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EFFECT OF COVID-19 ON MOODLE BASED E-LEARNING

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Abstract:

In the early 2020, Covid19 pandemic hit Indian education system forcing to change from chalk and board to online learning. The authors created Moodle based online learning course in Mathematical discipline. This paper summarises the study outcome learn from student's experience collected through ATTLS - Attitudes to Thinking and Learning Survey executed using the learning management system (LMS) - Moodle. The objective of this research was to understand impact of current situation on students learning and to improve the overall learning experience as well as quality of learning.

Keywords: E-learning, Moodle, ATTLS, Attitudes to Thinking and Learning Survey, online education, learning style, connected learning, separate learning

Introduction:

Under the continues quality improvement program the researchers seeks improvement initiatives for the betterments in education field. The research analysis presented here is also the part of the ongoing development process taken place.

The global pandemic of Covid-19 hit Indian continent with early 2020. The existing educational system from offline lectures has been forced to shut down and many education institutes moved to the alterative platforms. The most widely used available platforms were google classroom and Moodle. In this critical situation to understand the need of the hour a new avenue was explored and alternative to traditional education system were created.

The major research question that come to surface were:

- 1. What are technological alternative solutions available?
- 2. What will be the effect of these alternatives on the learners?
- 3. What will be the learner's attitudes to thinking and learning in the current situations?

To address the above questions and to improve the education mechanism the completely new e-learning Moodle platform was implement. On this learning management system, a new course in the discipline of mathematics was creating and the research was conducted on the students of post-graduation level. [1][2][3]

Background:

The subjects in the mathematical discipline requires learners to reason with questions. The learner with these skill sets are good at problem solving mechanism as well as show intuitiveness. The impact of new technologies teaching and learning from problem solving scenarios requires large involvement from learners. But in the scenarios of online or distance education it requires to create a suitable learning environment during learning process.

Objective of the Research:

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To investigate the attitude of the post graduate student towards learning through Moodle

Significance of the Research:

The significance of the research is to

- 1. Investigate the attitude of the post graduate students towards learning environment using Moodle
- 2. To encourage course creators to utilize Moodle resources
- 3. To understand connected and disconnected learning styles of the class and individual

Theoretical Background:

The standardized scaled used for this research is Attitudes towards Thinking and Learning survey. The objective of ATTLS is to identify connectivity and disconnectivity within the course. used to measure the quality of discourse within the course. This is used to identify connectivity of the learning towards the course. The objective is finding the students who are enjoying the learning experience in the course and to encourage there engagement as well. It also helps to identify separate learners who are more critical and argumentative about the course. The shorten ATTLS self-responsive questionnaire of Initially the ATTLS consisted of 2 questions each for separate and connected knowing and question each is used for this research. [1][2]

Methodology

This research methodology is created based on the action research foundation principle. The stages of research methodology are as follows:

- 1. Experimental Design: In the experimental design, the overall course structure was finalized and the necessities for research are list.
- 2. Course Creation: Based on the required resources are updated on the learning management systems and post graduate students are enrolled into the course.
- 3. Survey and Data Collection: The Moodle preconfigured ATTLS Attitudes to Thinking and Learning Survey was used to collect the data. Learners are requested to fill the necessary information and data was collected online. [3][4]
- 4. Result analysis and interpretation: The individual responses are validated and analyse one by one. The summaries graphical representation is presented below in the paper.

In our experimental study, we have used ATTLS 20 question short version questionnaire and responses are collected through the learning management system Moodle. A specific mathematical discipline course is selected for the research and students are enrolled on to the course. To understand current situation and its effect on learners we have asked all to complete ATTLS survey. This was on the volunteer basis only. [5]

Approach: To understand the learning approach of the learners in online learning environment learning management system Moodle was used

Population: The population involved all the existing learners of the mathematical discipline course.

Sample: For the collection of primary data, researcher tried to conduct survey from all the population on volunteer base model. Out of total 109 learners maximum of 102 valid responses are received

Results:

The summary results are shown in the figure 1. Out of 109 responders, 102 have volunteered to answer the questionnaire. They have answered all 20 questions of ATTLS. Based on the standard scaling following results are reported.



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The above figure 1 showed the summary result of ATTLS scores overall results. The most of the score display connectivity in learning between the students is higher compared to distinctive learning in this environment. The parameter wise details about connected learning and separate learning is as follows:



Figure 2 Connected Learning

The figure 2 explain the ATTLS 10 questions responses overall summary. Each learner is asked question on the based on the behaviour. Learners responded very high for interact with variety and enjoy hearing opinions. This result is promising in the current scenario of Covid-19. All the other parameters are on the level of some what agree making it as acceptability of the current situation.

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Figure 3 Separate Learning

The effect of current situation impacted students learning in the way of challenging every scenario. In the response to separate learning questions, learners are trying to remain objective and trying to maintain the focus of the quality. For the course of mathematical discipline, the response of logic most has promising results in the cultivation of thinking and right attitude development. Strengthen by argue display learner's improvement in the point of stability and health learning environment.

Conclusion

In the conclusion, the research conducted for the understanding of effect of Covid-19 in online learning through Moodle. Based on the preliminary survey conducted with ATTLS conducted there is positive attitude towards new learning environment by the learning. There is scope to extend this research to conduct more survey for better understanding. The course creators can also be motivated to create holistic approach for new way of teaching. Most importantly individual identification of learner from connectivity identified will be helpful in the future to work on those learners individually.

Future work

Future of the research can be conducted by conducting constructivist surveys on the same learner. **References**:

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JOURNAL OF EDUCATION: RABINDRABHARATI UNIVERSITY ISSN : 0972-7175 **"CRITICAL ANALYSIS OF POLICY GAPS IN THE INDIAN HEALTHCARE DELIVERY"**

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Abstract:

India's healthcare system is facing lot of challenges and need to be addressed by having implementation of good and radical reforms to deal with new challenges. Since the world is facing pandemic situation such as Covid-19, the issue of healthcare infrastructure again taking front stage for everyone's discussion. At one side in India the role of private players is rising in healthcare sector, but parallelly the cost of healthcare facilities sees the increasing trend and it is obviously out of reach for the large pool of population in India. The government hospitals are facing a crunch of insufficient resources and infrastructure such as shortages of beds, rooms and also medicines. In this research paper the authors have made emphasis on the current scenario of healthcare facilities and resources required for it. In the other side, government is failed to identify the areas of improvement in the healthcare sector and they are also paying attention towards allocation of funds in various policy measures.

The government must require to take a cohesive and all-inclusive approach which should consider the demography of this country and mitigate the regional differences with the help of people who are the residents of that locality. They should also need to focus on decentralization of economies and geographies to tackle a large demographic difference. It would be always better to involve your local level institutions such as Panchayats, to resolve the issues of particular localities. The authors observed that many people lost their lives due to epidemics and pandemics, and local governments failing to come up with good strategic planning which can be efficiently manage the spread of these diseases and can provide emergency measures. Therefore, the authors mentioned some comprehensive policy measures to tackle with epidemics and healthcare facilities.

Keywords: Analysis, Healthcare, Infrastructure, Pandemics, Policies.

Introduction:

Health infrastructure is an important feature to facilitate the growth and well-being of the citizens of any country. India's population has been 8.6 per cent in 2010-11 and increasing at an extraordinary rate of 9 percent and the forecasted data shows it will surpass China by 2030. To cater the need of such a huge population India's health infrastructure is inadequate. The outburst of many diseases such as Chikungunya, SARS, and Covid-19 in various nations have exposed the poor infrastructural facilities that is insufficient to serve the people.

The healthcare facilities are the indicator of how the local government pays an attention to their people. Infrastructural arrangements and investment priorities signifies the planning and policy measures from the end of government. India is a diversified country where one can observe demographic changes, geographic changes and even climatic changes, so that the huge population load and poverty leads to vulnerable diseases.

To cater the needs of such diversified country, every government need to make such policy measures which can be able to provide better healthcare infrastructure facilities at every corner of the nation.

Literature review:

Private sector players promoted to facilitate the health care services as public sector providers failed to deliver the desired services to people. Due to this, it leads to inequality and improper distribution of healthcare facilities across the country. It happened as private players are focussed towards profitability models and not on services.

Public sector hospitals are not having that capacity to provide services efficiently, they are just having the workforce of 15-20%. (Gupta, Kumra and Maitra, 2005). Public hospitals and clinics have been found to be understaffed by 15-20 %, on average, this problem is more rampant in rural areas. Shailendra Kumar (2016). Public sector healthcare services show uneven distribution of infrastructural

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facilities across various districts in the nation. (S. K. Hooda, 2017). Infrastructural facilities have been proclaimed as the foundation to deliver the public healthcare services. (Novick, Morrow, Mays (2008). Having a long-term strategic planning which explains the healthcare infrastructure facilities in terms of

statistical data my means of qualitative and quantitative analysis in India, which facilitates the policies mainly focussing on resources and competency, information and organizational capability. Kumar and Gupta, 2012).

Health care services in India is a blend of public and private entities and they are shortages of resources to serve this large population. Most of the population belongs to the rural areas and to provide better services to them, India needs to ensure the better preventive measures. Better living conditions and hygienic habits would be required to maintain which has a great impact in healthcare services. Proper medications and treatments would improve health quality and also effective to minimize the cost of health facilities. (I. J. Kumar, 2015)

India is having the potential to deliver better services if it ensures the basic health service infrastructure and human resources in this field. As private sector entered in the healthcare service, which effectively increased the availability of doctors and other associated resources but also responsible to regional variations. (Choudhury, P. K. 2018)

Objectives of the Study

1. To find out the current scenario of health care infrastructure of India.

2. To find the challenges in the current health care infrastructure of India.

3. To provide some recommendations to improve these misallocation health care facilities in India.

Research Methodology

This study is based on secondary data. It uses analytical and descriptive technique to find challenges in health care infrastructural facilities in India through different research papers, articles, different health reports published by Indian government and world agencies as WHO, OECD etc.

Data analysis and Interpretation:

India is having the requirement of better healthcare facilities in rural areas. As, it is not having enough primary healthcare units and dedicated government hospitals and even most of them are not having the capacity to provide proper most medical facilities. Besides this, most of the populations lives in rural areas and they are not aware about many diseases, since they are unable to get the medical education, these people do not follow the hygiene practices and preventive measures.

Due to the lack of information about any particular disease and other preventive measures, people in rural areas even some parts of urban areas not being able to follow the desired actions to tackle with epidemics and pandemics. Even they are not having the knowledge about various government initiatives and schemes.

Inadequacies pf Healthcare Infrastructure in India:

Insufficiency of Hospital Beds:

The recent pandemic Covid-19, exposed the gaps in health infrastructure system in India, as most of the hospitals were running out of beds, that leads to higher mortality rates. Average Population served per Government Hospital is 90,972 and average population served per government hospital bed is 2,012.



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Less Number of Healthcare Centres

India is lagging behind with many countries in the world in terms of availability of health centres.

National Commission on Macroeconomics and Health, recommended a Sub Centre for every 5,000 population, a Primary Health Centre for every 30,000 population and a Community Health Centre for every 1,00,000 population. Government temporarily increased the healthcare facilities to tackle with pandemic to provide better facilities. According to rural Health Statistics in March 2018 only 8% subcentres, 12% PHCs and 13% CHCs met Indian Public Health Standards (Alexender, 2018).

Shortage of Staff and Equipment's:

Though the Central government of India and its states are preparing themselves to upgrade their health care infrastructure but they are failing to avail these services to their people with better cost. The government Rural Health Survey indicates that nearly about 56 % of central healthcare services are having working X-ray machines and very few medical resources such as physicians and others are in place.

Health care infrastructure are heavily concentrated in urban areas

The Allopathic doctor-population ratio is 1:1,404 in India, per the current population estimate of 135 crores. This is well below the WHO norm of 1:1,000. Interestingly 52 per cent of these doctors are practising in just five States — Maharashtra, Tamil Nadu, Karnataka, Andhra Pradesh and Uttar Pradesh.

Allopathic doctor population is concentrated in a few select States. 15 per cent are working in Maharashtra, followed by Tamil Nadu (12 per cent), Karnataka (10 per cent), Andhra Pradesh (8 per cent) and Uttar Pradesh (7 per cent). Delhi, Assam and Odisha have 2 per cent of the total Allopathic doctors while Haryana, Chhattisgarh, Uttarakhand, Telangana and Jharkhand have 1 per cent.

Require more Medical Institutions

India requires more investment in terms of medial institutions who are dedicated to deliver quality education. To empower the people basic investments needed at the foundation level, therefore MBBS, BDS, BAMS and homeopathic, Ayurveda are the leading programs in India. As India's public hospitals are understaffed nearly about 15-18%, it is always better to have quality institutions for healthcare facilities. Most of the states are having the scarcity of teachers, no fund to manage the colleges as well as per MoHFFW, 2005, 61.25 of nursing & schools were not suitable for teaching.

Needed a good and effective Vaccination program:

As people across the world are facing the difficulty to get the vaccine in this Covid-19 pandemic, it is essential to have the strategic plan from the end of government. As India is not having sufficient workforce and inadequate production and manufacturing equipment, it is impossible to serve the needs of huge population. India's 17 places are having testing facilities only.

Role of Government and need of sustainable approach:

Many States and Union Territories are struggling to maintain and provide better health care facilities, as they are depending upon Central government for financial and other assistances to implement all kinds of policies. Most of the states are having own policies and do not follow the guidelines of states as per their demographic needs and requirements. Central government need to provide all inclusive policy measures for all the people, but their states need to take care of their own demography so they design their policies and also implement it solely. Therefore, is creates a gap between central and state level activities, and many times duplication of work and policies happens.

Prior to the implementation of any policy measure, it should be discussed and thoroughly understood between central and state governments to address the needs of all the people and deliver quality health care services and facilities. These programs should focus on achieving policy objectives and address

Suggestions for Better Health Infrastructure

Need to Support Rural Healthcare Infrastructure in India

The rural healthcare infrastructure in India is in very bad situation. Since the government initiated many policy measures such as National Rural Health Mission Programme (NRHM) which is dedicated to the

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quality health services and basically oriented towards rural health infrastructure in India. The major objective to provide basic healthcare facilities in rural areas of this country.

India's total healthcare expenditure:

India's total healthcare expenditure is at 3.6% of GDP, as per OECD, is far lower than the other countries. The average for OECD countries in 2018 was 8.8% of GDP. With public healthcare infrastructure stretched, out-of-pocket expenditure in urban centres is high in India.



• Some of the Recommendations to uplift the Healthcare Infrastructure

Governance:

India needs to focus on its basic governance which should facilitate the responsibility, resiliency, and sustainability. Government should allocate the responsibilities in such a way where managers to build an effective system to cater the needs of all the people. Such system should ensure that all the government systems, schemes and policies should percolate to its all the areas right from rural to urban areas, and must have long term vision to develop better and effective development model which sustains for many years.

Management of Information system:

Information Management Systems are not having the proper database management so that hospitals not able to maintain patient's records. Therefore, hospitals are not in that position to know that how many people in particular locality requires medical treatment and healthcare facilities.

Government Vaccination programme:

The central and state governments must provide better vaccination facilities for all and should be able to deliver the proper healthcare facilities in rural and urban areas. India is able to provide these facilities in very effective manner as they already eradicated many diseases such as Polio, Cholera, Jaundice, etc. Now, they need long term vision to tackle epidemics and provide good infrastructure at their place. This requires quality equipment and manufacturing facility.

Need investment in Medical Research Centres to Upgrade Health Infrastructure in India

India's government should establish the medical research centres and basic hospital infrastructure which are specialized in the matters of epidemics. They need to prioritize their domain areas in terms of investment options, should allocate the funds to uplift their rural areas as this area is unserved in many states. There must be a coordination between central and state government before making any strategic decisions.

The Need for a Comprehensive Emergency Epidemic Response Plan

India requires a long-term strategic plan which have a good vision to provide all inclusive actions to respond quickly towards any emergency medical requirements. The plan should include all the guidelines and standard operating procedures which can be followed and implemented across all the states and union territories effective, even in case rural areas or urban areas. A proper risk analysis should be done every year to understand the implementation and execution of government schemes and policy measures. Risk analysis enables the risk management team and dedicated task force team to handle any uncertainty of medical needs.

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Conclusion:

As India is preparing its healthcare facilities to face uncertainties and unknown events they require to organize and priorities their investments, expenditures to provide better facilities. They also need to recognize challenges and plan their solutions to fight against all harmful things.

Inadequate and insufficient government healthcare infrastructure in India takes higher costs than other peer countries. New private entrants also providing better facilities but they are looking higher profitability model. India needs to increase the share of healthcare expenditure from existing only 1% to at least 3 to 5% of the GDP. To provide justified and equal access to all the people in diversified geography, it should raise the standards of healthcare services and implement long term policy measures and schemes for the benefit of society.

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JOURNAL OF EDUCATION: RABINDRABHARATI UNIVERSITY ISSN : 0972-7175 IMPACT OF PANDEMIC COVID 19 ON SHARE MARKET WITH RESPECT TO BEFORE & AFTER PANDEMIC LOCKDOWNS IN INDIA 2020

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Abstract:

The manuscript was focused on the impact of the Pandemic situation on the performance of the stock markets in India. The objective of the study was to understand the correlation of the stock market with the economic situation of the country. Primarily it has been seen that the market responding negatively to the economic situation after the pandemic happened. To evaluate the exact performance of the stock markets pre and post-pandemic, a period of 6 months before and 6 months after the exact lockdown forced in India in March 2020 was considered. The data of the major stock exchanges for India such as NSE & BSE was collected to analyze the volatility of the market during the selected period of the study. The data were analyzed using various tools such as moving average, relative strength index, moving average convergence divergence or MACD, Fibonacci retracement and candlestick price chart, VWAP, RSI, etc. The study shows that there was a strong significance of the selected variables on the performance of Share markets of INDIA.

Keywords: Share Market, NSE, BSE, SENSEX, NEFTY, VWAP, RSI, MACD, Fibonacci indicator, Stochastic Indicator.

Introduction:

The share market of any country is the most volatile as the performance is relay on the economic situation of the respective country and the world also. This manuscript focuses on the performance of the stock market during the pandemic situation in India during 2020. The performance of the stock market is expressed by the Indexes of the respective stock markets of India such as BSE and NSE which are the most important indexes which represent the Indian stock market.

The study's objective was to find out the relevance of the performance of the stock market and the economic condition during COVID 19 Pandemic period. During the COVID 19 in early 2020 most of the country imposed a lockdown for the period of at least 3 to 4 months, within this period of lockdown most of the operations of the industries, companies from various sectors such as Banking, Manufacturing, FMCG, Service industry, Automobile, IT, etc. were stuck up. This study was considered only the major stock exchanges irrespective of the companies to analyze and evaluate the research problem.

The various companies which are listed on the stock markets in India are divided into various subsections based on market capitalization such as Large Cap, Mid Cap, Small Cap. During the COVID19 Pandemic situation, the mid-cap companies and the small companies were hampered the most as these are the companies that rely on the economic position of the country most irrespective of the world economy.

