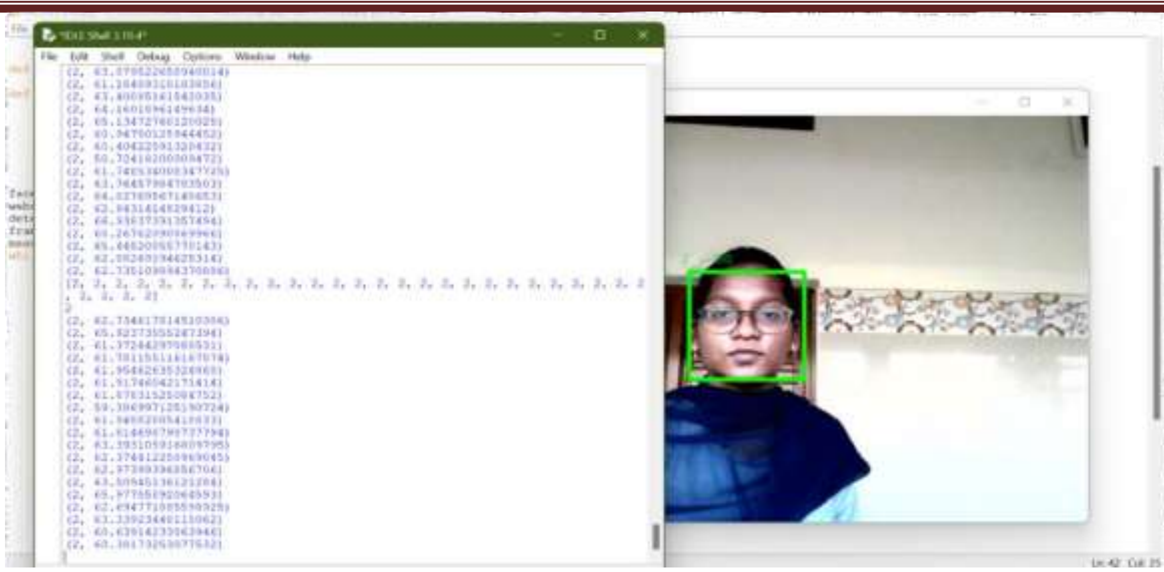

CONCLUSION

In this paper, Finally, in the student attendance management system, the outcome of all the hard work done for attendance management system is here. It is software that helps the user to work with the endance, fees update, course update, and messages, etc. This software reduces the amount of manual data entry and gives greater efficiency.

The User Interface of it is very friendly and can be easily used by anyone. It also decreases the amount of time taken to write details and other modules. All the details about students, teachers, and their other tasks can only be seen by the verified users. This Attendance Management System is a solution to all the problems related to the attendance, message, fee status, courses taken by the teachers and the students, etc.

In the end, we can say that this software is performing all the tasks accurately and is doing the work for which it is made and this system can be implemented in N number of colleges and schools.

To conclude, Project Data Grid works like a component which can access all the databases and picks up different functions. It overcomes the many limitations incorporated in the attendance.

- Easy implementation Environment
- Generate report Flexibly

The Attendance Management System is developed using fully meets the objectives of the system which it has been developed. The system has reached a steady state where all bugs have been eliminated. The system is operated at a high level of efficiency and all the teachers and user associated with the system understands its advantage. The system solves the problem. It was intended to solve as requirement specification.

FUTURESCOPE

It can be easily implemented at any institute or organization.

A method could be proposed to illustrate robustness against the variations that is, in near future we could build a system which would be robust and would work in undesirable conditions too. Here it is proposed for an institute to take the attendance of the students but in future it can be used to do the same work at entry as well as exit points.

I am working to improve the face recognition effectiveness to build more efficient systems in near future. In further work, authors intend to improve face recognition effectiveness by using the interaction among our system, the users and the administrators. On the other hand, our system can be used in a completely new dimension of face recognition application, mobile based face recognition, which can be an aid for common people to know about any person being photographed by cell phone camera including proper authorization for accessing a centralized database.

- Camera Access by mobile Camera rather Web cam.
- Get an ID card with name, class, ID, Barcode and Photo on it.
- Student can access his/her attendance dates individually to his Email account.
- More Authority to the Admin like, add or remove Faculty, update student details etc.

- More information can be stored of students like Email ID, Address, Phone No etc.
- Semester and Class wise access to Faculty.

More than one Faculty can Access the Application

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AN INTEGRATED APPROACH FOR SOCIAL DISTANCING AND FACE MASK DETECTION USING DEEP LEARNING

Mr. S. Kishore Babu M.Tech.,(Ph.D),Associate Professor & HOD, Department of IT, ANDHRA LOYOLA INSTITUTE OF ENGINEERING & TECHNOLOGY, A.P., India.

V.CHAYASRIKIRANMAI, S.BHAVITHA,B.TEJASWINI, Students, B.Tech (IT), ANDHRA LOYOLA INSTITUTE OF ENGINEERING & TECHNOLOGY, A.P., India.

Abstract — In this paper, The proposed system detect the violation of social distance and face mask for the prevention of spread of viruses like COVID-19.The proposed methodology involves taking input from a CCTV feed and detecting humans in the frame, using YOLOv5. These detected faces are then processed using Stacked ResNet-50 for classification whether the person is wearing a mask or not, meanwhile, EUCLIDEAN FORMULA is used for distance computation and has been used to detect proximities within the persons detected.

INTRODUCTION

A novel virus has caused a world pandemic and huge life losses. Declared by the World Health Organization (WHO), this coronavirus originated from Wuhan, China in late December 2019. Upon thorough research, the virus has been observed as pathogenic and transmissible by air or by coming in close contact with an infected person. To avoid the spread of this virus, many measures have been suggested, such as maintaining a social distance, that is, maintaining a proper physical distance between people and lessening close contact with each other, and wearing a face mask to avoid the droplets from transmitting through the air.

COVID-19 is one of the deadliest pandemics the world has witnessed, taking around numerous lives till now across worldwide ,also in India. To limit its spread numerous countries have issued many safety measures. Though vaccines are available now, still face mask detection and maintain social distance are the key aspects to prevent from this pandemic. With more than 769,481 deaths being reported to date2 , this virus is said to cause a pandemic. The origin of this virus is most likely said to be from bats or snakes but there has been no intermediate host detected yet. The Chinese researchers and

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health authorities assume that the virus may have been originated and spread by an animal species that was infected and spread to humans via being trafficked illegally in the seafood market in Wuhan. Researchers are still trying to discover the origin of this virus. The coronavirus causes respiratory and gastrointestinal infections and can be categorized into four different types which are Deltacoronavirus, Gammacoronavirus, Alphacoronavirus and the Betacoronavirus. Birds are infected by the first two types whereas mammals are infected by the latter two (Fong, Dey and Chaki, 2020).

While medical researchers are primarily working and preparing to develop a vaccine or any type of drug to help in the prevention of this virus, there are other possible social ways that may help in limiting the rapid spread of the virus within individuals. According to the researchers, this virus can spread while coming in close contact with the person who is affected. Thus, it being alike all the other infectious respiratory diseases, researchers suggest close contact be withdrawn under any and all circumstances as the possibility of the virus transmitting through airborne ways and droplets is quite likely to occur.

PROPOSED SYSTEM

Many image processing techniques, mathematical formulae were proposed to compute a distance between two objects(persons) like Manhattan distance formula. Jong Bae proposed a medium to detect the distance of two persons applying smart phone based thermal rear camera that works in poor light environment. This method was as obtained 81% accuracy. In our proposed method uses a Euclidean Distance formulae for calculating distance between object here object means persons, this method was accuracy of 93%.

The main objective of our system is that will identify weather the person in frame is wearing the face mask and also maintaining distance between two people. The system provides two bounding boxes one for face and one person. If the person is wearing mask properly them our system will put the green bounding box across the face, else the bounding box will be in red colour. Similarly, the person in frame should maintain minimum of 6 feet distance then our system will put a green bounding box across the person else bounding box will be in red colour. Status is shown in the screen, containing number of people in frame and number of people who are not maintaining distance of 6 feet, not in face mask will be displayed in status bar that bottom of the screen. Our proposed model can be integrated with

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the camera (CCTV camera) also in the web camera to impede the COVID-19 transmission.

Advantages of Proposed System

This System uses YOLOv5 Algorithm to detect persons in frame and also the location of the person to detect the social distance (6 feet Safe distance).The main Advantage of the system is it gives a Gmail alert to the admin when violators are exceeded to the limit. Admin can set the limit to the COVID-19 precautions violators.

It gives voice alert to the crowd when they do not follow COVID precautions as per WHO guidelines.