Literature Review:

Most recently, Zhang et al. (2020) measured the general pattern of country-specific risk and systematic risk across world financial markets in the presence of COVID-19 outbreak fear. They documented that global markets have become highly volatile and financial market risk has increased in response to the uncertainty of market conditions. In the case of the USA, they suggested that non-conventional policy interventions (quantitative easing) could increase more problems for the economy. Regarding the impact of the deadly virus on financial volatility, Liu et al. (2020) investigated the impact of the COVID-19 outbreak on the most affected countries' stock markets

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using the event study method. They documented that the stock markets responded negatively to the COVID-19 outbreak, which had weakened their performance. Albulescu (2020) documented that new confirmed cases of COVID-19 and death reported positively influence the market volatility index (VIX) both within and outside of China. Additionally, he proposed that the higher the spread of the deadly virus in the country, the higher would be the financial volatility in the stock market. In the context of Spanish capital markets, Ahmar and Val (2020) predicted a short-term effect of COVID-19 on the IBEX index using the ARIMA and SutteARIMA methodology. Based on the results, they suggested that SutteARIMA is better for predicting the impact of the coronavirus on the stock market than ARIMA.

Objective of the Study:

- 01. To understand the correlation between the Economic Condition and the performance of stock market.
- 02. To understand how the Indian stock market is run, particularly as it pertains to the indexes of pre and post COVID-19 of selected stock exchanges.

03. To analyse the impact of COVID 19 pandemic on stock market of India.

Hypothesis:

H0: There is significant impact of COVID 19 Pandemic on the performance of Stock Market of India.

H1: There is no significant impact of COVID 19 Pandemic on the performance of Stock Market of India.

Research Methodology:

The secondary data for the study was collected from the various financial websites, journals, Financial magazines, and NSE & BSE authorized web pages of stock exchanges. To make a justifiable study of the impact of the pandemic situation on the stock market, the period of 6 months pre and post of COVID 19 lockdown was selected.

To analyse the data various methods such as VWAP, RSI, MACD, Fibonacci, tools were used on the variable selected for the study. The market capitalization of the different industries which are listed on the stock market was also analysed to get the exact picture of the impact of the economic situation. Correlations tools were also used to correlate the performance of the stock market of pre and post-period COVID 19 Lockdown.

- **1. VWAP** = $\sum Price * Volume$) / \sum Volume
- 2. Relative Strength Index:

The relative strength index (RSI) is computed with a two-part calculation that starts with the following formula,

RSI (step one) = 100 - [100/1 + (Average gain/Average loss)]

RSI (step two) = 100 - [100/ 1 + (Previous Average gain * 13) + Current Gain) / - (Previous Average Loss *13) + Current Loss)]

3. MACD:

Calculated by subtracting the long-term EMA (26 periods) from the short-term EMA (12 periods)

 $MACD = EMA_{(12 \text{ periods})} - EMA_{(26 \text{ periods})}$

4. Fibonacci Retracement:

In technical analysis, a **Fibonacci retracement** was created by taking two extreme points on a stock chart and dividing the vertical distance by the key Fibonacci ratios of 23.6%, 38.2%, 50%, 61.8%, and 100%.

5. Stochastic Indicator:

%K=[(C-L14)/(H14-L14)]*100

Whereas,

C = The most recent closing price

L14 = The lowest price traded of the 14 previous trading sessions

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H14 = The highest price traded during the same 14-day period

%K = The current value of the stochastic indicator

Data Analysis & Interpretation:

Collected data were evaluated under five different levels for the selected period of analysis.

Level 1: VWAP

Level 2: RSI

Level 3: MACD

Level 4: Stochastic Oscillator

Level 5: Fibonacci Retracement

The data collected for the period of six month pre and post COVID-19 lockdown in India. The lockdown was imposed in India in month of April 2020. So for the study data ware considered from Oct 2019 to March 2020 for pre COVID-19 situation and from April 2020 to Oct 2020 for post lockdown.

Month	Open	Low	High	Close	
October 2019	38813.48	40392.22	37415.83	40129.05	
November 2019	40196.07	41163.79	40014.23	40793.81	
December 2019	41072.94	41809.96	40135.37	41253.74	
January 2020	41349.36	42273.87	40476.55	40723.49	
February 2020	40753.18	41709.3	38219.97	38297.29	
March 2020	38910.95	39083.17	25638.9	29468.49	
Table No. 01: VWAP for NSE Before Lockdown in India					
Month	Open	Low	High	Close	
October 2019	29505.33	33887.25	27500.79	33717.62	
November 2019	32748.14	32845.48	29968.45	32424.1	
December 2019	32906.05	35706.55	32348.1	34915.8	
January 2020	35009.59	38617.03	34927.2	37606.89	
February 2020	37595.73	40010.17	36911.23	38628.29	
March 2020	38754	39359.51	36495.98	38067.93	
Table No. 02: VW	AP for BSE	Before Loc	ckdown in I	ndia	
Month	Open	Low	High	Close	
April 2020	11515.4	11945	11090.15	11877.45	
May 2020	11886.6	12158.8	11802.65	12056.05	
June 2020	12137.05	12293.9	11832.3	12168.45	
July 2020	12202.15	12430.5	11929.6	11962.1	
August 2020	11939	12246.7	11175.05	11201.75	
September 20	11387.35	11433	7511.1	8597.75	
Table No. 03: VW	AP for NSI	E After Loc	kdown in In	dia	
Month	Open	Low	High	Close	
April 2020	8584.1	9889.05	8055.8	9859.9	
May 2020	9533.5	9598.85	8806.75	9580.3	
June 2020	9726.85	10553.15	9544.35	10302.1	
July 2020	10323.8	11341.4	10299.6	11073.45	
August 2020	11057.55	11794.25	10882.25	11387.5	
September 2020	11464.3	11618.1	10790.2	11247.55	

Table No. 04: VWAP for BSE After Lockdown in India

Level 1 VWAP:

VWAP is the Volume Weighted Average Price. It is the trading indicator that makes an average of closing prices during the given period. VWAP uses the previous data and hence it is also called a lagging indicator.

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Interpretation: VWAP analysis was not possible to execute as the volume of the selected market is not available currently. We can analyze the individual companies using VWAP in the further scope of studies.

Level 2: Relative Strength Index

The Relative strength index is the momentum indicator which is used in the technical analysis that measures the magnitude of recent price changes to evaluate overbought or oversold conditions in the price of stocks.





Graph No. 1: RSI for NIFTY



Interpretation: The graphs of the relative strength index for nifty and Sensex shows that during the pre-covid-19 situation the market was in the trend of purchasing and going in the upward direction. As soon as the news of the pandemic came into the markets of India, the RSI analysis shows that the brokers or retail investors start selling the stocks at both the market. Due to that reason, the RSI shows a downward trend till April. But as the lockdown starts in INDIA from April 2020 the RSI index shows growth after May 2020. And till date, the market is rising.

Level 3: MACD

The Moving Average Convergence Divergence shows the trend which is follows momentum indicator which shows the relationship between the two moving averages of securities price.









Interpretation: The MACD indicator for the markets shows a downward trend during the pandemic lockdown. But in the latter half part of the study, it shows the upward trend in the market. The momentum of both the market was in an upward direction. The down word momentum is only for few months starts from the month of January 2020 to April 2020 after that momentum goes upward only.

Level 4 : Stochastic Indicator

A stochastic oscillator is a momentum indicator comparing a particular closing price of a security to a range of its prices over a certain period of time.

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Graph No. 5: Stochastic Indicator for Nifty SENSEX



Interpretation: In the market, the brokers and retail investors start selling their holdings from January 2020 to April 2020, but as soon as the market got momentum in an upward direction due to some governmental redefined policie the stochastic indicator also shows an upward trend in the market as more and more investors are coming into the market.

Level 5: Fibonacci Retracement





Graph No. 7: Fibonacci Retracement for Nifty SENSEX



Interpretation: The three potential resistance levels: 0.236, 0.382, and 0.618 gives that the market during the three months shows the downward trend and afterword it going in upward trend only. **Findings:**

The COVID-19 comes to India in the early month of Feb 2020. The cases of the pandemic were started increasing during March 2020, and the lockdown begins on 22nd March 2020. The markets were trending between NIFTY 11,500 points to 12,000 points & Sensex 35,000 points to 40,000 points.

From January 2020 the markets showed a downward trend as soon as the news of the COVID-19 comes. From January 2020- to April 2020 markets i.e NIFTY were crashed by 4000 points and SENSEX was crashed by 8000 points.

The lockdown was imposed in India from 22nd March 2020 and everything got shut down. No industry was working only the share market was working. Surprisingly the selected indicators show that the market starts recovering during the lockdown period. The best possible reason is a concern for further study but briefly, we can say that the retail investors start putting money in the market, the brokers, sub-brokers start pumping the money in the market by buying the shares of the Pharma industry, banking industry, FMCG industry.

The markets show tremendous growth after the lockdown currently the NIFTY trading on 15000 points i.e. 6500 points more than the crash points. The SENSEX is also trading on 50000 points i.e. more than 16000 points than the downward situation in January to April 2020.

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Conclusion:

The market showed a downward momentum for an average of 4 months. Afterward in the next 6 months the market reaching new sky levels, it showing tremendous growth in the market because of some governmental policies, investors' sentiments, and large entries of new investors.

The hypothesis which we had considered for the study stood significant. The market had an impact on COVID 19. For few months it gives a negative impact but now it is giving a positive impact, the reason is various new opportunities came to the market. The benefit of China's negative image is directly helping the Indian Economy as the MNC's are shifting their base from China to Indian territory and few other countries.

Scope of Further Study:

The further scope of the study is to study the impact of COVID 19 on the individual sectors, individual companies, Reasons to find out why the share markets are showing an upward trend as the demand for the products in the market is going down.

Limitation:

The VWAP analysis was not able to carry out as the total volume for NIFTY & SENSEX was not readily available in any of the stock markets.

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Paper Title- "IMPACT OF PANDEMIC COVID 19 ON SHARE MARKET WITH RESPECT TO BEFORE & AFTER PANDEMIC LOCKDOWNS IN INDIA 2020"

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"TO STUDY THE PREFERENTIAL CHANGES IN INDIVIDUALS FINANCIAL EXPENDITURE & INVESTMENT PATTERN DURING COVID 19 PANDEMIC"

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Abstract:

As per the Indian context, investing money for the future is the foremost goal of any individual. Due to the Pandemic in 2020-21, individual financial planning collapsed because of all of the sudden need for financial requirements and a rise in unemployment. The research paper was focused on the changes in the individual financial expenditure and investment behavior after the pandemic COVID 19 in 2020-21. The different ways of short-term and long-term investment and expenditure were considered to analyze the investment pattern and financial expenditure. The pattern was found out by collecting the primary data from the Individual & some secondary data was also used to analyze the overall change in investment pattern of individual of the country spending behavior. The individual now focusing on the expenditure related to the livelihood of their family. They are preferring to invest money for the long-term which gives benefits with high security.

Keywords: Investment Behaviour, Financial Instruments, Financial Expenditures, Investments, Household Income, Financial Risk, Return on Investment, long-term, short-term, financial instruments.

Received 01 July 2021, Accepted 17 July 2021, Published 30 July 2021 Correspondence Author: Dr. Girish Ashok Bodhankar

Introduction:

Investment is the purchase of goods, services, financial instruments for the future. The individual invests the money today for the betterment of the future. By considering today's investment, they decide the expenditure to be made today for livelihood. But the investment and expenditure are interrelated to each other and it has an impact on current economic conditions. The research paper is focused on the changes in the preference of the individual for investment & expenditure due to the sudden spread of the COVID 19 pandemic throughout the world.

In India, investment for the future is the foremost important thing for individuals. Every person in India is working towards the betterment of the future by investing today. But because of the spread of COVID 19, impacted both the investment power and expenditure power of the individual substantially. For the study, the data were collected from individuals ranging between ages 25 to 55 years. Various questions were asked regarding their income structure, investment patterns, and expenditure of livelihood. The research paper tried to find out the change in perception of the individual regarding money during and after the COVID 19 attack, as it attacked financially on the individuals.

The investment in terms of long-term investment & short-term investment patterns were analyzed. The expenditure pattern was also analyzed so that the paper can give a clear interpretation of changes in the investment & expenditure after the pandemic during 2020-21.

Literature Review:

Investors from India mostly prefer traditional investment which offers risk-free income. Investors like to invest in bank FD, RD because the major concern of the individual is to generate the constant and fixed income on the investment they are doing. But during the COVID 19 because of economic slowdown, various banks had cut down the interest rates which they are offering on the various

financial instruments such as FD, RD which gives risk-free income. To undertake the study various research paper were considered from different authors.

Most of the study says that the pattern of the investment from the individual changed during and after the lockdown. The investors now moving from risk-free to riskier investment avenues to get higher income. Despite a slowdown in the Indian economy the investors are showing interest in the share market, mutual funds, and life insurance were shown the most significant increase. Examining the relevant literary work from various researchers in the Indian context, they found out that because of the COVID 19 various businesses facing an economic slowdown, individual salaried persons also facing cut in income or job loss during the pandemic situation. Because of that various individuals are attracted towards the high rewarding investment opportunities in the markets such as share market, mutual funds, SIP, insurance, etc. The liquidity condition of the investment avenue i.e. ease of converting or selling an investment avenue and expect a higher rate of return was considered more important while selecting investment¹. During the pandemic condition in 2020-21, the expenditure pattern was also facing changes. The expenditure is more focused on livelihood not on entertainment, lifestyle, or any non-essential goods and services. One of the authors found that the investment objectives vary from investor to investor depending on demographic factors.ⁱⁱ In addition to that salaried investors irrespective of age and income besides their occupation and marital status prefer the investment options providing long-term benefit, highly secured and profitable avenues.ⁱⁱⁱ A previous study relevant to our research found out that the confidence level of individuals in managing the investment also influences investment decisions. Hence based on the literature review the study considered a wide range of investment and expenditure patterns to fulfill the objective of the research paper.

Research Methodology:

The study used the primary data collected through the questionnaire. The collected data were segregated by applying the convenience sampling method. The questionnaire was designed in three sections. The first focused on personal information such as age, demography, income source, income range, etc. The second section comprises questions to find out the preferences for investments. The third section focused to get a preview of the expenditure preference of individuals irrespective of their income. The sample size arrived through the questionnaire was near about 639 out of which 560 sample sizes were selected for the study.

Objective:

- 1. To find out the investment pattern of individuals during COVID 19 2020-21.
- 2. To find out the expenditure pattern of individuals during COVID 19 2020-21.

Limitations of the Study:

Because of the lockdown due to COVID 19, it was not possible to take face-to-face interviews of the respondent which leads to some fake replays also. Some people may not be ready to cooperate, had not shared the true responses, such responses were discarded and not considered for the study.

Data Analysis & Interpretation:

The data analysis was done in two sections one was to find investment patterns and another was for expenditure patterns. The sample which was collected for the study were selected based on their valid responses. A total of 639 responses were received out of which 500 responses were selected for the study.

Section I:

Age of the respondent:

The age of the respondent had a greater impact on the selection of the investment avenues. Also, the expenditure pattern was different. From the analysis perspective, the data were classified based on two age groups. One was 25 to 40 years and another was 41 to 55 which includes both male and female respondents. The sample which was collected for the study were selected on the basis of their

valid responses. A total of 639 responses were received out of which 500 responses were selected for the study.

There were 325 total responses from males and 175 from female responses were considered for the study. From each age group, there were 250 respondents. In age group A there were 155 males and 95 female respondents similarly in group B there were 170 males and 80 female candidates were selected.



All the respondents having the income from salary only. The consistency was maintained while selecting the samples.

Income of Respondent:

The income of the individual respondent directly affects the selection of the investment avenue. It has been observed by various researchers that the level of income increase directly proportional to the investment level.



Graph 03

39% of respondent belongs to the monthly income of 40 thousand to 50 thousand income group including both male and female. 23% belongs to the income range of 50 thousand to 60 thousand. Only 17% respondent belongs to the income above 60 thousand.

Awareness about the different investment avenues:

There are various investment avenues available for the investors as per the requirement of individuals for long-term or short-term investment. The level of awareness was found out using a three-point level scale i.e. 1 to 3. One resembles the low level of awareness, 2 resembles a moderate level and 3 resembles a high level of awareness regarding various financial instruments.

INVESTMENT AVENUES	Male	Female	Combined Mean				
STOCK MARKET	2.6	1.5	2.1				
MUTULE FUND	2.8	2.2	2.5				
SIP	2.7	2.6	2.7				
FIXED DEPOSIT	3	3	3.0				
POST OFFICE DEPOSIT	1.9	1.4	1.7				
RECURRING DEPOSIT	2.5	1.9	2.2				
GOLD	3	3	3.0				

AWARENESS ABOUT INVESTMENT AVENUES.

REAL ESTATE	3	3	3.0
LIC POLICIES	2.9	2.7	2.8
MEDICLAME	3	3	3.0
NATIONAL PENSION SCHEME	2.3	1.4	1.9
PERSONAL PROVIDENT FUND	2.8	2.5	2.7
BANK DEPOSITS	2.7	2.6	2.7
TOTAL AWARENESS	2.7	2.4	2.5

Table 01

From the above table, it has been observed that the all respondent was aware of the various investment avenues. It has been seen that the investors are a high level of awareness about the traditional investment avenues such as FD, Gold, Real Estate. After that investors are aware of LIC, SIP, Bank Deposits, PPF. The investors were less aware of the post office deposits, RD, NPS. On average the investor was aware of various investment avenues 2.5 on a three-point scale.

Factors considered while selecting investment instrument:

The following table shows the rankings and the percentage given by the investors as per the factors they have considered before selecting investment instruments.

FACTORS CONSIDERED WHILE SELECTING INVESTMENT INSTRUMENT:

FACTORS	Mean	Ranking
	Score	
LESS RISK	2.9	1
TAX SAVING	2.5	4
HIGH RETURN	2.7	3
SIMPLICITY	2.2	5
LIQUIDITY	2.6	2

Table 02

As per the responses given by the respondent, it has been observed that the investors considering the less risky instrument's for investing. The 3 points were given to the risk factor of investment. simplicity received the least ranking in factors of investment decisions. Getting the highest return also an important factor as per the investors' point of view.

Change in the Investment During 2020-21:

The change in the preference of the investment was analysed using following responses received from individuals.

CHANGE IN THE IN	VESTMENT	DURING 2020-21	1
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INVESTMENT AVENUE	Preference Level	Percentage of sample doing investment	Newly started investing in 2020- 21
STOCK MARKET	4.9	39.85%	80.93%
MUTUAL FUND	4.7	28.75%	67.23%
SIP	2.8	39.70%	35.90%
FIXED DEPOSIT	1.9	55.60%	5.87%
POST OFFICE DEPOSIT	0.9	41.89%	2.80%
RECURRING DEPOSIT	0.8	35.46%	3.40%
GOLD	1	61%	6.18%
REAL ESTATE	1.2	79%	29.45%
LIC POLICIES	4.9	59.57%	92.54%
MEDICLAME	4.9	32.75%	93.55%

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NATIONAL PENSION SCHEME	3.5	20.93%	46.41%			
PERSONAL PROVIDENT FUND	3.9	18.63%	58.23%			
BANK DEPOSITS	1.5	45.75%	1.30%			
Table No. 03						



Graph 04

From the table, it was observed that Share Market, LIC Policies, Mediclame, received the highest preference ranking given by the investors. The investors had moved on to the modern era investment instruments as compared to the traditional one. FD, RD, Bank saving, Post office deposits, Gold investment, Real Estate investment are facing a downfall compared to the previous year.

From the graph, it was observed that the Share market, mutual fund, LIC policies, Mediclame, PPF are increased their share in the market. Investment in the share market was raised from 39.8% to 80.93%, Mutual funds from 28.75% to 67.23%, LIC policies from 59.57% to 92%, Mediclame (Health Policies) from 32.75% to 93.55% during COVID 19 pandemic period 2020-21. Investors changed their investment pattern from traditional instruments to modern era instruments irrespective of the risk involved in it.

It was also observed that the investment pattern was a mixture of low-risk investment options and high-risk investment options to minimize the losses and for the higher returns.