LITERATURE SURVEY

Huynh, 2020. The author drew data from Google community and the cultural factors of 58 countries from Hofstede. Thus, the author came up with a conclusion that proposed effective measures to contain the virus by focusing on the role of uncertainties. On the other hand, a research paper had a different approach to test the significance of social distancing.

Aldila et al., 2020. By applying their model on the data that they had acquired, they found out that the individuals who had self-isolated or maintained social distancing reduced or delayed the time of an outbreak. Therefore, they concluded by stating that if a strict social distancing measure was carried out in all the countries, it would help in avoiding the outbreak of the virus. Some researchers in their study were determined to investigate whether the social distancing measures were effective and whether relaxing some measures was possible or not to avoid a second wave.

Wu et al., 2020,The research that they had conducted confirmed that social distancing measures that were carried out helped reduce the transmission of the virus and brought down the infection contact rate. In their study, they depicted that improving the case detection rate was necessary to reduce the reproduction of the virus and also there are many other protections measures available that should be carried out in order to improve the personal protection to recompense the strict social distancing measures.

RELATED WORK

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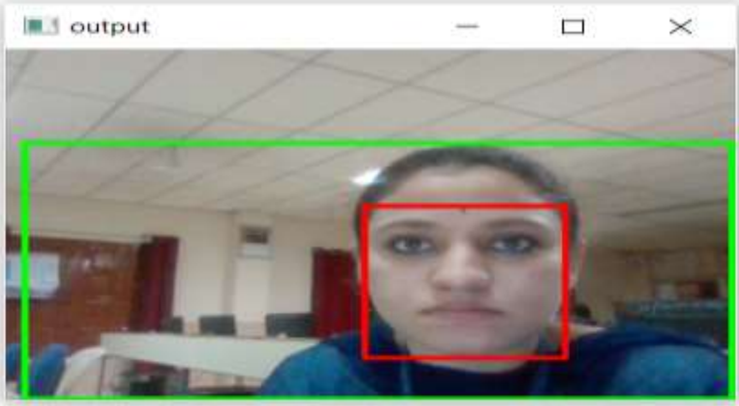

Fig: Person without face mask

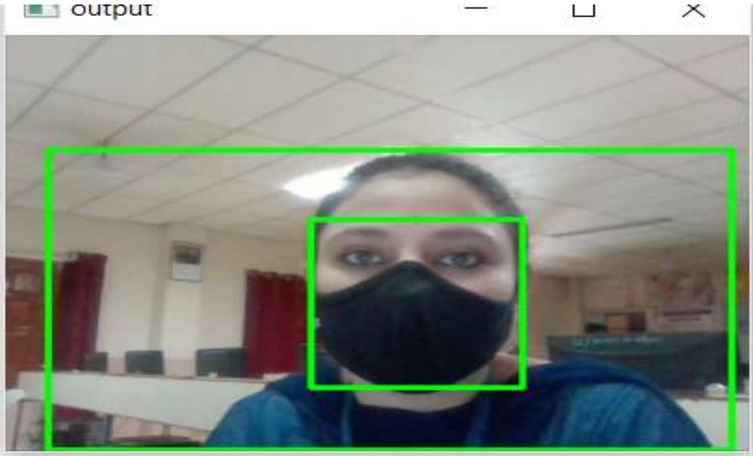

Fig: Person with face mask

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Fig: Person detection and labeling safe or Unsafe

CONCLUSION

In this paper, propose about the virus, this paper can conclude two things: social distancing can reduce the spread of the coronavirus; face coverings help prevent the infectious disease to transmit via the air. Therefore, to support this study, this research proposed an AI-based real-time approach towards the detection of social distancing and face mask. Crowd density was examined by gaining the ROI of the video frames and the count of people violating and non-violating the measures was also shown. The results obtained were accurate and real-time based. The pandemic is continuing to increase and is still going on while studying this research.