Section II:

This section focused to find out the expenditure pattern of the individual before and after pandemic 2020-21.

Preferences of Expenditure:

The expenditure preferences were found out by using the 5-point scale. the various expenditure was given and the preferences were found out by ranking.

Expenditure Preferences	Respondent			
	Male	Female	Mean	
Daily Needs	4.5	4.9	4.7	
Vehicle	3.9	3.2	3.6	
Health	4.6	4.5	4.6	
Saving	4.3	4.1	4.2	
Entertainment	1.5	2.8	2.2	
Lifestyle	2.6	3.8	3.2	
Mean	3.57	3.88	3.7	

From the above table, the preferences were collected from the respondent regarding the preferences they are giving on various expenditures on daily life. As per the data received it has been found that on average 4.7 points had been given to the daily needs by the respondent such as vegetables, groceries, etc. After that most of the expenses were making on the health and saving during the pandemic. The expenses on lifestyle and entertainment were given less priority during and after the pandemic period. Female respondent was still towards making expenses related to lifestyle with 3.8 points.



Graph 05

From the above graph, it has been seen that the impact on expenditure before the pandemic and the after the pandemic of COVID 19. As per the respondents, their expenses were increased on daily needs by 4%, on health care by 17%, on savings by 4% during the COVID 19 period. The expenses were decreased on entertainment by -5%, on lifestyle by -12%, and vehicles by -8% as most of the respondents were working from home, and the lockdown was implied.

From the above data, we can say that the expenditure pattern was towards the basic requirement for daily life not on the entertainment and lifestyle compared to before the pandemic situation.

Findings:

For the study, the respondent was selected for the ager group of 25 years to 55 years to find out the perspective of the young investors and the old inverters in the market. the respondent had been asked about the awareness about various investment avenues and the analysis found out that the investors are more aware of the traditional investment avenues compared to modern investment avenues. But on the opposite to that, the investors are preferring to invest in modern investments during and after the Pandemic period 2020-21. Near about 80% + individuals have started their investment in the share market, mutual fund, lic policies, healthcare policies, NPS schemes, etc. The respondent was asked to rate factors affecting their investment from that the study found that the investment affected by the low risk, high liquidity, and higher returns.

The investment pattern was completely changed from a traditional to the modern one. The individuals are looking towards higher return investment avenues irrespective of the risk associated with it. The individuals are selecting their investment avenues in a combination of the modern and traditional one. The highest demand for Share Market, Mutual Fund, LIC policies, NPS, health care policies, PPF accounts is attracting the attention of the individuals who gives the highest return.

Similarly, the expenditure pattern was also changed from rough expenses to basic required expenses of livelihood. Individuals are more focused on savings, health, daily needs. The entertainment, and lifestyle quotient are going on the back seat of the expenditure list. Entertainment and lifestyle have now become the least priority for individuals.

Conclusion:

As per the research papers' findings, it can be concluded that there is a change in the investment pattern and expenditure pattern of an individual after the COVID 19 pandemic 2020-21. The

individuals are investing more on high risk but having higher return avenues such as share market, mutual funds, LIC policies, NPS, PPF, etc. The expenditure pattern has also seen a huge change during the pandemic situation during 2020-21. Now the individual is giving more priority to the expenditure which is most important for livelihood compared to entertainment and lifestyle quotient. From the research paper, it can be said that the year 2020-21 is defined as the new pattern in investment and expenditure in an individual's life.

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Research Article

A comparative study of Word Embedding Techniques to extract features from Text

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Abstract: Extract information from text into feature vectors is known as word embedding, which is used to represent the meaning of words into vector format. There have been no. of word embedding techniques developed that allow a computer to process natural language and compare the relationships between different words programmatically. In this paper, first, we introduce popular word embedding models and discuss desired properties of word model like similarity analysis, or the testing of words for synonymic relations, is used to compare several of these techniques to see which performs the best.

Keywords: Word embedding, Natural Language Processing, Neural Network, Machine Learning.

1. Introduction:[1][9]

In natural language processing (NLP) there are many algorithms used to achieve the best results, algorithms from Machine Learning (ML), Deep Learning (DL) and many others. The first issue you face in NLP is converting text to numbers that can be used in any algorithm a scientist chooses, but how to convert text to numbers? this is where Word Embedding algorithms come in picture.

Text-based data is increasing at a rapid rate, where the inferiority of the unstructured text is growing rapidly than structured text. Textual data is extremely common in many various domains whether social media, online forums, published articles and online reviews given online where people express their opinions and sentiments to some products or businesses. Text data is a rich source of getting information and gives more opportunity to explore valuable insights which cannot be achieved from quantitative data. The main aim of different NLP methods is to get a human-like understanding of the text. It helps to look at the vast amount of unstructured and low-quality text and find out appropriate insights. Couple with ML, it can formulate different models for the classification of low-quality text to give labels or obtain information based on prior training. Over the years text has been used in various applications such as email filtering, Irony and sarcasm detection document organization, sentiment and opinion mining prediction, hate speech detection, question answering, content mining, biomedical text mining and many more.



2. Word Embedding: [2][8]

Word embedding is a real-valued vector representation of words by embedding both semantic and syntactic meanings obtained from unlabelled large corpus. It is a powerful tool widely used in modern natural language processing (NLP) tasks, including semantic analysis, information retrieval, dependency parsing, question answering and machine translation. Learning a high- quality representation is extremely important for these tasks, yet the question "what is a good word embedding model" remains an open problem. As extensive NLP downstream tasks emerge, the demand for word embedding is growing significantly. As a result, lots of word

embedding methods are proposed while some of them share the same concept.

2.1 Desired Properties of Embedding Models:[2]

Different word embedding models yield different vector representations. There are a few properties that all good representations should aim for.

- Non-conflation
- Robustness Against Lexical Ambiguity
- Demonstration of Multifacetedness
- Reliability
- Good Geometry

3. Word embedding techniques:[7]

Below are the popular and simple word embedding methods to extract features from text are

- Bag of words
- TF-IDF
- Word2vec
- Glove embedding
- Fastest
- ELMO (Embeddings for Language models)

4. Feature Extraction Method:[1][7][4][8]

In this section, we discuss various popularly used feature extraction models. Different features of extraction models are proposed to address the problem of losing syntactic and semantic relationships between words. These methods have been adopted for different NLP related tasks. First, we present some classical models, followed by some famous representation learning models.

4.1 Classical Models

This section presents some of the classical models which were commonly used in earlier days for the text classification task. Frequency of words is the basis of this kind of words representation methods. In these methods, a text is transformed into a vector form which contains the number of the words appearing in a document.

(1) <u>Categorical word representation:</u>

This is the simplest way to represent text. In this method, words are represented by a symbolic representation either "1" or "0".

• One hot encoding: The most straightforward method of text representation is one hot encoding. In one hot encoding, the dimension is the same amount of terms present in the vocabulary. Every term in vocabulary is represented as a binary variable such as 0 or 1, which means each word is made up of zeros and ones.



One-hot encoding allows us to turn nominal Categorical data into features with numerical values, While not mathematically imply any ordinal relationship between the classes.

• Bag-of-Words (BoW): BoW is simply an extension of one-hot encoding. It adds up the one-hot representations of words in the sentence. The BOW method is used in many different areas such as NLP, computer vision (CV), and information retrieval (IR) etc.



(2) <u>Weighted Word representation</u>:

Here, we present the common methods for weighted word representations such as Term Frequency (TF) and Term Frequency-Inverse Document Frequency (TF-IDF). These are associated with categorical word representation methods but rather than only counting; weighted models feature numerical representations based on words frequency.

• Term Frequency (TF): Term frequency (TF), is the straightforward method of text feature

extraction. TF calculates how often a word occurs in a document. A word can probably appear many times in large documents as compared to small ones. Hence, TF is computed by dividing the length of the document. In other words, TF of a word is computed by dividing it with the total number of words in the document.



Term Frequency-Inverse Document Frequency (TF-IDF): TF-IDF is presented to cut down the impact of common words such as 'the', 'and' etc. in the corpus. TF means Term frequency which is defined in the above section, and IDF is inverse document frequency which is a technique presented to be used with TF to reduce the effect of common words. IDF assigns a more weight to words with higher or lower frequencies. This combination of TF and IDF method is known as TF-IDF.

4.2 Representation Learning

The limitations of classical feature extraction methods make it use a limited for building a suitable model in ML. Due to this, different models have been presented in the past, which discovers the representations automatically

for downstream tasks such as classification. Such methods which discover features itself are called as feature learning or representation learning. In the area of NLP, unsupervised text representation methods like word embeddings have

replaced categorical text representation methods. These word embeddings turned into very efficient representation methods to improve the performance of various downstream tasks due to having a previous knowledge for different ML models. Classical feature learning methods are replaced by these neural network-based methods thanks to their good representation learning capacity. Word embedding is a feature learning method where a word from the vocabulary is mapped to N dimensional vector. Many different words embedding algorithms have been presented.

(1) Continuous Words Representation (Non-Contextual Embeddings):

Word Embedding is NLP technique in which text from the corpus is mapped as the vectors. In other words, it is a type of learned representation which allows same meaning words to have the same representation. It is the distributed representation of a text (words and documents) which is a significant breakthrough for better performance for NLP related problems.

Word2Vec

Word2vec is an efficient analytical model used to transform the raw text into word embeddings. This model is predicated on words with similar semantics present within the same context. this will be modelled by placing a word during a high dimensional vector space then moving words closer supported their probabilities to seem within the same context. Two important methods are used to calculate these vectors

like, Continuous Bag-of-Words model (CBOW) and Skip-Gram model. The advantage of this model is to handle huge volume of documents and provides the optimal results with word vectors.



Continuous Bag of words (CBOW) [5]

Continuous Bag of words (CBOW) gives words prediction of current work based on its context. CBOW communicates with the neighbouring words in the window



Skip-Gram:

Skip-Gram is the reverse of CBOW model;

prediction is given based on the central word after the training of context in skip-gram. **GloVe**

The Global Vectors for Word Representation, or GloVe, calculation is an augmentation to the word2vec strategy for efficiently learning word vectors, created by Pennington, et al. at Stanford University. Conventional vector space models expose of words were produced utilizing matrix factorization strategies. GloVe is an approach to extracts both the novel measurements of matrix factorization procedures like LSA with the local context-based learning in word2vec.GloVe constructs an express word-context or word co-occurrence matrix

utilizing statistics over the entire text corpus .The outcome is a learning model is the better embeddings in terms of words.

Word Order Vectors (WOVe) [4]



The next word embedding technique is WOVe , a modification upon GloVe proposed by Cox in 2019 that was able to improve GloVe's

effectiveness in the analogy task by 9.7%. While GloVe does use word-weighting based on those words' distance from the target word when creating the word vector, it does so by generating inclusive matrices. For an inclusive matrix, all words from the target word to the edge of the context window are considered and weighted according to their distance, resulting in a singular vector

FastText [6]

Bojanowski et al. [15] proposed FastText and is based on CBOW. When compared with other algorithms, FastText decreases the training time and maintains the performance. Previously mentioned algorithms assign a distinct representation to every word which introduces a limitation, especially in case of languages with sub-word level information/ OOV



Figure 1: Model architecture of fastText for a sentence with N ngram features x_1, \ldots, x_N . The features are embedded and averaged to form the hidden variable.

(2) Contextual word representations:

• Generic Context word representation (Context2Vec):

Generic Context word representation (Context2Vec) was proposed by Melamud in 2016 to generate contextdependent word representations. Their model is based on word2Vec's CBOW model but replaces its average word representation within a fixed window with better and powerful Bi-directional LSTM neural network



• Contextualized word representations Vectors (CoVe):



McCann presented their model contextualized word representations vectors (CoVe) which is based on context2Vec. They used machine translation to build CoVe instead of the approach used in Word2Vec (skip-gram or CBOW) or Glove (Matric factorization)

Embedding from language Models (ELMo):

Peters et al. roposed Embedding from Language Models (ELMo), which gives deep contextual word representations.



5. Analysis of Word Embedding Models: [1][10]

Language Models	Semantics	Syntactical	Context	Out of Vocabulary
1-Hot encoding	[×]	[×]	[×]	[×]
BoW	[×]	[×]	[×]	[×]
TF	[×]	[×]	[×]	[×]
TF-IDF	[×]	[×]	[×]	[×]
Word2Vec	[√]	[√]	[×]	[×]
GloVe	[√]	[√]	[×]	[×]
FastText	[√]	[√]	[×]	[√]
Context2Vec	[√]	[√]	[√]	[√]
CoVe	[√]	[√]	[√]	[×]
ELMo	[√]	[√]	[√]	[√]

6. Comparision	of Word	Embedding	Models	[1][3]
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Model	Architec t ure	Туре	Pros	Cons
One Hot Encoding and BoW	-	Count based	Easy to compute Works with the unknown word Fundamental metric to extract terms	It does not capture the semantics syntactic info. Common words effect on the results Can not capture sentiment of words
TF and TF-IDF	-		Easy to compute Fundamental metric to extract the descriptive terms Because of IDF, common terms do not impact results	It does not capture the semantics syntactic info. Can not capture the sentiment of words
Word2Vec	Log Bilinear	Prediction based	It captures the text semantics syntactic Trained on huge corpus (Pre-trained)	Fails to capture contextual information. It fails to capture OOV words Need huge corpus to learn
GloVe	Log Bilinear	Count based	Enforce vectors in the vector space to identify sub-linear relationships Smaller weight will not affect the training progress for common words pairs such as stop words	It fails to capture contextual information Memory utilization for storage It fails to capture OOV words Need huge corpus to learn (Pre- trained)
FastText	Log Bilinear	Prediction based	Works for rare words Address OOV words issue.	It fails to capture contextual information Memory consumption for storage Compared to GloVe and Word2Vec, it is more costly computationally.
Context2Ve c CoVe ELMo	BiLST M	Prediction based	i) It solves the contextual information issue	Improves performance Computationally is more expensive Require another word embedding for all LSTM and feed- forward layer

7. Conclusion:

The paper has presented multiple techniques used in word embedding and the models and techniques used in those techniques in an attempt to ease the pain of understanding and learning them, it is not considered a full material to learn everything about word embedding techniques but more like an introduction. The main aim of this research work is to analyse the performance of word embeddings algorithm. we have introduced various algorithms that enable us to capture rich information in text data and represent them as vectors for traditional frameworks. We firstly discussed classical methods of text representation. every method has their advantages like a Bag-Of-Words suitable for text classification, TF-IDF is for document classification, WOVe technique for synonyms and if you want semantic relation between words then go with word2vec. We have to choose embedding model depends upon the requirement and corpus.

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STUDY OF ONLINE, PHYSICAL (FACE TO FACE) OR BLENDED EDUCATION IN NEW NORMAL

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Abstract:

Education is the important factor on which entire Globe is dependent for the devotement, we have experienced many times that Science, Technology, Engineering and Mathematics played very important role in revolution of Traditional Education to the Smart Education. With the changing era, Smart Phones, Smart appliances to Smart Classes are now new terminologies. As we have witnessed new era teaching methodologies and pandemic, in this research paper we are going to discuss about the Online teaching, Physical (Face to Face) Classes or Blended (Online and Physical) Classes.

Keywords: Online Education, Physical (Face to Face) Education, Blended Education

Introduction:

Covid pandemic has been the worst time which we experienced in last one and half year but if we have evaluated our entire timeslot of 1 and half year we can experience that this pandemic has proved as blessings also to many. Surprisingly, there are many Online businesses had taken their highest peak. Many came Online not only for business or shopping but even all social gatherings became Online and we have understood that to live the life our requirements are very less.

1) Education is the "The beautiful thing about learning is that no one can take it away from you"

2) – B. B. King (htt)


Education is a long term investment. The time and money you put in, the courage you have to move through challenges and persevere... it will all keep paying off for the rest of your life. (htt)

When World Health Organization, Central and State Government was in the search of solutions in terms of medicines to prescribe and vaccines to provide, the entire teaching fraternity was in the worries and planning of taking out solution to reach to their students. Zoom, teams, Google meet proved as best solution in those times. Our many non-techno savvy teachers started learning new ways to come out the challenging situation.

We learned, practiced and implemented the same to make our teaching learning the best.

There were challenges are yes there will be as we all know each child is the God's Gift but teaching them with all possible ways was challenging as we were not able to one to one attention for their writing practices.

We are very well versed for Traditional teaching learning methodologies so many of us wants to learn always in that way only.

Blended classes and learning concept is now taking the attraction as Government has given permission to start schools for Physical classes and when any parents those don't want to send their ward it goes for Online Classes.



Fig1: Modes of Learning (htt2)

The introduction of blended learning (combination of face-to-face and online teaching and learning) initiatives is part of these innovations but its uptake, especially in the developing world faces challenges for it to be an



effective innovation in teaching and learning. Blended learning effectiveness has quite a number of underlying factors that pose challenges. (htt1)

One big challenge is about how users can successfully use the technology and ensuring participants' commitment given the individual learner characteristics and encounters with technology (Ble). Hofmann adds that users getting into difficulties with technology may result into abandoning the learning and eventual failure of technological applications. (Ble)

Whenever any mix experiment is used that mix has proved to be the experience of mixed reactions.

There is such thing as Quality, but that as soon as you try to define it, something goes haywire. You can't do it" (htt1)

In Education, working in blended mode can't give that justice. But, yes there can be always different impacts as per the requirement and execution.

Here, in this research paper we are going to study impacts, views by Students, teachers and Parents.

Data Collection:

In this research paper we used Primary Data Collection method. We have taken Survey for Online, Physical and Blended Classes. A google form shared among Students, teachers and Parents to understand their favourite mode of education and also to take some suggestions and feedbacks.



Survey on Online, Physical or Blended	lam*
Learning	◯ Student
This survey is for the analysis of Online, Physical or Blended learning i.e. both online and Physical Classes. This will help researchers to bring out attention to concerns of Students, Teachers and Parents.	Teacher Parent
Sign in to Google to save your progress. Learn more * Required	I prefer *
Which Mode of Education is better as per your opinion.	 Online Mode for Classes Physical Classes (On Site) Blended Classes (Both Online and Physical Classes)
CLASSROOM TRAINING	Reason for opting classes any mode * Comfort ability Time Saving Great Learning Safety Cost Effective
Name of Participant *	Suggestions and Expectations *

Fig 2: Google form view for the survey on Online, Physical or Blended Learning

Data Interpretation:

In this research paper, on the basis of the Survey we have collected information as shown in the Fig 1 for Google form view for the Survey on Online, Physical or Blended Learning. Analysis based on the Survey of the Online, Physical or Blended Learning has clarified various concerns based on the reactions by Students, Teachers and Parents.

We have collected data from via Google form asking for Participants name, their category in terms of Student, Teachers and Parents. We have collected preferences by Students, Teachers and Parents for Online, Physical and Blended mode of teaching leaning.

We have given various reasons and asked participants their views for selecting the mode of learning also along with the Suggestions and Expectations.

Data Analysis:



In this research paper, as we have compared survey on Online, Physical and Blended Lerning outcomes, we hve tken ctergories of prticipnts as Students, Teachers and Parents.



Fig 3: Representation of number of Participants

Above representation gives us clear idea for the participants in the survey for Online, Physical (Face to face) or Blended Learning. In the survey out of total, there are 52.3% of Students, 31.3 % of Teachers and 16.4 % of Parents participated, which again shows Students actively participated in the survey.

We have given another set for collecting responses in terms of Online, Physical (Face to face) or Blended Learning, when given options for the selecting the choice to all participants which involves Students, teachers and Parents to select the mode of learning they prefer the survey results are as follows.



Fig 4: Representation of preferred mode of learning



From the responses collected we can analyse that the Online mode of learning is for 22.7%, Physical Classes (Face to Face) Classes for 44.5% and Blended Classes for 32.8 %, which shows that maximum responses received for Physical Classes i.e. 44.5 %.

Comparing no of Students participation in survey there can be maximum responses for Physical i.e. Face to Face participation.

To understand more about the parameters for participants' choice for preferred mode of learning we have provided 6 different parameters which can give the clear view for the finalization of their mode of learning.



Fig 5: percentwise representation for various parameters for preferred mode of learning

From the statistical representation, we can simply represent the responses from preferred mode of learning as for Comfortability is 44.5%, Time Saving as 36.7 %, Great Learning as 70.3 %, Safety as 40.6 % and cost effective is 25.8 %.

Above responses shows maximum results for Great Learning for the preferred mode of Learning.

From the above three cases from Fig. 3 to Fig 5, we can analyse that maximum participation of Students, Preferred mode for Learning is Physical Classes and the reasons for selecting the mode of learning is that due to highest responses factor as Great learning and another set of results for Comfortability.

Different participant may have different view of selecting the choice of learning mode. But yes no doubt that Physical Classes always proved nest and Face to Face interaction s and learning is the traditional way of learning which is followed from years to years.



We have received various feedbacks and Suggestions too where we can give importance to all factors for understanding concerns raised by Students, teachers and parents.

Conclusion:

The survey conducted for Online, Physical (Face to Face) or Blended mode of learning has given the very clear idea for the preferred mode of learning. Preferred mode of learning is always the Face to Face learning i.e. Physical Classes i.e. mode of Learning.

In country like India where we have diverse population, as an alternative way of classes opted during pandemic was the best as taking Classes Online but due to various challenges like Internet Connectivity, Availability of devices for opting for Online Classes was just the alternative as it has not reached to all. Unreached students lacked in their academics and resulted into an academic year gap too.

Technology is moving very faster with the implementation of ICT, but no doubt that it cannot affordable to all.

We need to provide so much of training to teachers, students and somewhere to parents also to opt for Blended learning as things for implementation are easy for Higher education but in terms for implementing it for Primary grades is the most challenging task.

In future we never the challenges also for Pandemic situation, but gradually our Education System and Students will definitely opt for Blended mode of Learning.

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EFFECT OF COVID-19 ON MOODLE BASED E-LEARNING

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Abstract:

In the early 2020, Covid19 pandemic hit Indian education system forcing to change from chalk and board to online learning. The authors created Moodle based online learning course in Mathematical discipline. This paper summarises the study outcome learn from student's experience collected through ATTLS - Attitudes to Thinking and Learning Survey executed using the learning management system (LMS) - Moodle. The objective of this research was to understand impact of current situation on students learning and to improve the overall learning experience as well as quality of learning.

Keywords: E-learning, Moodle, ATTLS, Attitudes to Thinking and Learning Survey, online education, learning style, connected learning, separate learning

Introduction:

Under the continues quality improvement program the researchers seeks improvement initiatives for the betterments in education field. The research analysis presented here is also the part of the ongoing development process taken place.

The global pandemic of Covid-19 hit Indian continent with early 2020. The existing educational system from offline lectures has been forced to shut down and many education institutes moved to the alterative platforms. The most widely used available platforms were google classroom and Moodle. In this critical situation to understand the need of the hour a new avenue was explored and alternative to traditional education system were created.

The major research question that come to surface were:

- 1. What are technological alternative solutions available?
- 2. What will be the effect of these alternatives on the learners?
- 3. What will be the learner's attitudes to thinking and learning in the current situations?

To address the above questions and to improve the education mechanism the completely new e-learning Moodle platform was implement. On this learning management system, a new course in the discipline of mathematics was creating and the research was conducted on the students of post-graduation level. [1][2][3]

Background:

The subjects in the mathematical discipline requires learners to reason with questions. The learner with these skill sets are good at problem solving mechanism as well as show intuitiveness. The impact of new technologies teaching and learning from problem solving scenarios requires large involvement from learners. But in the scenarios of online or distance education it requires to create a suitable learning environment during learning process.

Objective of the Research:

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ISSN: 0972-7175

To investigate the attitude of the post graduate student towards learning through Moodle

Significance of the Research:

The significance of the research is to

- 1. Investigate the attitude of the post graduate students towards learning environment using Moodle
- 2. To encourage course creators to utilize Moodle resources
- 3. To understand connected and disconnected learning styles of the class and individual

Theoretical Background:

The standardized scaled used for this research is Attitudes towards Thinking and Learning survey. The objective of ATTLS is to identify connectivity and disconnectivity within the course. used to measure the quality of discourse within the course. This is used to identify connectivity of the learning towards the course. The objective is finding the students who are enjoying the learning experience in the course and to encourage there engagement as well. It also helps to identify separate learners who are more critical and argumentative about the course. The shorten ATTLS self-responsive questionnaire of Initially the ATTLS consisted of 2 questions each for separate and connected knowing and question each is used for this research. [1][2]

Methodology

This research methodology is created based on the action research foundation principle. The stages of research methodology are as follows:

- 1. Experimental Design: In the experimental design, the overall course structure was finalized and the necessities for research are list.
- 2. Course Creation: Based on the required resources are updated on the learning management systems and post graduate students are enrolled into the course.
- 3. Survey and Data Collection: The Moodle preconfigured ATTLS Attitudes to Thinking and Learning Survey was used to collect the data. Learners are requested to fill the necessary information and data was collected online. [3][4]
- 4. Result analysis and interpretation: The individual responses are validated and analyse one by one. The summaries graphical representation is presented below in the paper.

In our experimental study, we have used ATTLS 20 question short version questionnaire and responses are collected through the learning management system Moodle. A specific mathematical discipline course is selected for the research and students are enrolled on to the course. To understand current situation and its effect on learners we have asked all to complete ATTLS survey. This was on the volunteer basis only. [5]

Approach: To understand the learning approach of the learners in online learning environment learning management system Moodle was used

Population: The population involved all the existing learners of the mathematical discipline course.

Sample: For the collection of primary data, researcher tried to conduct survey from all the population on volunteer base model. Out of total 109 learners maximum of 102 valid responses are received

Results:

The summary results are shown in the figure 1. Out of 109 responders, 102 have volunteered to answer the questionnaire. They have answered all 20 questions of ATTLS. Based on the standard scaling following results are reported.



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The above figure 1 showed the summary result of ATTLS scores overall results. The most of the score display connectivity in learning between the students is higher compared to distinctive learning in this environment. The parameter wise details about connected learning and separate learning is as follows:



Figure 2 Connected Learning

The figure 2 explain the ATTLS 10 questions responses overall summary. Each learner is asked question on the based on the behaviour. Learners responded very high for interact with variety and enjoy hearing opinions. This result is promising in the current scenario of Covid-19. All the other parameters are on the level of some what agree making it as acceptability of the current situation.

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Figure 3 Separate Learning

The effect of current situation impacted students learning in the way of challenging every scenario. In the response to separate learning questions, learners are trying to remain objective and trying to maintain the focus of the quality. For the course of mathematical discipline, the response of logic most has promising results in the cultivation of thinking and right attitude development. Strengthen by argue display learner's improvement in the point of stability and health learning environment.

Conclusion

In the conclusion, the research conducted for the understanding of effect of Covid-19 in online learning through Moodle. Based on the preliminary survey conducted with ATTLS conducted there is positive attitude towards new learning environment by the learning. There is scope to extend this research to conduct more survey for better understanding. The course creators can also be motivated to create holistic approach for new way of teaching. Most importantly individual identification of learner from connectivity identified will be helpful in the future to work on those learners individually.

Future work

Future of the research can be conducted by conducting constructivist surveys on the same learner. **References**:

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EFFECT OF COVID-19 ON MOODLE BASED E-LEARNING

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STUDY OF ONLINE, PHYSICAL (FACE TO FACE) OR BLENDED EDUCATION IN NEW NORMAL

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Abstract:

Education is the important factor on which entire Globe is dependent for the devotement, we have experienced many times that Science, Technology, Engineering and Mathematics played very important role in revolution of Traditional Education to the Smart Education. With the changing era, Smart Phones, Smart appliances to Smart Classes are now new terminologies. As we have witnessed new era teaching methodologies and pandemic, in this research paper we are going to discuss about the Online teaching, Physical (Face to Face) Classes or Blended (Online and Physical) Classes.

Keywords: Online Education, Physical (Face to Face) Education, Blended Education

Introduction:

Covid pandemic has been the worst time which we experienced in last one and half year but if we have evaluated our entire timeslot of 1 and half year we can experience that this pandemic has proved as blessings also to many. Surprisingly, there are many Online businesses had taken their highest peak. Many came Online not only for business or shopping but even all social gatherings became Online and we have understood that to live the life our requirements are very less.

1) Education is the "The beautiful thing about learning is that no one can take it away from you"

2) – B. B. King (htt)



Education is a long term investment. The time and money you put in, the courage you have to move through challenges and persevere... it will all keep paying off for the rest of your life. (htt)

When World Health Organization, Central and State Government was in the search of solutions in terms of medicines to prescribe and vaccines to provide, the entire teaching fraternity was in the worries and planning of taking out solution to reach to their students. Zoom, teams, Google meet proved as best solution in those times. Our many non-techno savvy teachers started learning new ways to come out the challenging situation.

We learned, practiced and implemented the same to make our teaching learning the best.

There were challenges are yes there will be as we all know each child is the God's Gift but teaching them with all possible ways was challenging as we were not able to one to one attention for their writing practices.

We are very well versed for Traditional teaching learning methodologies so many of us wants to learn always in that way only.

Blended classes and learning concept is now taking the attraction as Government has given permission to start schools for Physical classes and when any parents those don't want to send their ward it goes for Online Classes.



Fig1: Modes of Learning (htt2)

The introduction of blended learning (combination of face-to-face and online teaching and learning) initiatives is part of these innovations but its uptake, especially in the developing world faces challenges for it to be an



effective innovation in teaching and learning. Blended learning effectiveness has quite a number of underlying factors that pose challenges. (htt1)

One big challenge is about how users can successfully use the technology and ensuring participants' commitment given the individual learner characteristics and encounters with technology (Ble). Hofmann adds that users getting into difficulties with technology may result into abandoning the learning and eventual failure of technological applications. (Ble)

Whenever any mix experiment is used that mix has proved to be the experience of mixed reactions.

There is such thing as Quality, but that as soon as you try to define it, something goes haywire. You can't do it" (htt1)

In Education, working in blended mode can't give that justice. But, yes there can be always different impacts as per the requirement and execution.

Here, in this research paper we are going to study impacts, views by Students, teachers and Parents.

Data Collection:

In this research paper we used Primary Data Collection method. We have taken Survey for Online, Physical and Blended Classes. A google form shared among Students, teachers and Parents to understand their favourite mode of education and also to take some suggestions and feedbacks.



Survey on Online, Physical or Blended	lam*
Learning	◯ Student
This survey is for the analysis of Online, Physical or Blended learning i.e. both online and Physical Classes. This will help researchers to bring out attention to concerns of Students, Teachers and Parents.	Teacher Parent
Sign in to Google to save your progress. Learn more * Required	I prefer *
Which Mode of Education is better as per your opinion.	 Online Mode for Classes Physical Classes (On Site) Blended Classes (Both Online and Physical Classes)
CLASSROOM TRAINING	Reason for opting classes any mode * Comfort ability Time Saving Great Learning Safety Cost Effective
Name of Participant *	Suggestions and Expectations *

Fig 2: Google form view for the survey on Online, Physical or Blended Learning

Data Interpretation:

In this research paper, on the basis of the Survey we have collected information as shown in the Fig 1 for Google form view for the Survey on Online, Physical or Blended Learning. Analysis based on the Survey of the Online, Physical or Blended Learning has clarified various concerns based on the reactions by Students, Teachers and Parents.

We have collected data from via Google form asking for Participants name, their category in terms of Student, Teachers and Parents. We have collected preferences by Students, Teachers and Parents for Online, Physical and Blended mode of teaching leaning.

We have given various reasons and asked participants their views for selecting the mode of learning also along with the Suggestions and Expectations.

Data Analysis:



In this research paper, as we have compared survey on Online, Physical and Blended Lerning outcomes, we hve tken ctergories of prticipnts as Students, Teachers and Parents.



Fig 3: Representation of number of Participants

Above representation gives us clear idea for the participants in the survey for Online, Physical (Face to face) or Blended Learning. In the survey out of total, there are 52.3% of Students, 31.3 % of Teachers and 16.4 % of Parents participated, which again shows Students actively participated in the survey.

We have given another set for collecting responses in terms of Online, Physical (Face to face) or Blended Learning, when given options for the selecting the choice to all participants which involves Students, teachers and Parents to select the mode of learning they prefer the survey results are as follows.



Fig 4: Representation of preferred mode of learning



From the responses collected we can analyse that the Online mode of learning is for 22.7%, Physical Classes (Face to Face) Classes for 44.5% and Blended Classes for 32.8 %, which shows that maximum responses received for Physical Classes i.e. 44.5 %.

Comparing no of Students participation in survey there can be maximum responses for Physical i.e. Face to Face participation.

To understand more about the parameters for participants' choice for preferred mode of learning we have provided 6 different parameters which can give the clear view for the finalization of their mode of learning.



Fig 5: percentwise representation for various parameters for preferred mode of learning

From the statistical representation, we can simply represent the responses from preferred mode of learning as for Comfortability is 44.5%, Time Saving as 36.7 %, Great Learning as 70.3 %, Safety as 40.6 % and cost effective is 25.8 %.

Above responses shows maximum results for Great Learning for the preferred mode of Learning.

From the above three cases from Fig. 3 to Fig 5, we can analyse that maximum participation of Students, Preferred mode for Learning is Physical Classes and the reasons for selecting the mode of learning is that due to highest responses factor as Great learning and another set of results for Comfortability.

Different participant may have different view of selecting the choice of learning mode. But yes no doubt that Physical Classes always proved nest and Face to Face interaction s and learning is the traditional way of learning which is followed from years to years.



We have received various feedbacks and Suggestions too where we can give importance to all factors for understanding concerns raised by Students, teachers and parents.

Conclusion:

The survey conducted for Online, Physical (Face to Face) or Blended mode of learning has given the very clear idea for the preferred mode of learning. Preferred mode of learning is always the Face to Face learning i.e. Physical Classes i.e. mode of Learning.

In country like India where we have diverse population, as an alternative way of classes opted during pandemic was the best as taking Classes Online but due to various challenges like Internet Connectivity, Availability of devices for opting for Online Classes was just the alternative as it has not reached to all. Unreached students lacked in their academics and resulted into an academic year gap too.

Technology is moving very faster with the implementation of ICT, but no doubt that it cannot affordable to all.

We need to provide so much of training to teachers, students and somewhere to parents also to opt for Blended learning as things for implementation are easy for Higher education but in terms for implementing it for Primary grades is the most challenging task.

In future we never the challenges also for Pandemic situation, but gradually our Education System and Students will definitely opt for Blended mode of Learning.

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A Review Paper of Manet and Cloud Computing

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Abstract:

Ad hoc cloud computing environment providing a way to distributed collaboration. Now days distributed collaboration is become a need in offices and laboratories. However, computer resources and in offices and laboratories are under – utilized, while conventional cloud computing composed of dedicated sever are not suited to flexibly deploying application adhoc. In this work we have done the literature reviews of Mobile Ad hoc network protocols (MANET) like Ad-hoc On Demand Distance Vector (AODV), Destination Sequenced Distance Vector Algorithm (DSDV), and Improved Destination Sequenced Distance Vector Algorithm (I-DSDV). This paper also includes literature review of a cloud computing & its performance analysis through simulation models. Simulation results show that I-DSDV compared with DSDV, it reduces the number of dropped data packets with little increased overhead at higher rates of node mobility but still can't compete with AODV in higher node speed and number of node. Similarly, to these studies, our target is measure the performance of ad-hoc cloud networks by using different ad – hoc network protocols using OPNET Simulator 14.5.

Keywords: Mobile Ad hoc-network protocol, ad hoc cloud computing, performance analysis, simulation models, OPNET 14.

I. INTRODUCTION

The cloud computing is a new computing model which comes from grid computing, distributed computing, parallel computing, virtualization technology, utility computing and other computer

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technologies and it has more advantage characters such as large scale computation and data storage, virtualization, high expansibility, high reliability and low price service. Cloud computing is the use of hardware or software resources that are delivered as service over network. Ad-hoc network: Definition: "Ad Hoc network is a self-organizing multi-hop wireless network, which relies neither on fixed infrastructure nor on predetermined connectivity".

The decentralized nature of wireless ad-hoc networks makes them suitable for a variety of applications where central nodes can't be relied on, and may improve the scalability of wireless ad-hoc networks compared to wireless managed networks, though theoretical and practical limits to the overall capacity of such networks have been identified. Ad- hoc cloud computing means allow cloud services to run on existing heterogeneous hardware. In other words, running cloud services on ad-hoc network. Computational and storage resources within organizations are often under-utilized. By using this concept, we can increase the utilization of general purpose computers & other hardware devices.

II. LITERATURE REVIEW

There has been a branch of research activity in assessing the performance of virtualized resources, in cloud computing environments and in general. In paper [13] work is only specific to EC2 of Amazon web services. In this work performance analysis are categorized in two methods i.e. Cloud specific evaluation and Infrastructure uncertain evaluation. In cloud specific evaluation, the duration of resource acquisition and release over short time and long periods of time.

In Infrastructure uncertain evaluation they have designed two methods of workload i) SJSI (run one or more Single process jobs on single instance). ii) MJSI (Single misprocess jobs on multiple instances). Also they have done the analysis of Resource acquisition and release, Single instances, multiple instances, Performance of SJSI workloads, Compute Performance, I/O Performance Memory Hierarchy Performance, Performance of MJMI workloads, reliability, HPL performance.

In [15] paper author has focused on performance comparison analysis with low cost with different QoS. This paper has considered the three factors i.e. Network bandwidth, Quality of Service and Cost. The main objective of this paper is performance comparison analysis with low cost with different Quality of Service. This framework is implemented by OPNET SIMULATION Model 14.5.

In study [14] author has considered mainly three protocols that are AODV (Ad-hoc on demand distance vector), DSDV (Destination Distance Vector Algorithm) and I-DSDV (Improvement of DSDV). These Protocols are ad-hoc network protocol which is used to designed ad-hoc network. In the above paper, Performance analysis of ad-hoc network protocols (AODV, DSDV, I-DSDV) was done by using NS-2 simulation model and compared in terms of Packet delivery ratio, end to

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end delay, routing overhead in different environment like varying number of nodes, speed and pause time.

QoS is the major factor of service performance, which determines the degree of satisfaction of user. There are two concerns of service a) Technology Oriented b) Service oriented .In this work the degree of satisfaction is expressed by the following qualitative measures.

- a) End–to–end delay
- b) Delay variations
- c) Throughput

The process of providing these QoS requirements is called as Provisioning. Some of the main importance of QoS Provisioning is:

- a) Traffic can be differentiated and provided different levels of service.
- b) The amount of traffic network can be controlled based on the resources.
- c) QoS make it possible to implement the policies across devices and end users.

d) QoS can enable networks to deliver defined levels of service with existing network infrastructure.

This main objective in this paper was Investigate an alternative real time distribution and delivery method for multimedia applications such as live video streaming, live TV, Video on demand using on demand cloud as a service.