Future enhancement:

In this system, the people who have close relationships or who know each other and are walking together are detected as they are violating the social distancing measure. Some argue that they should practice social distancing in public areas while some argue that they need not. Hence, this is one of the limitations in this research and can be considered for future work. This research does not make use of the bird's eye view function and hence can be considered for future work as well. Some places where the virus transmission is high, people are required to wear double face masks, and thus to detect whether a person is wearing a double face mask can be achieved in the future. If in the future there is no need for social distancing, this project can be reutilized and repurposed for other applications. Museums have a 2-3 feet distance policy between the arte fact and the individual and thus it can be used to detect this distance

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Design and Analysis of Wind Power Plant Screen using SCADA

Ajay Kumar Moodadla*, Nitheesh Kumar M**‡,

*Department of Electrical & Electronics Engineering, Associate Professor, Andhra Loyola Institute of Engineering & Technology, Vijayawada-08, Andhra Pradesh, India.

**Department of Electrical and Electronics Engineering, Student, Andhra Loyola Institute of Engineering & Technology, Vijayawada-08, Andhra Pradesh, India.

(ajaykumar.nitw@gmail.com, luckynithesh1998@gmail.com.)

‡ Corresponding Author; Tel: +91 9491827298, ajaykumar@aliet.ac.in

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Abstract- The major challenge faced by a power generation and distribution company is to constantly monitor and record the various crucial parameters needed to run the system smoothly without any interruption. But the manual supervision of the power plant is a difficult task for power engineers. In this aspect, supervisory control and data acquisition (SCADA) system which utilize advanced tool for supervising and controlling the parameters inside the power plant. Graphical screens can be designed and developed which demonstrates the real time data of various parameters like digital and analog signals throughout the power plant. The operator can easily find out the errors/faults occurred in the system just by looking at the SCADA screen and hence fault response time will be drastically reduced. In this paper, wind power plant SCADA system screen has been developed by using “Wonderware Intouch” software and the test system has been simulated and verified for various perturbations. The simulation

results have been displayed on the screen instantaneously in order to monitor and control the overall power system effectively.

Keywords- SCADA; “WonderWare InTouch”; Wind Turbines; Screen Development; Fault Detection.

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1. Introduction

Nowadays, there is a rapid growth in the use of renewable energy especially, the wind energy takes major role in the electricity market. Wind is a steam of gases on large scale. Due to the differences in atmospheric pressure, air moves from high pressure area to low pressure area resulting of wind with various speeds. The process of wind turbine is to generate the electricity from wind which rotate the aerodynamic force from rotor blades. The translation of aerodynamic force to rotation of a generator creates electricity. Wind farms are also said to be wind power plant when a group of turbines connected with the propellers around the rotor which is connected to the main shaft to generate electricity. Wind power is a renewable energy source which plays a critical role in the performance of SCADA systems for the large wind farms in terms of operating services [1]. SCADA systems are the combination of software and hardware components which allows to monitor, control and process the real time data in various industries such as water and waste control, energy, oil and gas refining, transportation and telecommunications. SCADA systems ensure the transfer of data between a central host computer and a number of remote terminal units (RTU’s) and/or Programmable Logic Controllers (PLC’s), and the central host and the operator terminals. It is the process of collecting the information, transfer it back to a master terminal unit (MTU), then alerts the plant that a fault has occurred, carrying out the required analysis and control, store the information and displaying the reports..

Haolin Yin et.al [2] used the matrix calculations in SCADA for wind turbine condition monitoring which requires more calculations and due to higher sampling frequency for the real time SCADA data is insufficient and to be improved and real time data has been considered to calculate the wind power.

There are many softwares in SCADA. The “MiddleWare InTouch” which was used in early days for controlling and monitoring the power plant has less reliability compare to “WonderWare InTouch” developed by SCHNEIDER which is used in this paper [3]. In “WonderWare InTouch” the program has to be done in the Window Maker and the working script also written in the window script of the Window Maker. This Window Maker called as “screen” and the simulation was observed in the run time screen. By using manual control it is difficult to achieve perfect or required supervision needed for power plant. In this concern, SCADA will give better solution to monitor and also rectify the faults in wind farms where the human supervision is not sufficient.

The present manuscript comprises of six sections. In the remaining paper, section 2 deals with methodology followed for this research work. Section 3 explains complete turbine blade design with necessary equations. In section 4, calculation of wind power has been discussed clearly. Section 5 depicts the complete screen development using “WonderWare InTouch” software and also discussion on result analysis. Finally, entire research work has been concluded in section 6.

2. Methodology

In this section, the complete methodology of “WonderWare InTouch” software [4] which is used in the present paper in order to develop the screen for wind power plant.

In “WonderWare InTouch” the program has to be done in the Window Maker and the working script also written in the windows script of the Window Maker. This Window Maker is called as screen development and the simulation can be observed in the “runtime” screen. This software has different applications as discussed below.