In paper [16], Comparison of two on demand routing protocols for mobile & ad-hoc networks has been done. Protocols used for these comparisons are AODV, DSR and traditional protocol DSDV. A variety of workload has been tested in this paper like mobility, load and size of network in given scenario. This simulation model has been created by using NS-2 simulator. In this paper, simulation results and observations are carried out by following factors.

- a) Packet delivery fraction (PDF).
- b) Average End-to-End delay result.
- c) Routing overhead.
- d) Packet loss as a function of pause time

After result observation author concluded that, AODV and DSR are reactive protocol, while DSDV is proactive protocol. Both reactive protocols performed well in this scenario. DSR generates lower overhead than AODV while DSDV generates almost constant overhead due to

proactive nature. DSR has given poor performance in respect of that, Average delay can be accounted to aggressive use of caching and inability to delete state route. DSDV provided high mobility results in frequent link failures and overhead involved in updating all the nodes with new routinginformation. DSR consistently generates less routing load than AODV.

In paper [17], Cloud security challenges and solutions have been discussed with the help of literature reviews and simulation model created by OPNET TOOL to produce useful statistics to provide optimal security and compliance. By using simulation results author demonstrated that UTM (Unified threat management) may not be feasible solution for security implementation of cloud. Multi cloud model is created by using OPNET Modeler. Model architecture contains –

- a) Internet domain with high connectivity switch (1500 concurrent user can connect.
- b) UTM cloud model with cloud infrastructure with security.
- c) All clouds are internetworked using high end switches with ATM OC-48 links.

d) Seven applications configured with some built in parameters like RDBMS service with high load, Antiviruses and Antispyware applications, Web services with high load data service etc.

After successful creating & running simulation model results were carried out and it was observed by author that, cloud computing security issues can be investigated with special emphasis on governance of security and compliance from the perspective of user companies as well as cloud service provider. Some literatures recommended by NIST (National Institute of Standards and Technology) states that cloud security should be hosted as a service oriented framework and the accountability should with separate security as a service. However, in this paper a report by Gartner recommends that visualization security cannot be implemented in centralized manner following the UTM approach. The simulations results in this paper carried out are supporting Gartner recommendations.

In paper [18], BI and OLAP services along with cloud application have been created by using OPNET Simulation TOOL. The network was design in such a way that loads can be evenly distributed to all RDBMS servers. The application has been configured in a way that all RDBMS server can evenly involve in receiving and processing the OLAP query load. The cloud model in OPNET Simulator comprises two large domains that are BI on the cloud domain and Extranet domain consisting six corporates having 500 OLAP users in each corporate.

BI on the cloud domain is expanded with four CISCO 7609 router so that they can evenly distribute the load. After creating the model simulator were run and results are carried out & observed. Hence In this paper, Author concluded that cloud computing can be implemented in three ways a) Software as-a-Service b) Platform as-a-Service c) Infrastructure as-a-Service. These services may provide depending upon the business requirements. However, SaaS provider

needs the settings on Paas and Iaas. In this study, Results have been reflected the ideal scenario for taking BI on cloud. However, Real clouds will not have ideal configuration as made in the OPNET Modeler. Hence real challenges on cloud needs to be identified and addressed to ensure that results can be brought closer to ideal scenario as far as possible.

In study [19], Author has mentioned the way to distribute the load of server in cloud computing providing ad hoc cloud computing environment. In this paper Distributed collaboration term was used for distribution and execution of applications which runs on cloud server to client machine or participating node who can act as a server. This kind of situation mainly occurs ad hoc in offices and laboratories. However, computer resources in offices and laboratories are underutilized, while conventional cloud computing environments composed of dedicated servers are not suited to flexibly deploying application ad-hoc. This can be easily deployed by using SpACCE (Sophisticated Ad hoc Cloud Computing Environment Built by the Migration of Server to Facilitate Distributed Collaboration). In this study SpACCE is proposed by using CollaboTrays for sharingany kind of Application or Service can be distribute for execution to participating nodes which may run on cloud server. By using CollaboTray server can be dynamically migrated to another PC with sufficient calculation capacity. In this paper Author has done experiments on PCs that will have more than 50 percentage of its calculation capacity remaining.

Result in this paper after experiments shows that the migration of the server improves the facility of distributed collaboration even if user works on the client. Author concluded in this paper is that SpACCE environment could contribute effective utilization of untapped PC resources in daily work and then can be used in persistently in cloud computing environments.

III. INTRODUCTION OF TOPIC

Similarly, to these studies, our target is measure the performance of ad-hoc cloud networks by using different ad – hoc network protocols. We are having Performance metrics in much broader size and scope. It performs much more in-depth measurements, compares clouds with other off the shelf clusters. The applications used in our study are closer to the mainstream HPC scientific community. The proposed scheme is tested using ordinarily image processing. From the simulation of the experiment results, we can draw to the conclusion that this method is robust to many kinds of watermark images.

Our performance evaluation results extend and match the previous findings and give more insights into the different protocols used for ad-hoc cloud computing (AODV, DSR, ABR, DSDV etc.). On the other hand scientists begin to adapt the cloud infrastructure for their scientific computing. They run their calculations in the cloud [2], extend clusters on demand with IaaS resources [1] and execute big workflows on a resource mix from traditional grids and clouds [6]. This shows the growing importance of IaaS cloud providers for scientific computing

and the need to have performance estimates for the different offeredtypes beyond the marketing information offered by the providers.

IV. DESIGN OF PROPOSED MODEL

Our main aim of this project to design the simulation model of ad-hoc cloud network using different scenario to evaluate the performance using various performance metrics and ad-hoc protocols; also provide an optimum solution based on the performance analysis results. For this project we are using OPNET Modeler Tool 14.5.We will create three different scenario of ad-hoc cloud network using different types of protocol in each scenario.

Scenario 1:

Cloud services running on ad-hoc network at server side, In other words servers are implemented using ad-hoc cloud network and client machines are in simple network for accessing the cloud services. This ad-hoc cloud network is implemented by following routing protocols separately.

- a) AODV
- b) DSR
- c) ABR
- d) DSDV.

Scenario 2:

Cloud services running on ad-hoc network at server side as well as client side. In this scenario both server and client will have same network structure. This ad-hoc cloud network is implemented by following routing protocols separately.

- a) AODV
- b) DSR
- c) ABR
- d) DSDV.

Figure 1 explains the sample architecture of ad hoc cloud network using OPNET tool

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Figure: 1. Sample Architecture of ad hoc cloud networks using OPNET Simulator 14.5

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TATA COURUS AND HINDALCO- NOVELIS, HINDALCO- NOVELIS AND JINDAL STEEL WORK – ISPAT INDUSTRIES ON SHAREHOLDERS WEALTH: A CASE STUDY ON MERGER AND ACQUISITION*

BY

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Abstract:

Mergers and acquisitions are the norms in today's world where organic growth is not easy out competition is stiff thus to keep in pace with the changing environment and ahead of competitors this route is often sought after. In thus study of the iron and steel industry 3 cases of M&A are considered for our research. In the cases of TATA COURUS and HINDALCO- NOVELIS it has been a strategic decision. Irrelevant of the reason behind the M&A , the effect of the same is reflected by the stock price of the merging entities . the effect of the stock prices is positive if investors consider the merger to be strategically fit and vice versa. We have studied the M&A of steel industry, which are TATA – COURUS, HINDALCO- NOVELIS and JINDAL STEEL WORK – ISPAT INDUSTRIES. Postmerger stock quotes have been taken of all the three mergers and the SENSEX data of NSE equity. After considering this Beta for the entire three companies' CAPM model has been used to calculate the cost of equity. The structure of the paper is as follows.

Introduction, selection, literature review, research methodology industry analysis deal overview, data analysis, interpretation findings suggestions and conclusion.

Keywords: Mergers and acquisition CAPM, BETA, Shareholders gain/wealth, stock risk.

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Introduction:

Mergers and acquisitions are the norms in today's world where organic growth is not easy and competition is stiff thus to keep in pace with the changing environment and ahead of competitors this route is often sought after. we have selected the iron and steel industry wherein 3 M&A cases are considered for our research. In the cases of TATA Corus and Hindalco Novelis it has been a strategic decision. Irrelevant of the reason behind the M & A, the effect of the same is reflected by the stock price of the merging entities. The same is reflected by the stock prices of the merging entities. The same is reflected by the stock prices of the stock prices is positive if investors consider the merger to be strategically fit and vice versa. We have studied the mergers of steel industry, which are Tata corus hindalco novelis and Jindal

steel works ispat industries we have taken post-merger stock quotes of all the three mergers and the Sensex data of NSE equity.

Literature Review:

During the post M & A scenario often the high failure rates are seen. Although research may focus on how to create value in M&A, the high failure rate of M&A remains a recurrent theme. Half or two thirds of all M&A are doomed to fail according to the literature describes how external activities affect integration, but these activities are commonly not results of integration. Prime focus is on effects on speed of integration, not on integration as such.

Markides and Ittner (1994) show that international M&A positively inpact the stock exchange value of the acquiring party. Morosini, Shane and Singh (1998) demonstrate that national cultural distance between companies positively impacts performance relation the discussion on learning, integration and culture to performance. The results in Markides and Ittner (1994) and Morosini, Shane and Singh (1998) may seem a little surprising, they could well be explained by the integration is resisted when distances between firms are large, also implying that risks for failure are larger when companies are strongly integrated.

Seth (1990) deals with value creation in related vis a vis unrelated M&A, Datta (1991) researches how organizational differences impact performance, and Capron (1999) investigates how resource redeployment and asset divestment impact long term performance.

In the case of customers, if they are part of the evaluation scheme, they are mostly used as an aggregate expressed through company revenue growth. In the discussions, customer reactions are not a key concern, but instead revenues are a tool to compare extant and expose size of the M&A parties. Overall, M&A effects on other parties are rarely recognized.

Research Methodology:

The details of research methodology applied are as under:

In this research paper my objective is to study the impact of M&A of iron and steel companies on shareholder's wealth and the risk faced by them post restructuring. I used the sample random sampling and convenient sampling technique for research paper. Target samples are brokers and investors. Sample size is near about 20 brokers. For the calculation part of the research paper I used the CAPM, Beta analysis and Regression techniques. the period taken in to consideration for the analysis is stock price of the acquirer company and price of the Sensex i. e NSE nifty for the date of the respective merges up to next 2 years.

Industry Analysis:

The international iron and steel institute in its forecast for 2008 has predicted that 2008 will be another strong year for the steel industry with apparent steel use increasing form 1,202 million metric tons in 2007 to 1,284 million metric tons in 2008 i.e by 6.8%

. further the BRIC countries will continue to lead the growth with an expected increase in production by over 11% compared to 2007. China remained the world's largest crude steel producer in 2007 also followed by Japan and USA. India occupied the 5th position for the second consecutive year.

Domestic Scenario:
The Indian steel industry have entered into a new development stage for 2005-06, riding high on the resurgent economy and rising demand for steel. Rapid rise in production has resulted in India becoming the 5th largest producer of steel.

It has been estimated by certain major investment houses, such as Credit Suisse that, India's steel consumption will continue to grow at merely 16% rate annually, till 2012, fuelled by demand for construction projects worth US\$ 1 trillion.

The national Steel Policy has envisaged steel production to reach 110 Million tonnes by 2019-20. However, based on the assessment of the current ongoing projects, both in greenfield and brownfield, Ministry of Steel has projected that the steel capacity in the county is likely to be 144.6 million tonnes by 2014-15.

Further, based on the status of MOUS signed by the private producers with the various State Governments, it is expected that Indies, steel capacity would be merely 293 million tonnes by 2020.

Deal Overview:

The Hindalco & Novelis Deal:

Hindalco industries limited, India's largest nonferrous metal company, and Novelis Inc. the woelds leading producer of aluminium rolled products announced on 12th Feb 2007 that they have entered into a definitive agreement of Hindalco toacqure Novelis in an all cash transaction which values Novelis at approximately \$ 6 billion, including approximately \$ 2.4 billion in debt. Under the terms of the agreement, novelis shareholders will receive \$ 44.93 in cash of each outstanding common share. The offer represents a 17 % premium to Novelis Feb. 10 closing price and 49% premium to Novelis share price on Jan 25, the day before Novelis said it as negotiation with potential buyers.

The combination of Hindalco and Novelis ill establish a global integrated aluminium producer with low cost alumina and aluminium production facilities combined with high end aluminium rolled product capabilities. Hindalco is consist increasing its share of value added products, which today stand at nearly 60% . the novelis acquisition gies it an instant leg up with its technologically sophisticated aluminium produsts capability, apart from a scale and global footprint. Hindalco will gain access to markets across the global because novelis operates in 11 countries and is the second largest producer in north America.

Tata Corus:

There is no doubt that tata has pulled off a coup Corus makes nearly four times more steel than tata steel. After a three month long takeover battle, tata steel nudged Brazil's CSN from the race in closed door eight-hour auctioning London by offering price of 608 pence, about 34 percent more than its first offer of 455 pence a share in October last year amounts to £6.2 billion acquisition of corus and co. In a grant leap, tata steels acquisition of the Anglo dutch steel ajor courus has the former to th fifth position form 56th in global steel production capacities of 110 million tonnes, tata courus with a capacity of 23.5 million tonnes, will be only 5-7 million tonnes shy of the next three players Nippon Steel, Posco and JFE steels. At the same time, it will also have players such as baosteel, us steel and ThyssenKrupp breathing down its necking the global sweepstakes.

It could be the largest deal by an Indian company and the largest steel deal ever, aftger Arcelor Mittal. The \$12.1 billion acquisition of the UK based Steelmaker Corus by Tata steels has fetched theIndian Group several awards and recognitions.

It was ranked among the 10 best business deals of 2007 by time magazine. The winners for Asias Best deals of the year awards', published in the latest issue of the CFO Asia Magazine. Tata steel produced more than five million tonnes in the year ending March 2006. It has 3.8 billion in annual turnover Tata steel would emerge as the country largest steel maker, superseding public sector giant Steel Authority of India, with a total capacity of 23 million tonnes a year from the existing 5 million tonnes. SAIL is at the top of the ladder with a production capacity of 14 million tonnes a year. But to make the most of the deal, tata has to manage several variables including steel prices, raw material supplies and interest costs in the \$8 billion debt that is being raised to found the deal.

Jindal and Ispat Deal:

Jindal Steel Works became the country largest steel maker by capacity after announcing a \$3 biliion deal to acquire bebt laden Ispat Industries, this deal took place on 22nd December. Jindal controlled company by 41.3% inIspat through a preferential issue of fresh shares, which reduce the Ispat promoters stake to 26% lenders to ispat owners borrowing by using the strength of its balance sheet.

Ispat Industries is part of the ML Mittal business family to which global steel tycoons Ln Mittal also belongs. At 3.3 million tonne, Ispat industries is amongthe smaller private steel companies and has been targeted by various steel makers for its technology and coastal location which makes it easier to export.

Ispat shareholders had last year approved a proposal to allow lenders to convert at Rs. 14.75 a share. The entry of a large strategic investor into Ipat will strengthen in balance sheet and enable productivity utilisation of this capacity, said Chanda Kochar Managing Director of ICICI, one of the lenders to Ispat. This transaction protects the interests of lenders and enhances value for other stakeholders.

Data Analysis & Interpretation:

Analysis of Covariance, Beta, and use of CAPM Model.

Tata Corus analysis:

Analysis of Covariance and Beta: Return = (Opening return – closing return)/ Closing Return Sum= 2.180 Counts = 973 Average = 0.002241241 Average yearly return of Tata = 67.24 % By finding the cumulative return of Tata and the sensex i.e. NSE Nifty , here returs have been compared.

Interpretation:

The abnormal returns of Tata immediately after the merger till the time period of 1.5 years are increasing. The the abnormal returns have fallendown and then have increased again till date. If we compare the abnormal returns of Tata with that of the Sense than they are more or less similar.

Thus here we can say that due to the merger or the acquisition ther eis no much change in the returns of the company.

Calculation of return by using CAPM Model:

 β = Covriance (Share, Sensex) + Variance (Sensex) Covariance of share ans sensex : - 1.4737205

Variance fo the Sensex = 0.0001282: Beta = -0.1149526 CAPM

 $\mathrm{Ke} = \mathrm{rm} \ \beta(\mathrm{r1m} - \mathrm{r2m})$

We get CAPM : 0.0607526

Interpretation:

Here the abnormal returns with that of got with the abnormal returns according to capm is drastic underperformance of the tata. Here in the beginning the performance is not so less than that of the capm but after a certain period the gap increases.

Hindalco Novelis:

Analysis of Covariance and Beta:

Return= (Opening return - closing return) / Closing Return Sum = 0.978120755

Counts = 934

Average = 0.001047232

Average yearly return of Hindalco = 31.42%

By finding the cumulative return of Hindalco and the Sensex i.e. NSE Nifty, returns have been compared.

Interpretation

In Hindalco tha abnormal returns firstly i.e. form the date of the merger till around one year is increasing. Then after it falls down bout after a certain period it increases slowly as and when time is passing. In comparison with the abnormal return ith the Sensex we can say that the abnormal returns are more or less similar.

Calculation of return by using CAPM Model:

 β = Covariance (Share, Sensex) + Variance (Sensex) Covariance of share ans sensex : 0.000197629

Variance fo the Sensex = 0.00014879: Beta = 1.3282773 CAPM

Ke = rm β (r1m -r2m) We get CAPM : -0.67652

Interpretation:

In this graph if we compare the abnormal return of Hindalco with that of the abnormal return of Hindalco due to Capm then we can see that in the beginning there is a underperformance but it is low. After a certain point the returns get more or less similar but then there is drastic underperformance of the return of HINDALCO.

Jindal steel - ISPAT: Analysis of covariance and Beta Return = (Opening return – Closing Return) / Closing return Sum = -0.02

Counts=77

Average = -0.000259

Average yearly return off Jindal = -7.77%

By finding the cumulative return of Jindal and the Sensex; Nse Nifty here returns have been compared.

Interpretation

In this graph we can represent that there is a variation in the abnormal returns earned. It is sometimes increasing then decreasing then again increasing and so on. But we see that at least it takes a high upper leap and is increasing. As to the comparison with abnormal returns of the Sensex for that same period we can say that they are more less similar and both the lines go hand in hand.

Calculation of Return by Using CAPM Model:

 β = Covariance (Share, Sensex) + Variance (Sensex)

Covariance of share and Sensex: 0.000156521 Variance fo the Sensex = 0.0001568: Beta = 0.998243 CAPM

 $\mathrm{Ke} = \mathrm{rm} \ \beta(\mathrm{r1m} - \mathrm{r2m})$

We get CAPM : -0.027725

Interpretation:

The returns achieved of Jindal are in accordance with the returns achieved through the CAPM mode. It is in line with the CAPM Model, the lines move in the same direction and there is no as such underperformance or above performance except at one stage where in the capm returns are underperformed in comparison with the abnormal returns.

Findings Suggestions and Conclusion:

Findings:

- 1. As the returns of the TATA Corus have increased after the restructuring, so the brokes are more aware of its merger in the market as compared to the other mergers.
- 2. Through our analysis, it is concluded that tata corus is given maximum returns and so it is ranked no 1 by brokers.
- 3. Change is found in first two mergers that is tata corus and hindalco novelis, while similar changes is found in Jindal Ispat, regarding the effect of restructuring on the returns.
- 4. By calculating Beta of Tata Corus which ins negative, shows that Tata share prices are not with the Market Trend.
- 5. Though Hindalco Beta is positive, its share price is going in the same trend as the market but still it lags behind.
- 6. The Beta of Jindal is positive and it is perfect in accordance with the Market Trend.

Suggestions:

1. There is no need for the investors to change their decision regarding equity portfolio by the mergers in the market.

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- 2. Here we can suggest that it does not matter whatever the preference of the investor is for the horizon of the investment, it depends on the reliability of the company.
- 3. Investors can use the concept of beta to know the differences in the return of that particular share in comparison with the returns of the index and can take the investment decisions

Conclusion:

From the calculation of Beta, we have concluded that Tata Corus whose beta is negative is not in accordance with the market trend and thus has high variability Hindalco is going as per the trend and thus has low variability. The merger of Jindal Ispat is in accordance with the market trend. In all the three mergers we can conclude that the abnormal returns achieved form the date of the merger till one year are increasing.

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Vol VIII, Issue III (Winter) 2021 IMPLEMENTING NATIONAL EDUCATION POLICY 2020 IN HIGHER EDUCATION-INTEGRATION OF TECHNOLOGY USING ABC, NETF & NDEAR

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Abstract

National Education Policy (NEP) 2020 is announced by Government of India in July 2020 welcoming various new implementation in different stages of Education. National Education Policy 2020 has opened various new doors of opportunities for all educators. These changes in education system are never seen, experienced by no one. Not only school education but also Higher Education has many changes to adapt, accept and implement. This research paper will focus on implementation of NEP 2020 in Higher education in terms of Impacts and Challenges and implementing it for Academic Bank of Credit (ABC), National Educational Technology Forum (NETF) and National Digital Education Architecture (NDEAR). Welcoming National Education Policy in amidst Covid 19 was never expected but this paper will explain all salient features of NEP 2020.

Keywords: NEP2020, Higher Education, Global Citizen, NETF, NDEAR, ABC

Introduction

National Education Policy 2020 welcomed on 29th July 2020. National Policy on Education (NPE) is policy which is formulated by Government of India to promote and regulate education in India. The policy covers elementary education to higher education both in Rural and Urban area. The First NPE was announced by Government of India when Indira Gandhi was Prime Minister in 1968, then in 1986 when Rajiv Gandhi was Prime Minister which was modified in 1992 and then by Narendra Modi in 2020.

Education is fundamental for achieving full human potential, developing an equitable and just society, and promoting national development. Providing universal access to quality education is the key to India's continued ascent, and leadership on the global stage in terms of economic growth, social justice

and equality, scientific advancement, national integration, and cultural preservation. (htt)(1)

This National Education Policy 2020 is the first education policy of the 21st century and which aims to address many global objectives. The Policy proposes the revision and revamping of all aspects of the education structure, including its regulation and governance, to create a new system that is aligned with the aspirational goals of 21st century education, including SDG4, while building upon India's traditions and value systems. (htt1)(1).

National Education Policy aims to transform education system from 5+3+3+2 combination instead 10+2+3. So, the traditional education will revamp everything and will have new freedom for learners also integrating it to global level.

In this research paper we will discuss about the integration of NETF, NDEAR and ABC.

I. NEP 2020 & Higher Education

As per 21st Century requirements higher education must aim to develop good, thoughtful, wellrounded, and creative individuals. (1) NEP 2020 aims not only for skills but also for values for a global citizen, with the implementation of NEP 2020 in Higher education there are various new amendments to adapt to implements.

National Education Policy 2020 also focuses in Multidisciplinary Universities and colleges, Multiple Entry and exit, Implementation and integration of technologies. Overall Higher education system will ensure integration of professional and vocational education. It also aims towards more holistic, multidisciplinary education in terms of giving opportunities for all like students who have interest in various other activities. A complete holistic development not only incorporated vocational education but also implement soft skills education.

NEP 2020 gives us Imaginative and flexible curricular structures will enable creative combinations of disciplines for study, and would offer multiple entry and exit points, thus, removing currently prevalent rigid boundaries and creating new possibilities for life-long learning. (htt)(1)

When NEP 2020 implementations includes the attainment of Holistic and multidisciplinary goals the flexible and innovative curricula of all Higher Education institutes will also include Credit based courses and projects in the areas of community engagement and services, environmental education and value based education.

With the implementation of NEP 2020 focus is also given on Academic bank of Credits, research scope, establishment of various research centers, library, labs etc.

NEP 2020 in Higher education will also focus on Online Distance Learning (ODL) which will aim to be equivalent for systematic development regulation and accreditation of ODL and implementations will be recommended.

Internationalism of students will be also main focus of NEP 2020. Inviting students to learn here in India and vice versa. The various initiatives mentioned above will also help in having larger numbers of international students studying in India, and provide greater mobility to students in India who may wish to visit, study at, transfer credits to, or carry out research at institutions abroad, and vice versa.

II. Academic Bank of Credits

Academic Bank of Credits enables students' mobility across Higher Education Institutions. It helps in seamless integration of skills and experienced into credit based system. Credits awarded to a student for one program from an institution may be transferred / redeemed by another institution upon student's consent. Credit transfer is the key to successful study mobility. (htt2) (2)

NEP 2020 says an Academic Bank of Credit (ABC) shall be established which would digitally store the academic credits earned from various recognized HEIs so that the degrees from an HEI can be awarded taking into account credits earned. The 4-year programme may also lead to a degree with Research' if the student completes a rigorous research project in their major area(s) of study as specified by the HEI. (htt) (1)

With the implementation of Academic Bank of Credit students can avail Multiple Entry and Exit and also the credits earned will be saved and the credits can be utilized as per the required for the score and to generate the recognition for Couse completion at every different stage

For E.g.: a certificate after completing 1 year in a discipline or field including vocational and professional areas, or a diploma after 2 years of study, or a Bachelor's degree after a 3-year programme. The 4-year multidisciplinary Bachelor's programme, however, shall be the preferred option since it allows the opportunity to experience the full range of holistic and multidisciplinary education in addition to a focus on the chosen major and minors as per the choices of the student. (htt)(1)

Government of India has already initiated Academic Bank of Credit Steps in pictured form are explains as below:

ACADEMIC BANK OF CREDITS Ministry of Education, Government of India		My Account.
	_ <u>_</u>	
Academic Bank of Credits		
Enabling students mobility across Higher Education Institutions Helps in seamless integration of skills and experiences into a Credit	Based system	ABC 3
	How it works?	
Credits get deposited	ABC	Redeem Credits
	Transfer of Credits	
"Credits awarded to a student for one program from	an institution may be transferred / redeemed b	y another institution upon students consent"

Step 1: Government of India portal for Academic Bank of Credit

Above image is available on source: https://www.abc.gov.in/

Step 2: In above image at right hand corner by clicking under My Account Tab we can register as students or Institution.



Above image is available on source: https://www.abc.gov.in/

Step 3: As per the requirement as Students if we want to register then we can add credentials for the same and then



Students's Registration

Institute Registration

Above image is available on source: https://www.abc.gov.in/

Once you register as Student all documents from Digilocker which are sinked/uploaded/need to be uploaded will be utilized in Academic Bank of Credit whereas as we know that only NAC approved Institutes can register in Institute tab for which NAD i.e. National Academic Depository will be used for management of all database.

There are enormous advantages of using Academic Bank of Credit.

III. Integration of Technology using NETF

We all know and understand and education in 2021 has its own challenges for implementations but with the changing scenario everywhere now smart phones are available and the idea which was never thought of having school also online on your smart phone was witnessed and experienced by many. Integrating technology in education is always the need of an hour as every time technological requirements changes and keep us aware of updating oneself.

NEP 2020 implementation also focuses on integrating technology in education with easier way to use and integrate all on one platform like school, teachers and parents.

The NETF will provide independent evidence-based advice to Central and State Government agencies on technology-based interventions. It will also build intellectual and institutional capacities in educational technology, envision strategic thrust areas in this domain, and articulate new directions for research and innovation. (htt3) (4)

As discussed that technology implementation require every time up gradation of knowledge, incorporating technology, implementing and finalising its usage via continuous training,

So, National Education Policy 2020 envisage setting up of an autonomous body - National Educational Technology Forum (NETF) to provide a platform for free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration and so on, both for School and Higher Education. The aim of the NETF will be to facilitate decision making on the induction, deployment and use of technology by providing to the leadership of education institutions, State and Central Governments and other Stakeholders the latest knowledge and research as well as the opportunity to consult and share best practices. (htt4) (6)

The formation of National Educational Technology Forum (NETF) to provide a platform for the free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration. (htt5)(5)

The NETF will maintain regular flow, monitoring on all activities and up gradations at various levels of State and Central.



Source: <u>https://www.linkedin.com/pulse/netf-use-integration-technology-nep-2020-ramesh-pokhriyal-nishank</u>

IV. Integration of Technology using NDEAR

The National Digital Architecture was announced by Hon'ble Prime Minister Narendra Modi in February 2021. Implementation of National Digital Architecture and NEP 2020 integrating with technology to boost digital architecture of education.

A globally pioneering effort in education - A unifying national digital infrastructure to energies and catalyze the education ecosystem

evolving NDEAR is federated. unbundled. interoperable, inclusive, accessible, which aims to create and deliver diverse, relevant, contextual, innovative solutions that benefit students, teachers, parents, communities, administrators and results in timely implementation of policy goals. (htt6)



Fig; NDEAR Principles (source: <u>https://www.ndear.gov.in/index.html</u>)

National Digital Architecture is to energies and catalyze the education system; there are different

principles for NDEAR as mentioned in above diagram like Unifying not uniform, Ecosystem Driven, unbundled and Combinable, federated but interoperable, Address Open Access, Leverage Investment, Privacy, Security trust by design, Provide choice by design, evolvable, Address Diversity inclusion and special needs.

NDEAR will enables us to provide Coherent Multi Channel, Multimodal and Learning Continuum which can be further sued linking to schools, after schools, at community centers, at home for synchronous and asynchronous, Offline or Online, Physical or digital and Self Service or assisted.



HW/SW INFRA: Smartboards, Tablets, Live Conferencing, Hosting Infra, SMS, Email, Digilocker, JAM CONNECTIVITY: Satellite, TV, DTH, Cable, Bharat Net, WiFi, Mobile Network

Fig: NDEAR multidimensional working connecting all.

(Source: https://www.ndear.gov.in/index.html)

Challenges Implementing NEP 2020

- 1. As per NEP 2020, to open more universities with monitoring proper execution and expenses, enrollment of students can be biggest challenge in implementing it for Higher Education.
- 2. For multidisciplinary education, integration of technology continuous training and creating large pool of trainers is a big challenge.
- 3. After Covid strike to come out of financial load and increasing GDP from 4.6% to 6%.
- 4. Interdisciplinary education implementation from cultural shift.
- 5. Internationalism, implementation execution of the NEP 2020 with Academic Bank of Credit where some universities will not be part of it.

Conclusion:

Implementing NEP 2020 gives the elaborative framework for the implantation of the various structures of Education system at the best. NEP 2020 comprises of various opportunities, Internationalism, opening various universities, massive change in the integration of technology and training.

Emphasis on examination system will surely affect not only for skills and also for values. More focus for relational language, vocational education and with humanities related subject.

NEP 2020 will also have integration of technology in Academic Bank of Credit, NETF and NDEAR will definitely give many opportunities for the better opportunities for Institutions, students and Parents.

The great transformation of the education system will be by 2030 if jointly we can achieve it to become superpower country.

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A Review Paper of Manet and Cloud Computing

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Abstract:

Ad hoc cloud computing environment providing a way to distributed collaboration. Now days distributed collaboration is become a need in offices and laboratories. However, computer resources and in offices and laboratories are under – utilized, while conventional cloud computing composed of dedicated sever are not suited to flexibly deploying application adhoc. In this work we have done the literature reviews of Mobile Ad hoc network protocols (MANET) like Ad-hoc On Demand Distance Vector (AODV), Destination Sequenced Distance Vector Algorithm (DSDV), and Improved Destination Sequenced Distance Vector Algorithm (I-DSDV). This paper also includes literature review of a cloud computing & its performance analysis through simulation models. Simulation results show that I-DSDV compared with DSDV, it reduces the number of dropped data packets with little increased overhead at higher rates of node mobility but still can't compete with AODV in higher node speed and number of node. Similarly, to these studies, our target is measure the performance of ad-hoc cloud networks by using different ad – hoc network protocols using OPNET Simulator 14.5.

Keywords: Mobile Ad hoc-network protocol, ad hoc cloud computing, performance analysis, simulation models, OPNET 14.

I. INTRODUCTION

The cloud computing is a new computing model which comes from grid computing, distributed computing, parallel computing, virtualization technology, utility computing and other computer

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technologies and it has more advantage characters such as large scale computation and data storage, virtualization, high expansibility, high reliability and low price service. Cloud computing is the use of hardware or software resources that are delivered as service over network. Ad-hoc network: Definition: "Ad Hoc network is a self-organizing multi-hop wireless network, which relies neither on fixed infrastructure nor on predetermined connectivity".

The decentralized nature of wireless ad-hoc networks makes them suitable for a variety of applications where central nodes can't be relied on, and may improve the scalability of wireless ad-hoc networks compared to wireless managed networks, though theoretical and practical limits to the overall capacity of such networks have been identified. Ad- hoc cloud computing means allow cloud services to run on existing heterogeneous hardware. In other words, running cloud services on ad-hoc network. Computational and storage resources within organizations are often under-utilized. By using this concept, we can increase the utilization of general purpose computers & other hardware devices.

II. LITERATURE REVIEW

There has been a branch of research activity in assessing the performance of virtualized resources, in cloud computing environments and in general. In paper [13] work is only specific to EC2 of Amazon web services. In this work performance analysis are categorized in two methods i.e. Cloud specific evaluation and Infrastructure uncertain evaluation. In cloud specific evaluation, the duration of resource acquisition and release over short time and long periods of time.

In Infrastructure uncertain evaluation they have designed two methods of workload i) SJSI (run one or more Single process jobs on single instance). ii) MJSI (Single misprocess jobs on multiple instances). Also they have done the analysis of Resource acquisition and release, Single instances, multiple instances, Performance of SJSI workloads, Compute Performance, I/O Performance Memory Hierarchy Performance, Performance of MJMI workloads, reliability, HPL performance.

In [15] paper author has focused on performance comparison analysis with low cost with different QoS. This paper has considered the three factors i.e. Network bandwidth, Quality of Service and Cost. The main objective of this paper is performance comparison analysis with low cost with different Quality of Service. This framework is implemented by OPNET SIMULATION Model 14.5.

In study [14] author has considered mainly three protocols that are AODV (Ad-hoc on demand distance vector), DSDV (Destination Distance Vector Algorithm) and I-DSDV (Improvement of DSDV). These Protocols are ad-hoc network protocol which is used to designed ad-hoc network. In the above paper, Performance analysis of ad-hoc network protocols (AODV, DSDV, I-DSDV) was done by using NS-2 simulation model and compared in terms of Packet delivery ratio, end to

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end delay, routing overhead in different environment like varying number of nodes, speed and pause time.

QoS is the major factor of service performance, which determines the degree of satisfaction of user. There are two concerns of service a) Technology Oriented b) Service oriented .In this work the degree of satisfaction is expressed by the following qualitative measures.

- a) End–to–end delay
- b) Delay variations
- c) Throughput

The process of providing these QoS requirements is called as Provisioning. Some of the main importance of QoS Provisioning is:

- a) Traffic can be differentiated and provided different levels of service.
- b) The amount of traffic network can be controlled based on the resources.
- c) QoS make it possible to implement the policies across devices and end users.

d) QoS can enable networks to deliver defined levels of service with existing network infrastructure.

This main objective in this paper was Investigate an alternative real time distribution and delivery method for multimedia applications such as live video streaming, live TV, Video on demand using on demand cloud as a service.

In paper [16], Comparison of two on demand routing protocols for mobile & ad-hoc networks has been done. Protocols used for these comparisons are AODV, DSR and traditional protocol DSDV. A variety of workload has been tested in this paper like mobility, load and size of network in given scenario. This simulation model has been created by using NS-2 simulator. In this paper, simulation results and observations are carried out by following factors.

- a) Packet delivery fraction (PDF).
- b) Average End-to-End delay result.
- c) Routing overhead.
- d) Packet loss as a function of pause time

After result observation author concluded that, AODV and DSR are reactive protocol, while DSDV is proactive protocol. Both reactive protocols performed well in this scenario. DSR generates lower overhead than AODV while DSDV generates almost constant overhead due to

proactive nature. DSR has given poor performance in respect of that, Average delay can be accounted to aggressive use of caching and inability to delete state route. DSDV provided high mobility results in frequent link failures and overhead involved in updating all the nodes with new routinginformation. DSR consistently generates less routing load than AODV.

In paper [17], Cloud security challenges and solutions have been discussed with the help of literature reviews and simulation model created by OPNET TOOL to produce useful statistics to provide optimal security and compliance. By using simulation results author demonstrated that UTM (Unified threat management) may not be feasible solution for security implementation of cloud. Multi cloud model is created by using OPNET Modeler. Model architecture contains –

- a) Internet domain with high connectivity switch (1500 concurrent user can connect.
- b) UTM cloud model with cloud infrastructure with security.
- c) All clouds are internetworked using high end switches with ATM OC-48 links.

d) Seven applications configured with some built in parameters like RDBMS service with high load, Antiviruses and Antispyware applications, Web services with high load data service etc.

After successful creating & running simulation model results were carried out and it was observed by author that, cloud computing security issues can be investigated with special emphasis on governance of security and compliance from the perspective of user companies as well as cloud service provider. Some literatures recommended by NIST (National Institute of Standards and Technology) states that cloud security should be hosted as a service oriented framework and the accountability should with separate security as a service. However, in this paper a report by Gartner recommends that visualization security cannot be implemented in centralized manner following the UTM approach. The simulations results in this paper carried out are supporting Gartner recommendations.

In paper [18], BI and OLAP services along with cloud application have been created by using OPNET Simulation TOOL. The network was design in such a way that loads can be evenly distributed to all RDBMS servers. The application has been configured in a way that all RDBMS server can evenly involve in receiving and processing the OLAP query load. The cloud model in OPNET Simulator comprises two large domains that are BI on the cloud domain and Extranet domain consisting six corporates having 500 OLAP users in each corporate.

BI on the cloud domain is expanded with four CISCO 7609 router so that they can evenly distribute the load. After creating the model simulator were run and results are carried out & observed. Hence In this paper, Author concluded that cloud computing can be implemented in three ways a) Software as-a-Service b) Platform as-a-Service c) Infrastructure as-a-Service. These services may provide depending upon the business requirements. However, SaaS provider

needs the settings on Paas and Iaas. In this study, Results have been reflected the ideal scenario for taking BI on cloud. However, Real clouds will not have ideal configuration as made in the OPNET Modeler. Hence real challenges on cloud needs to be identified and addressed to ensure that results can be brought closer to ideal scenario as far as possible.

In study [19], Author has mentioned the way to distribute the load of server in cloud computing providing ad hoc cloud computing environment. In this paper Distributed collaboration term was used for distribution and execution of applications which runs on cloud server to client machine or participating node who can act as a server. This kind of situation mainly occurs ad hoc in offices and laboratories. However, computer resources in offices and laboratories are underutilized, while conventional cloud computing environments composed of dedicated servers are not suited to flexibly deploying application ad-hoc. This can be easily deployed by using SpACCE (Sophisticated Ad hoc Cloud Computing Environment Built by the Migration of Server to Facilitate Distributed Collaboration). In this study SpACCE is proposed by using CollaboTrays for sharingany kind of Application or Service can be distribute for execution to participating nodes which may run on cloud server. By using CollaboTray server can be dynamically migrated to another PC with sufficient calculation capacity. In this paper Author has done experiments on PCs that will have more than 50 percentage of its calculation capacity remaining.