2.1. Stand-alone Applications

This application consists of Application Manager, Window Maker and Window Viewer. In the application manager, the Window Maker is used to show the Window Viewer.

2.2. Managed Applications

Here, the user will have a choice to create their own “InTouch” applications whether it is stand-alone or Modern “InTouch” application and it can be developed with the help of Window Maker.

2.3 Working of wizard

In this software, most of the components have their own functions such as meters, switch, and graph, etc. But here are some special animations such as the wind turbine as shown in further images which have special functions using their respective tab such as direction, orientation and other miscellaneous operations.

Step-by-step procedure:

(i) Initially, create a managed “InTouch” application in the WIZARD by deriving a template from the “InTouch View App” base template.

(ii) Create a managed application on one node of the Galaxy with Window Maker.

(iii) Then, extend it to one or more target nodes running Window Viewer and once again, *OPEN* the managed application in Window Maker.

(iv) Now, develop the above “InTouch” application in Window Maker and *SAVE* the changes to the “InTouch” application.

(v) Finally, *RUN* the application in Window Viewer on target nodes.

2.4 *Steps to be followed to create a Modern application*

(i) Click “*InTouch*” icon to start the Application Manager.

(ii) Then, Select the “*NEW*” icon from the menu bar and give the tag *name* to the folder, then click “*OK*”.

(iii)Then, give the folder *name* which is appeared on the screen.

(iv) To create “InTouch” tags, click “*Tagname*” Dictionary on the Special menu.

(v) Click *New* and Type Tank_Level in the “Tagname” field.

(vi) Then, Click *Type* to show the various types of “InTouch” tags.

(vii) Select *memory real* for analog and *memory discrete* for discrete variable is used as the tag type.

(viii)Then, on the top of the “Tagname” Dictionary, click *Alarms* to expand the dialog box to show fields to set alarm conditions.

2.5 *Steps to be followed to create a window script*

The following are the steps to be followed for window script:

(i) First, right-click on a blank area to get the shortcut menu then, select *window scripts*.

(ii) Now, *copy* the window script into the scripts dialog box.

(iii) Then, give the run time value between 500-700 milliseconds so that window script will run periodically.

(iv) Finally, click v*alidate* and correct if any script errors, and then click *OK* to run the script file.

3. Turbine Blade Design

In this simulation, only the most important parameters have been calculated as the objective of the paper is to only show the screen development of the wind parks.

The Tip Speed Ratio (TSR) is a very important parameter in the design of a wind turbine blade [5]. It is expressed as:

$$\text{TSR} = \text{Tip Speed of Blade/Wind Speed} \tag{1}$$

The generalized formula for electrical power output is given by:

$$\text{Power (W)} = 0.6(C_p)(N)(A)(V^3) \tag{2}$$

$$\text{Revolutions(RPM)} = \frac{(V)(TSR)(60)}{(6.28)(R)} \tag{3}$$

where, C_p = Rotor efficiency, can go as high as 0.48.

N = Efficiency of driven machinery,

A = Swept rotor area (m^2),

V = Wind speed (m/s)

TSR = Tip Speed Ratio , and

R = Radius of rotor.

4. Calculation of Wind Power

The calculation of wind power includes the calculation of parameters of wind turbine and types of blades used in wind generation [6]-[10].

$$\text{Kinetic Energy} = \frac{1}{2} M V^2 \tag{4}$$

where, Mass(M) is measured in kg,

Velocity(V) in m/s and Energy is given in Joules.

$$\text{Mass/sec(kg/s)} = V \times A \times D \tag{5}$$

$$\text{Density} = 1.23 \text{kg/m}^3$$

$$\text{Power} = \frac{1}{2} \text{(Swept Area)(Air Density)}(V^3) \tag{6}$$

$$\text{Wind Power } P = \frac{1}{2} \rho A C_P V^3 N_G \tag{7}$$

Where ρ = Air density in kg/m^3

A = Rotor swept area (m^2)

C_p = Coefficient of Performance

V = Wind Velocity (m/s) and

N_G = Generator Efficiency.

Here, the test system parameters of wind turbine at different values are taken for considerations of speed and diameter of wind turbine, output of the turbine, efficiency of the turbine and its mechanical power input are given in Table 1.