Result in this paper after experiments shows that the migration of the server improves the facility of distributed collaboration even if user works on the client. Author concluded in this paper is that SpACCE environment could contribute effective utilization of untapped PC resources in daily work and then can be used in persistently in cloud computing environments.

III. INTRODUCTION OF TOPIC

Similarly, to these studies, our target is measure the performance of ad-hoc cloud networks by using different ad – hoc network protocols. We are having Performance metrics in much broader size and scope. It performs much more in-depth measurements, compares clouds with other off the shelf clusters. The applications used in our study are closer to the mainstream HPC scientific community. The proposed scheme is tested using ordinarily image processing. From the simulation of the experiment results, we can draw to the conclusion that this method is robust to many kinds of watermark images.

Our performance evaluation results extend and match the previous findings and give more insights into the different protocols used for ad-hoc cloud computing (AODV, DSR, ABR, DSDV etc.). On the other hand scientists begin to adapt the cloud infrastructure for their scientific computing. They run their calculations in the cloud [2], extend clusters on demand with IaaS resources [1] and execute big workflows on a resource mix from traditional grids and clouds [6]. This shows the growing importance of IaaS cloud providers for scientific computing

and the need to have performance estimates for the different offeredtypes beyond the marketing information offered by the providers.

IV. DESIGN OF PROPOSED MODEL

Our main aim of this project to design the simulation model of ad-hoc cloud network using different scenario to evaluate the performance using various performance metrics and ad-hoc protocols; also provide an optimum solution based on the performance analysis results. For this project we are using OPNET Modeler Tool 14.5.We will create three different scenario of ad-hoc cloud network using different types of protocol in each scenario.

Scenario 1:

Cloud services running on ad-hoc network at server side, In other words servers are implemented using ad-hoc cloud network and client machines are in simple network for accessing the cloud services. This ad-hoc cloud network is implemented by following routing protocols separately.

- a) AODV
- b) DSR
- c) ABR
- d) DSDV.

Scenario 2:

Cloud services running on ad-hoc network at server side as well as client side. In this scenario both server and client will have same network structure. This ad-hoc cloud network is implemented by following routing protocols separately.

- a) AODV
- b) DSR
- c) ABR
- d) DSDV.

Figure 1 explains the sample architecture of ad hoc cloud network using OPNET tool

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Figure: 1. Sample Architecture of ad hoc cloud networks using OPNET Simulator 14.5

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"Impact of General Election on Stock Exchange with special reference to BSE and NSE index in INDIA"

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Abstract

This study was carried out by considering the movement of the two major Index of stock markets in India called SENSEX and NIFTY of BSE and NSE stock exchanges. For the analysis of the impact of general election on the stock market, the period was considered as of thirty-day span before and after the election. and checked the volatility of return during the selected period of elections. The data was collected for 3 months before and after the last 5 loksabha election related to NSE & BSE. To make the study fruitful data were considered the last five loksabha elections in India to find out the exact impact and to prove the objective of the paper. The authentic source of the date are the websites of NSE and BSE, RBI, Money control etc. To analyze the impact, used the model in which we analyse the opening values and the closing values of stock markets index during the election period and accordingly the return and the volatility of return is calculated. By doing the study it is noticed that there is significant impact of general election on the performance of stock market and its index.

Keywords: BSE, NSE, Volatility, SENSEX, NIFTY etc.

Introduction:

The performance of stock exchanges in the world had some correlation with the major news which had impact on the economy of the country or on the industrial front. The research paper is articulated to find out the impact of the news on the performance of the performance of the share market. In India there were 21 stock exchanges but majorly two stock exchanges are having a wide presence in Indian stock market. Bombay stock Exchange and National Stock Exchange both exchanges had a huge presence in the Indian Stock Market with 5000 plus companies listed in BSE and more than 1600 companies listed in NSE. Bombay stock exchange hand an index called SENSEX and National Stock Exchanges simultaneously. For the companies which had listed on National Stock Exchange and Bombay Stock Exchange must have minimum issue and paid up equity capital of Rs.3 crores with profit making track record. There higher no. of companies listed on the stock markets which is directly connected with the economy of India.

The performance of the two indexes called SENSEX and NIFTY is depending upon the market value of the companies which are listed in stock exchanges. Vise a versa the performance of the industry is

directly proportional to the economic reforms, financial stability of the country, political stability, social factors, fiscal policies, security of the country, GDP, trade policies, stable government etc.

The research was driven to find out the impact of the various factors on the performance of the stock market. In previous research there were significant impact found out by the researchers but haven't proved any significant relationship between the general election and the performance of the stock markets and its index. This study was carried out to fulfil the gap between the previous research. The stable government will be the foremost important for any country to progress in addition to that if the government comes with the majority it must be added advantage as the decision making for the country will become easier. For the research, last 4 Loksabha elections had considered to analyze the impact of General Election on the stock market. The analysis was based upon the performance of the indexes which were considered for the study. In the study the performance of the index and the result of general election were correlated by considering the stable government as important factor.

Literature Review:

There was various research literature were published which help to find out the path of research and to decide the exact research methodology applicable to analyze the collected data.

Prof. G. Sudarsana Reddy, 2018, "Impact of General Elections 2014 on Indian Stock Market with Special References to the Stock of Select Companies in BSE", The research paper aims to study the effect of general election on the returns from stock market before and after election result with special reference to specific selected companies. Under his research he found that there is positive impact on the performance of stock market. During the election period the market were more volatile, the risk factor was more. The study suggested the investor community should carefully plan and invest during general election period. Mange RN, 20142, "Effects of elections on stock market returns at the Nairobi Securities Exchange", studied the impact of general election result on the share performances of national stock exchange listed companies. The study concluded with the observation that the market return was good predictor of stock returns, the important outcome was the return were higher before election than after election period. Panandiker, 20143, had done PHD on "How election years affect the stock market", found that the rupee increase as compared to dollar with three months high. In that election year the stock market had higher returns, SENSEX was jumped nearly 17 percent and after 3 month of election again jumped by 6.4 percent. Ling-Chun Hung, 20114, described that the history proved that the politics and the economic reforms had a huge impact on the return from stock markets. Snowberg, Wolfers, and Zitzewitz, 20075, he studied the effect of general election on equity prices, oil prices, nominal and real interest rates and dollar values and found out the positive relation with election outcome. Khemani , 20106, Introduced the concept of correlation between the public Infrastructures spending in various states with different otter turnout and good or bad governance and found out the negative relation which was against the hypothesis of their study. Ch. Balaji, G.D.V. Kusuma, B. Ravi Kumar, 20187, "Impact of General Elections on Stock Markets in India", had compared the return from the stock market by analyzing the movement of Index of respective stock market for last 5 loksabha elections. The research paper were concluded with the findings that the impact of election were high on short term, moderate on midterm and less on long term. But as in our study which were specifacilly found out the impact within the period of 30 days before and after as it gives the exact correlation between the election outcome and performance of stock market.

Objective:

The objective of the paper is to analyze the impact of Presidential Election on the performance of the stock market and to examine the volatility of the return and the movement of SENSEX and NIFTY, thirty days before and after the result.

Hypothesis:

H1: There is a Significant Impact of election result on the movement of stock market index i.e. SENSEX & NIFTY.

H2: There is significant impact of election result on the volatility of stock market.

Scope of Study:

The Research analysis is specifically emphasis to find out the impact of election result on the movement of stock index of selected stock markets. The research considered the last 5 assembly elections for analysis.

Limitation:

- 1. There was some limitation to show the data and its relevance with the political environment related to the overall performance of the stock markets in India.
- 2. Exact data collection for the selected period was tedious task and was not easily available.
- 3. There was a bit of variation in the data collected from various sources but still managed to take out the best possible data for study.

Research Methodology:

The opening and closing index of BSE & NSE has been collected for a period of 30 days before election and after election i.e. total 60 trading days for last 5 loksabha elections.

The secondary data is collected from yahoo finance, money control, SEBI, Official websites of BSE and NSE for analysis purpose.

The set of data were collected to analyze the fluctuation of index just before election and after election result. The period of data collection was 30 days before election and 30 days after election i.e. 60 trading days.

The model was created to match the objective and to prove the hypothesis of the study

Model:

The return from the market is calculated by the arithmetic equation,

 $\mathbf{R} = \mathbf{C}_{st} - \mathbf{O}_{st}$

Where, R: Return for a month Cst: Avg. closing stock of month Ost: Avg. opening stock of the month

The volatility is calculated by using the arithmetic equation,

 $\partial = \sqrt{(\Omega/n)} 2$

Where, ∂ : Volatility of Return Ω : Avg. of Percentage of return n: Number of days

The standard deviation and variances during the selected time frame i.e. 30 days before election and 30 days after election for last 5 loksabha election is calculated.

Data Analysis:

1. Movement and volatility of NSE Index in the month before assembly election for last 5 elections.

Year of Election	Month of Election	Avg. of Opening index for 30 days before election	Avg. of Closing index for 30 days before election	Return	Percentage of Return
1999	Sept-October	1482.15	1546.2	64.05	4.14
2004	April - May	2035.9	1902.5	-133.4	-7.01
2009	April - May	3023.85	3473.95	450.1	12.96
2014	April - May	6729.5	6696.4	-33.1	-0.49
2019	April - May	11665.2	11748.15	82.95	0.71
Mean	86.12		Volatility of	0.3	276
Return	80	.12	Return	0.376	

Table No. 1

2. Movement and volatility of NSE Index in the month after assembly election for last 5 elections.

Year of Election	Month of Election	Avg. of Opening index for 30 days	Avg. of Closing index for 30 days	Return	Percentage of Return
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		after election	after election		
1999	Sept- October	1178.25	1268.15	89.9	7.09
2004	April - May	1483.9	1505.6	21.7	1.44
2009	April - May	4450.4	4291.1	-159.3	-3.71
2014	April - May	7264.05	7611.35	347.3	4.56
2019	April - May	11852.4	11839.0	-13.4	-0.11
Mean Return	57.24		Volatility of Return	0.3	377

Table No. 2

Interpretation:

- a) The Table 1 and 2 shows the average return for 30 days before and 30 days after the last 5 general elections. It shows that the returns for year 2004 and 2014 before elections are negative and as the election took place the index shows the growth in return. For year 2009 and 2019 have negative returns after general elections for NSE.
- b) The table 1 and table 2 shows that the market index of NSE is fluctuated before and after the general elections during last 5 general elections. The volatility of the market before 30 days of election is 0.37 and after the election is 0.33.
- c) The decrease in the volatility of the index for NSE were shown by the above analysis as the volatility is towards negative value (-10.1861 approx.), which shows that the range of variation in the index decreased tremendously during the period of 30 days before and after the date of last 5 general elections. That is there is a negative impact of general election on the NSE stock market index.
- 3. Movement & volatility of BSE Index in the month before assembly election for last 5 elections.

Year of Election	Month of Election	Avg. of Opening index 30 days Before election	Avg. of Closing index 30 days Before election	Return	Percentage of Return
1999	Sept-October	3,266.71	3,102.29	-164.42	-5.30
2004	April – May	5,979.25	5,655.09	-324.16	-5.73
2009	April – May	11,492.10	11,403.25	-88.85	-0.78
2014	April – May	22,939.31	22,417.80	-521.51	-2.33
2019	April – May	38,748.54	38,672.91	-75.63	-0.20
Mean Return	-234.914		Volatility of Return	0.5	239

Table No. 3

Year of Election	Month of Election	Avg. of Opening index 30 days after election	Avg. of Closing index 30 days after election	Return	Percentage of Return
1999	Sept-October	3,954.26	4,140.73	186.47	4.50
2004	April – May	4,792.01	4,795.46	3.45	0.07
2009	April – May	14,746.51	14,493.84	-252.67	-1.74
2014	April – May	24,368.96	25,413.78	1,044.82	4.11
2019	April – May	39,806.86	39,394.64	-412.22	-1.05
Mean Return	113.97		Volatility of Return	0.2	154

4. Movement of BSE Index in the Month after Assembly election for last 5 elections.

Table No. 4

Interpretation:

- a) The table 3 & 4 shows the fluctuation in the return from BSE for after the last 5 general elections in India. The table 3 shows that for all the years of general election the returns from BSE is on negative side before 30 days of election. Table 4 shows that the return after election for year 1999, 2004 and 2014 was positive. For year 2014 the impact of general election on BSE index was very high that gives highest returns to the investors as compared to 2019.
- b) The table 3 and table 4 shows that the market index of BSE was fluctuated before and after the general elections during last 5 general elections. The volatility of the market before 30 days of election is 0.52 and after the election is 0.21.
- c) The decrease in the volatility of the index for BSE is shown form the above analysis as the volatility was towards negative value (-58.885approx.), which shows that the range of variation in the index decreased tremendously for the 30 days before and after the date of last 5 general elections. That is there is a negative impact of general election on the BSE stock market index.

From the above analysis we can confirm that the H1 & H2 is accepted by the research. There is a significant impact of general election on the movement and the volatility of the index of both the stock exchanges of India i.e. BSE & NSE.

Findings:

The NSE index NIFTY shows the moderate movement during the 30 days before and after general election. The return from the NSE were decreased in the 30 days of general election as compared to the 30 days before the election.

The BSE index i.e. SENSEX shows huge movement during the 30 days before and after general election. The return from the BSE were increased after 30 days of general election as compared to 30 days before election.

The NIFTY & SENSEX shows the reverse impact of general election on the return. The return for NSE is decreasing i.e. 86.12 average returns to 57.24 average return or variation. But the return from BSE were increasing i.e. form -234.914 average return to 113.97 average return or variation.

The volatility of return through the NSE is decreased during the 30 days after and before the general election in India. This shows that the risk associated with the market increased. The 30 days' period for NIFTY before and after the elections is very fluctuating. Investors are doing their investment as per the parties who are going to lead Indian Government. For year 2014-2019 the Nifty shows slight improvement in volatility of return. As compared to 2014 the average return was -33.1 before election but it increased above 350 after the election. Which shows the faith on investors on BJP government leaded by PM. Narandra Modi.

The volatility of return through BSE is more pleasing than NSE. The BSE index is more volatile to the general election. It shows that the BSE return after election is negative. The growth of the SENSEX is very sensitive towards the election. For general election 2014 BSE showed huge positive response towards the upcoming ruling party as compared to the 2019.

From the above research and analysis it seems that the NSE i.e. National Stock Exchange is less volatile to the impact of general election as compared to BSE i.e. Bombay Stock Exchange. BSE index SENSEX is more responsive towards the general election for last 5 sessions.

Both the hypothesis H1 and H2 is accepted by the research which showed that there was an impact of general election on the movement and the volatility of the return form stock markets in India.

Conclusion:

The movement of the index of all the stock exchanges of India i.e. NIFTY & SENSEX is showed some responses towards the impact of general elections in India. Sometime the Index showed positive or sometimes shows negative movement for some elections. But on an average the impact is positive and the index of both the stock exchanges shows the impact of general elections on the movement of Index and volatility of return.

It has been seen that the impact also increased and decreases according to the political party's dominance in the election. In year 2014 and 2019 the election in India is dominated by BJP under the leadership of PM. Narandra Modi. It seems that in these years the index showed the increasing trend as compared to the previous years in my study.

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ANVESAK ISSN : 0378 – 4568 **UGC Care Group 1 Journal IMPACT OF CIVID 19 ON INDIAN ECONOMY DURING 2020-2021 AND ITS RECOVERY**

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Abstract:

During the COVID 19 Pandemic in the world the economy was in a great depression. Still most of the country are struggling to come out of the COVID 19 impact on their economy. The research paper is focused on the impact of the pandemic on the Indian economy by considering various parameters which defines the economic condition of any country. The study considered the long-term and short-term impact on the Indian Economy. Overall the world GDP is showing the negative growth during the last one year and the India is the one who impacted most. To analyse the data comparative analysis was used. the forecasting for the future impact of COVID 19 on Indian economy various forecasting techniques were used such as straight line, moving average, simple linear regression etc. Various sectors of economy were considered to show the impact and also studied the economic reforms policy framework of government in this regards.

Keywords: Indian Economy; GDP; Employment; Per Capita Income; Economics & Strategy; Economic Downturn; Social Disruption; World Economy;

Introduction:

Ever since the outbreak of COVID 19 in the world, number of analysists and experts in the world are in race to find out the impact of the pandemic on the world economy or on the individual countries. The outbreak of COVID 19 Virus starts in the last few months of 2019 from China. It will take 3 to 4 months to spread thorough the world. In India the first case was found in the Month of March 2020 and from that point the impact of virus were increasing continuously. During the lockdown, all places of worship were closed. There was the prohibition of social, cultural, entertainment, and religious activities. The work from home is allowed for commercial and private firms. Only essential services like Bank, hospitals, pharmacies, grocery stores, and other essential services were permitted to operate. From June 01, 2020, to June 30, 2020(30 days), Unlock 1.0 was implemented in India. From July 01, 2020, to July 31, 2020, India has passed from the second phase of unlocking Unlock 2.0.¹

Literature Review:

To study the impact of COVID 19 on Indian economy various sources and research publication were referred. Various authors worked on the same topic to find out the impact by considering various parameters. One of the research paper titled Covid-19 and Its Impact on Indian Economy furnishes the policy framework of government to tackle the impact of COVID 19. ² One more research paper who discussed the impact of the COVID 19 on economy found that the coronavirus pandemic has paralysed the Indian economy to a great extent, affecting almost all macro variables of the economy negatively. Although, we might not know the exact impact of the virus on the Indian economy until the pandemic is over, it is certain that the country would have a hard time coping with the deep recession complemented with a sharp fall in the GDP and surge of the unemployment rate in the country. There should also be a temporary increase in the quantity of food distribution to ensure the food security of the vulnerable groups. Given the limited nature of available resources and other limitations, the policymakers in India have to carefully weigh the policy options and choose only

¹ The Impact of COVID-19 Epidemic on Indian Economy Unleashed by Machine Learning, Kamal Deep Garg1, Manik Gupta2* and Munish Kumar3. ICCRDA 2020, IOP Conf. Series: Materials Science and Engineering, 1022 (2021) 012085, doi:10.1088/1757-899X/1022/1/012085

² Covid-19 and Its Impact on Indian Economy, Shubhi Agarwala*, Archna Singhb, International Journal of Trade & Commerce-IIARTC January-June 2020, Volume 9, No. 1 pp. 72-79

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those that have the largest payoffs in the short-run as well as long-run.³ Another paper considered the electricity consumption and night-time light intensity to find out the We then quantified the drop in electricity consumption in response to the COVID-19 pandemic and the national lockdown, which the Indian authorities implemented from March 25 onwards. Compared to predicted consumption based on a model explaining 90 percent of the variation in electricity consumption, actual electricity consumption declined around 20 percent shortly after the lockdown was implemented.⁴ Covid-19 has posed an unprecedented challenge for India. The eventual damage to the economy is likely to be significantly worse than the current estimates. The balance struck so far seems to be a reasonable one but the government needs to find a greater scope for supporting the incomes of the poor. Involvement of the state and local governments may also be crucial in the effective implementation of further fiscal initiatives.⁵

Research Methodology:

To analyse the impact of the COVID 19 on the Indian Economy the comparative analysis was done between the data collected for the year 2019-20 and 2020-21. The data analysis was on the basis of various sectors such as FMCG, AVIATION, FINANCIAL SERVICESES, HOSPITALITY AND TOURISUM INDUSTRY, AUTOMOBILE were considered.

Secondly to confirm the impact of COVID 19, the study considered the various factors which contributes to analyse the economic condition and performance as a whole such as GDP, Export Import, Inflation, Interest Rates, Employment rate, Industrialization rate etc.