Table 1: Parameters of Wind Turbines

Mechanical Power	7.8kW
Wind Speed	13m/s
Diameter	5m
Radius	2.5m
Output	5kW
Efficiency	50%

Also, different types of design can be used for developing the wind turbine by calculating the efficiency of the blade, torque of the blade, and electrical power etc. which are given in the Table 2.

Table 2: Calculated output of Wind Turbines

Parameter	**Types of blade (Design-1)**	**Types of blade (Design-2)**
TSR	9	12.5
Blade Efficiency	0.4	0.3
Mechanical Power	10,525W	7894W
RPM	420.9RPM	620.9RPM
Rotational Torque	224.91N-m	121.9N-m
Electrical Power	2000W	4000W-5200W

5. Screen Development

Screen development in SCADA includes two different sections. They are:

5.1 Park View and Control.

5.2 Turbine View and control.

5.1 *Park View and Control*

The park overview provides with overview of the wind park indicating the status of individual components. A 5MW wind park is considered in the present case. Figure.1 shows the complete SCADA screen designed by “WonderWare InTouch” for the wind power plant which transmits the power to the load centers through transmission lines. This screen also shows various power system components, monitors, meters and controllers.

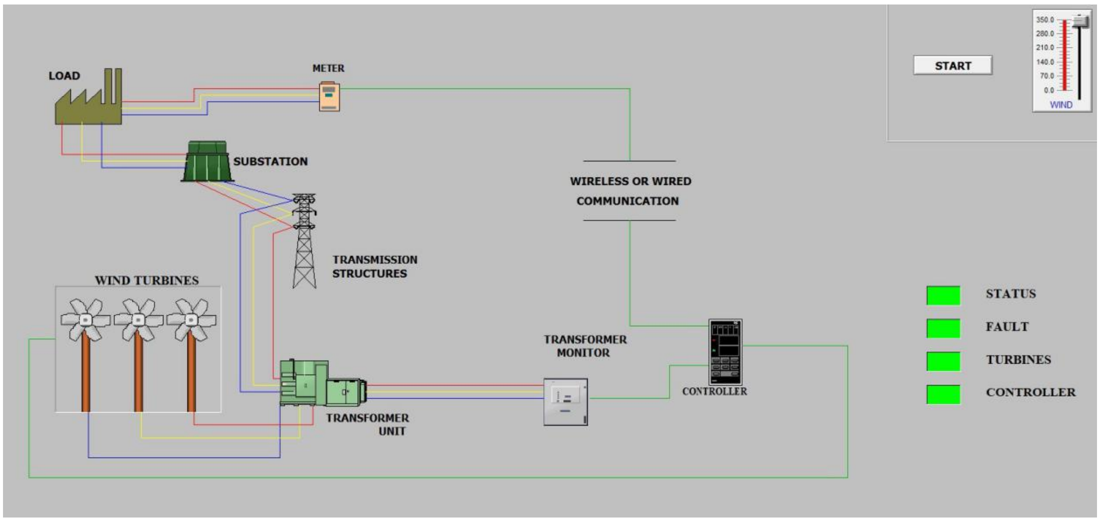

Figure 1. “WonderWare InTouch” SCADA Screen designed for Wind Power plant.

The screen of Figure.2 shows individual turbines and their respective transformers. The function of this screen is to monitor the wind turbines in the wind park and to control the output produced by the farm. Each of the turbine in the park is controllable as shown in the screen. If there is a fault or if the health of individual turbine needs to be monitored, then the turbine rotor is clicked on and it jumps to the turbine monitoring screen. As this is a simulation, the fault is created using a switch. If the fault switch is in ON position, the fault LED will glow red. This indicates that there is a fault in the turbine internal parameters.

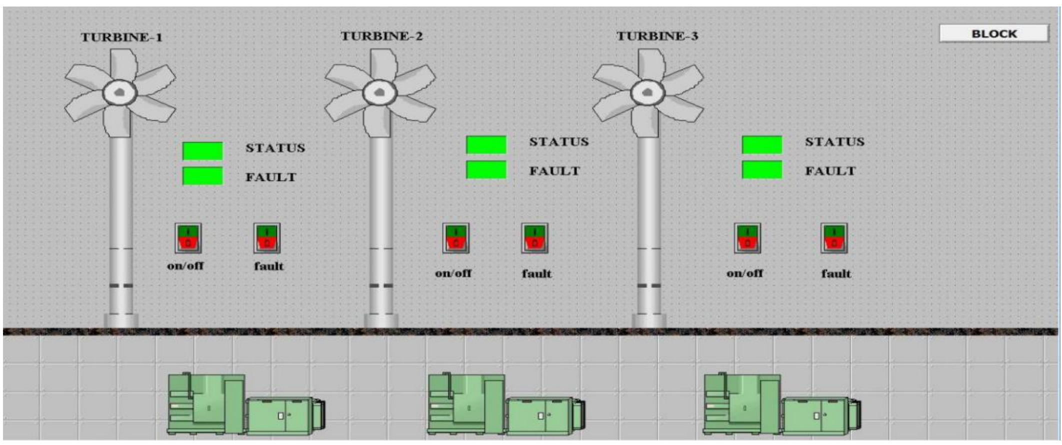

Figure.2. Wind Park View Screen developed using “WonderWare InTouch” Software

5.2 Turbine View and Control

The turbine view as shown in Figure.3 gives full overview of relevant parameters of wind turbine; for example, temperature, pitch angle, electrical parameters, rotor speed, and yaw system, etc. based on the turbine view, the parameters of the turbine can be controlled within the simulation.

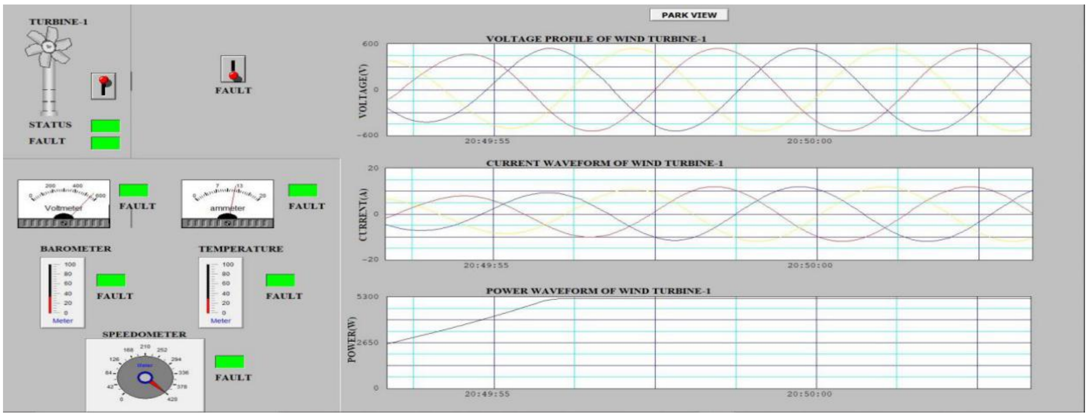

Figure.3. Turbine View and Control screen using “WonderWare Intouch” Software

Using this screen (Figure. 3), the electrical & atmospheric parameters of the wind power plant can be monitored. Faults occurring in individual turbines can be monitored and rectified using this screen. As it has been mentioned before, faults can be simulated with a “fault switch” as shown on the above screen. The type of faults that have been programmed in this screen are line-line-ground fault and three phase faults which are shown below.

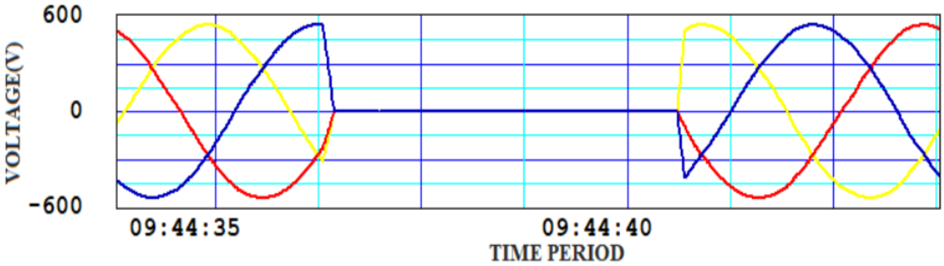

Figure.4: Voltage during Symmetrical Fault viewed in Turbine View

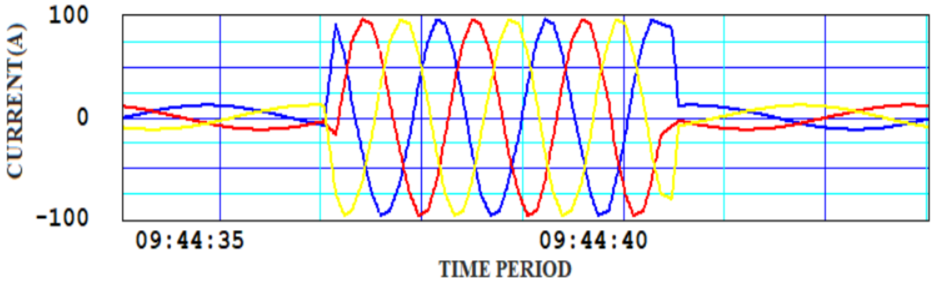

Figure. 5: Current during Symmetrical fault viewed at Turbine view

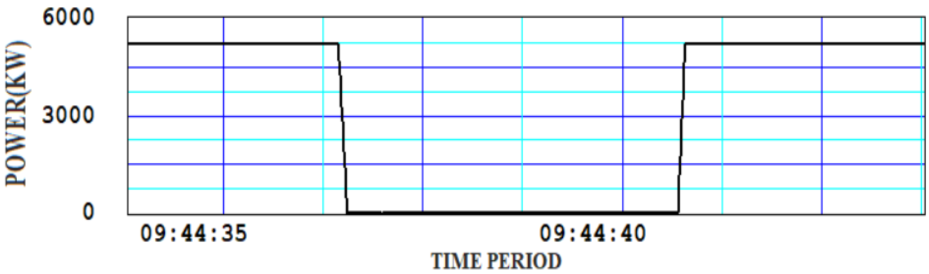

Figure 6: Power during Symmetrical fault viewed at Turbine view

A three phase symmetrical fault is applied at wind park side just for 5seconds duration and corresponding voltage, current and power wave forms are displayed on the screen as shown in Figure. 4,5 and 6. Since it is a balanced three phase short circuit fault, voltage across the three phases is zero during the fault period and short circuit current is very high compared to normal condition as shown on the screen and hence the power transferred becomes zero.

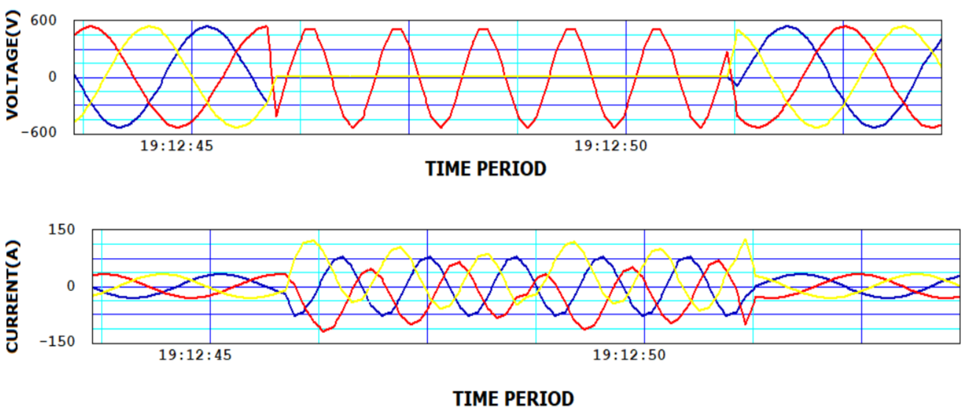

Figure 7:Voltage and Current waveform for L-L-G Fault at Wind Turbine

Similarly, an unsymmetrical line to line to ground fault is also verified at the wind farm side for 5 seconds duration and corresponding waveform is shown in the Fig.7. Since, it is a double line to ground fault, the voltage across the faulted phases is zero during the fault period and high short circuit currents can be observed from the above figure.

6. Conclusion

The paper has described the design and operation of the wind power plant and finally wind power plant screen has been developed using "WonderWare InTouch" SCADA software. By observing the simulation of the system, it is clear that three-phase fault represents the worst condition, among the other type of faults, as far as the stability of a wind farm is concerned. The faults produced from the three-phase symmetrical and unsymmetrical faults in the wind turbines and their losses can be controlled by designing the controllers. If fault occurs then the alarm monitor used in the screen will generate the log viewer screen which shows the values at which the fault occurred which in turn reduce the human intervention in controlling the plant. Hence, it can be concluded that, the SCADA software used in the paper to design the screen for wind power plant is user friendly and with minimum efforts it is possible to implement for wind turbines practically.

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