Objective:

- 1. To find out the impact of COVID 19 on the various industrial sectors of Indian Economy.
- 2. To find out the impact of COVID 19 on by using the various parameters of Indian Economy.
- 3. To study the various corrective actions and policies taken by the Government of India.

Data Analysis & Interpretation:

Section I:

In the first section of the analysis the impact of COVID 19 pandemic on the various selected industries were analysed.

Impact on FMCG sector of Indian Economy:

The FMCG sector is divided into three major sections Food and Beverages, Healthcare, Household and Personal care. The food and beverages sector contribute 19% to the sector; Healthcare contributes 31% and household and personal care contributes 50%. During the pandemic situation the FMCG sector shown the upward performance and market rose by 7.1%. The Indian Grocery market exceed by Rs. 22,500 cr. in 2020 as significant jump by 76% as compared to previous year 2019. Growing awareness and easier access and changing lifestyle are the key growth drivers for the consumer market.

Impact on Tourism & Hospitality Industry:

During COVID 19 Pandemic Because of the restriction forced by various countries on travel from one country to other due to the outbreak of COVID 19. To boost the industry, post COVID 19 the Ministry of tourism has created a policy for development and promotion of caravan and caravan camping parks in kargil to promote adventure tourism and winter sports. India's GDP is expected to increase from Rs. 15.24 lakh crore (US\$ 234.03 billion) in 2017 to Rs. 32.05 lakh crore (US\$ 492.21 billion) in 2028. Total earning from the sector in India is targeted to reach US\$ 50 billion by 2022.

Impact of COVID 19 on Automobile Industry:

The passenger vehicle sales declined by 50%, commercial vehicles to 88% two wheelers by 40% and three wheelers by 60% as compared to pre COVID 19 sales. The total size of Indian automotive

³ IMPACT OF COVID-19 ON THE INDIAN ECONOMY, Article DOI:10.21474/IJAR01/11461 DOI URL: http://dx.doi.org/10.21474/IJAR01/11461

 ⁴ Examining the Economic Impact of COVID-19 in India through Daily Electricity Consumption and Night-time Light Intensity, Robert C. M. Beyer Sebastian Franco-Bedoya Virgilio Galdo, Policy Research Working Paper 9291.
⁵ Covid-19: Impact on the Indian Economy, S. Mahendra Dev and Rajeswari Sengupta, Indira Gandhi Institute of Development Research, Mumbai April 2020

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sector is 21550494 unites with degrowth in 2020. Two wheelers and passenger cars accounted for 80.8% and 12.9% market share, respectively, accounting for a combined sale of over 20.1 million vehicles in FY20. In February 2021, the Delhi government started the process to set up 100 vehicle battery charging points across the state to push adoption of electric vehicles. Under NATRiP, the Government of India is planning to set up R&D centres at a total cost of US\$ 388.5 million to enable the industry to be on par with global standards. On 29th July 2019, Inter-ministerial panel sanctioned 5,645 electric buses for 65 cities.

Impact of COVID 19 on Aviation Industry:

The Indian aviation industry in growing compounded annually by 11.13% rate. But during the financial year 2020-21 the airports in Indian airports faces the traffic decrease by -53.4 million i.e. by 62% over the fiscal ended March 31, 2021. The average passengers in Indian flights during the pandemic was on an average 121 as compared to pre COVID 19 was 136. The aircraft movement grew at CAGR of 9.56% in 2020. According to report the India's aviation industry is expected to witness Rs. 35,000 crore (US\$ 4.99 billion) investment in the next four years. In November 2020, the Government of India announced that it is likely to increase the total number of allowed domestic flights to 75% of the pre-COVID-19 levels.

Impact of COVID 19 on Financial Services:

The Indian financial services sector consists of the capital market, insurance sector and non-banking financial companies. The S&P small caps and mid cap BSE gives one-year absolute return of 33.53% and 21.31% respectively during the last year. 16% assets in the mutual fund industry were generated from B30 locations in December 2020. These assets increased by 3%, from Rs. 4.95 lakh crore (US\$ 62.26 billion) in December 2020 to Rs. 5.13 lakh crore (US\$ 70.75 billion) in January 2021. Indian stock markets—S&P Sensex and Nifty50—rose 15.75 and 14.90%, respectively, in 2020. For the decade ended 2020, the Sensex gained a whopping 173% and Nifty surged by 169%. Fund raising from the equity market grew by 116% to Rs. 1.78 lakh crore in Initial public offering (IPOs), Offer for Sale (OFS) and other market issuances in 2020.

Indian GDP during the COVID 19 Pandemic:

The gross domestic product of the world was shrink to -3.27% during the year 2020. It is expected that in future the world GDP will grow by 6.8% annually as per. As per the prediction of the IMF it is said that the world GDP will grow by 6.026% for year 2021, and again it will go decreasing till 2024 by average 1.5% annually.

India's GDP is estimated to contract by 7.7 % in FY2020-21, composed of a sharp 15.7 % decline in first half and a modest 0.1 per cent fall in the second half. During 2020-21, it is expected that the GDP to be worth Rs. 74.4 lakh crore, which is roughly the same as the GDP in 2019-20 about Rs 74.7 lakh crore. For the full year of 2020-21 then, India's GDP is likely to be Rs 134.4 lakh crore as against Rs 145.7 lakh crore in 2019-20 India's per capita GDP will fall to Rs 99, 155 in 2020-21 last seen four years ago during 2016-17. Similarly, the per capita GDP was also near about the level at 2016-17. It has been seen that the per capita GDP ins near about 99155 Lakh Crore for the year 2020.

Inflation in India during COVID 19 Pandemic:

At the initial stage of pandemic during April 2020 to May 2020 the inflation was below 5%. From June the inflation shown the upward trend. In June 2020 the inflation was 6.23%. which shown the sharp increase in retail inflation as the lockdown were imposed and the productions was stopped everywhere. The trend was continuing till October 2020 and the inflation reaches to the highest 7.61 percent. In November 2020 it drops to 6.93% and shown sudden drop to 4.06% in January 2021.

Unemployment Rate in India during COVID 19:

The unemployment rate matches the period of lockdown imposed in India. The Unemployment rate reaches to 10.18% during June 2020. From that it shows fluctuation. During December 2020 also the unemployment rate touches 9.06% as a whole. On an average the unemployment rate during the pandemic situation in 2020 were 7.45% as a whole. The urban India shown average job cuts in 8.51% and the rural area also shown the average job cut to 7.12%.

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Interest rate during the COVID 19 situation:

It has been seen that the lending interest rate of the banks were decreasing from 9.45% in March 2020 to 8.3 in April 2021 for public sector banks. For Private sector banks the rate were decreased from 1.95% to 10.1 percent during last one year. The foreign banks shown the decreasing the lending rate from 9.74% to 8.28%. The schedule and commercial banks also lower down their lending interest rate by 0.8% during the last financial year 2020-21.

Import and Export during the COVID 19 situation:

The export was decreased 221985418.10 Rs. To 190091525.61 Rs. From 2019 to 2020. The export was decreased by near about Rs. -1678926107.51. for the financial year 2020-21 compared to 2019-20.

It has been seen that in financial year 2019-20 the total import was Rs. 336,095,445.61 and in 2020-21 it is Rs. 255,577,286.68. The total import shown downward trend. The import was decrease by Rs. 80518168.93.

Interpretation & Findings:

The Indian GDP dive to -23% during the first wave of pandemic in 2020. After words it shown improvement and no the GPD were showing -7.7% downtrend. India announces \$22.5 billion stimulus package to help those affected by the lockdown and Pandemic.

As soon as the lockdown announced by the government of India in the month of April 2020 the unemployment rate sores to above 10 %. After the lockdown removed by government the rate shown the steady downward trend and comes to near about 6% till November 2020.

The finance ministry and the RBI took the corrective measures to tackle the inflation in the economy. The interest rates were managed by the RBI very carefully. The interest on the lending by banks were lower down by near about 1.5 percent.

Inflation in India were increased during the peak period of COVID 19 pandemic first wave. The inflation rate sores to 7.1% during the October 2020 due to the high demand and low production. According to the report of IATA India there were total deficit of -61% in total revenue of Aviation industry during 2020.

The FMCG sector were the good performing industry during the pandemic as the demand for the FMCG goods were all time high and the production was hampered due to lockdowns. From last few years the automobile industry was showing the stable upward trend. After the first wave the industry is in a recovery mode. TATA, MARUTI, MAHINDRA, HONDA, HERO, TVS, there are the some of the companies who are handling the industries growth. The hotel industry stuck their business due to lockdown. They are hoping for the good future demand after the lockdown and the pandemic situation comes in control.

Conclusion:

During the study of the impact of COVID 19 on Indian economy it has been seen that the economic condition was worst during the first wave of the COVID 19. The first few months' hampers the economy most. Meanwhile the governments initiatives and the financial policies the Indian economy is in a recovery mode. The set back of the pandemic will require next 3 to 4 years to get the economy recovered completely.

Scope of Further Study:

A detail study of individual industries can be done so that the complete details and the impact can be found out on that industry and its share in Indian Economy. Also the various parameters of economic development can also be studies individually in detail.

Limitation:

To make the comparative analysis the data availability was not there. So the comparative analysis had not been done. The complete study was on the basis of secondary data availability on various government portals, and authentic websites.

Paper Title- "IMPACT OF CIVID 19 ON INDIAN ECONOMY DURING 2020-2021 AND ITS RECOVERY"

Paper Link-<u>NA</u>

Journal Name- ANVESAK

Journal Link: https://www.spiesr.ac.in/Anvesak/About+the+Journal

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IMPACT OF COVID 19 ON PERSONAL FINANCES SPECIAL REFERENCE TO URBAN INDIAN POPULATION

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Pune

Abstract:

The research has conducted to understand the impact on the personal finances (income & investment) of COVID 19 on the selected population. The study is focused towards the various income ranges present in the Indian economy. The sample is divided in to three sections as per income and also in an age group make a detail study. The data collected from the various individual having income from businesses or from salaried individuals belongs to various income range. The study tried to analyse how deeply the pandemic situation impacted the earnings & investments of the individuals and is there any scope to overcome the impact in near future. The study found out that the impact of COVID 19 were faced by the lower income range and mid income range as compared to the higher income range individuals.

Keywords: Financial Planning, Income Range, Low Income Range, Mid Income Range, Higher Income Range, Salaried Individual, Personal Finance etc....

Introduction:

The outbreak of the COVID 19 virus in the world took place during the last month of 2019 and it significantly impacted the human life. Initially it was limited to CHINA as the origin of covid19 virus and it was not detected immediately. But after the outbreak in first month of the year 2020 throughout the world, all of sudden the world economy starts slowing down drastically. It impacted the human badly and still it is not in control as 1.5 year passed. Various vaccines had come but the virus still way away from control.

The first COVID-19 positive case in India was registered on 30th January 2020 (India Today). Cases have increased regularly and substantially ever since. With effect from 25th March 2020, the Government of India declared a three weeklong country-wide lockdown to restrict the number of cases due to the fast spread of the virus. Modes of transport were also restricted. The lockdown was further extended from 15th April 2020 to 3rd May 2020, and then from 4th May 2020 to 17th May 2020. Indeed, the lockdown continued till 31st May after which services were restored in a phased manner.

With the protracted lockdown and restricted economic activity, the economy witnessed an extended period of slowdown; millions of jobs were lost, and businesses severely hit.

The structure of personal finances is completely changed due to pandemic. The overall per capita income was also decreased drastically. Various individuals had loosed their jobs. The small business individuals had not able to sustain in the tough situation of the pandemic periods. The unemployment rate touched 25.5 percent on May 5, 2020, from 7.4 percent on march 21, 2020. The downfall in the income was the reason the personal finances structural changes.

The Demand from the market is decreased due to the decrease in the income of the individual. As the demand decreased the small business individual also faced the income deficiency.

Literature Review:

One of the research paper which I considered for reference by Martin Turcotte and Darcy Hango form Canada, said in their study that The extensive job losses and financial difficulties many Canadians have faced may have further disrupted family and social relationships. Furthermore, personal financial difficulties can exacerbate social concerns because economic exclusion can negatively impact social support and involvement in organizations (Mood and Jonsson 2016). Difficulty fulfilling financial obligations is associated with having greater social concerns (Table 1). By comparison, this was the case for one in five people who did not anticipate experiencing significant financial impacts from COVID-19 (21%). This was the case in Canada. On the same

platform our study was also focused on related to Indian context. ¹ Monica K. Kansiime, Justice A. Tambo,b Idah Mugambi, Mary Bundi, Augustine Kara, and Charles Owuord This study assessed the implications of COVID-19 on household incomes and food security in two East African countries – Kenya and Uganda. The two countries instituted similar containment measures, with more restrictions in Uganda compared to Kenya. Results show evidence of worsening food security and dietary quality of respondents in the two countries during the COVID-19 period compared to before. Joint Statement by ILO, FAO, IFAD And WHO gives that the Millions of enterprises face an existential threat. Nearly half of the world's 3.3 billion global workforce are at risk of losing their livelihoods. Informal economy workers are particularly vulnerable because the majority lack social protection and access to quality health care and have lost access to productive assets. Without the means to earn an income during lockdowns, many are unable to feed themselves and their families. For most, no income means no food, or, at best, less food and less nutritious food².

Lewellen et al. (1977) determined that demographic factors such as age, gender, family income, and other determinants influenced individual investment decision making. The article presents the first results of a now casting exercise on the employment income losses in 2020 and their distribution. Household income in India was drastically impacted due to the coronavirus (COVID-19) lockdown as of April 12, 2020. There was a significant decrease in the level of income with households reporting a fall in income from about nine percent in late February to a whopping 45.7 percent in mid-April. The country went into lockdown on March 25, 2020, the largest in the world, restricting 1.3 billion people, extended until May 3, 2020.³

Research Methodology:

The study was used convenience sampling technique to collect the data followed by primary survey method. The respondent was male and female belongs to the age group of 30 to 70 years. The participants belong to various income range which are segregated in three income blocks of Low income range, mid income range, higher income range.

Hypothesis considered for the study:

H0: There is an impact of COVID 19 on the Personal Finances of the Individuals.

H1: There were no impact of COVID 19 on the Personal Finances of the Individuals.

The study was conducted on 250 respondents. There is no correlation between the age group of the responded and the income which they are getting.

To determine the association of COVID 19 Pandemic situation and the personal finance, a paired sample t-test and correlation was used. The personal finance includes the income form salary & its investments both.

Data Analysis & Interpretation:

For the study the data were collected using the relative questionnaire circulated among the samples within the age range of 30 to 70. Near about 15 questions were asked to the individuals getting in terms of salary. the study tried to find out the impact on the personal finances of the individual during the COVID 19 pandemic.

The total 575+ samples were collected through the questionnaire. Out of that 300 samples were considered for the study. Remaining samples was rejected due to the un appropriate answers, random answers, half-filled questionnaires etc.

³ Impact on household income due to the coronavirus (COVID-19) in India from February to April 2020 https://www.statista.com/statistics/1111510/india-coronavirus-impact-on-household-income/

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¹ Impact of economic consequences of COVID-19 on Canadians' social concerns,

https://www.researchgate.net/publication/341789012_Impact_of_economic_consequences_of_COVID-19 on Canadians%27 social concerns

² Impact of COVID-19 on people's livelihoods, their health and our food systems, <u>https://www.who.int/news/item/13-10-2020-impact-of-covid-19-on-people's-livelihoods-their-health-and-our-food-systems</u>

Analysis of the Impact on the Income of Individuals:

The responses classified in age group from 30 to 40 age, 40 to 60 age and 60 to 70 age, and income range was from 2.5 lacks to 4.00 lacks, 4.00 to 6.00 lacks. and above 6 lacks. The summation of responses from various groups and the range were considered for the hypothesis testing.



Graph 1: Low Income Range



The income of 28% of respondent from age group 30 to 40 said that the income was decreased by 25% in an average because most of the respondents come in fresher category or those having less experience there were facing pay cuts in their monthly salary. The income of 41% respondent from age group 40 to 50 said that there was a pay cut of 38% aggregately for last one year. From the age group of 50-60, 20% respondent said that there were on an average 15% pay cut happened during the year 2020-21. There were less percentage of people belongs to age group of 60-70 said that there was lower income by 15%. Remaining 6% respondent said that there was no change in income due to COVID 19 Pandemic.



Graph 3: Mid Income Range



Graph 4: Mid Income Range

The income of 23% of respondent from the age group of 30-40 said that there is 20% on an average pay cuts during the last one year. The respondent from age group 40-50 said that 35% of decrease in income from last one year starts from April 2020 to April 2021. The 21% of respondents from age group 50-60 said that there is 21% of loss from last 1 year. The 8% of respondent said there is a pay cut of 20%. The decrease in income was significantly lower than the low income group. 15% of respondent said that there is no impact of COVID 19 on income.



Graph 5: High Income Range

Graph 6: High Income Range

Only 48% of respondent said that there were decrease in income. The highest pay cut faced by age group of 40-50 by 20%. 52% of respondent from higher income range said that there was no impact of COVID 19 on their income.

Analysis of the Impact on the Investment of Individuals:

To analyse the impact on the investment of individuals we considered the various ways of investments such as old savings, SIP, Mutual Funds, Loan, Share Market etc. on different income ranges and age groups.



Graph 7

The mid income range shown the moderate trend on their investment, somehow the were able to tackle their investment properly. 59% of respondent said that they decreased their investment only import debts they are clearing during the last 1 year or so. 41% of respondents were managing their all investment properly by cutting down their daily expenses. But the High income range respondent showed exact opposite trend as compared to the low income range.

The t-test was applied on the responses given by the respondent of various income and age group to prove the hypothesis defined for the study.

Income Range	Average Yearly Income before COVID	AverageYearlyIncomeAfter10 (Ps)	Change in Income (Percentage)
Low Income	450900/-	370600/-	-17.80 %
Mid Income	595700/-	545000/-	-8.51 %
High Income	870650/-	860500/-	-1.16 %

Impact of COVID 19 on Income:

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Graph 10

*Significance level considered was 5% or 0.05.

The impact was varied from low income range to high income range. The low income individuals faced highest impact, mid income individuals faced moderate impact but the high income individual were managing smooth financial livelihood, they didn't have any impact of the COVID 19 Pandemic.

Impact of COVID 19 on Investment:

Income Range	Mean Investment Yearly Before COVID 19	Mean Investment Yearly After COVID 19	Percentage Change
Low	55000	25000	54.54 %
Mid	120000	75000	37.5 %
High	250000	235000	6 %



t-Test: Paired Two Sample for Means			
Mean	141666.7	111666.7	
Variance	9.86E+09	1.2E+10	
Pearson Correlation	0.994643		
df	2		
t Stat	3.464102		
P(T<=t) one-tail	0.03709		
t Critical one-tail	2.919986		
P(T<=t) two-tail	0.07418		
t Critical two-tail	4.302653		

say that the investment quotient had an impact of COVID 19 for last 1 year.

Findings & Conclusion:

The first hypothesis testing reviles that there is an impact of COVID 19 on income & investment pattern of the individuals belongs to the Low range, Mid-range & High range income groups. The study said that the hypothesis stand's firm.

There were near about 94% of respondent from low income range individuals said that they got impacted by the COVID 19 Pandemic situation. The age group of 40 to 50 of low income range individuals faced highest drop in their income during April 2020 to April 2021. the said group faced high impact due to the all of sudden lockdowns, no work opportunities in economy, less demand for products in the market and many more as the most of the individual belongs to this group was a fresher, plant worker, shop worker, laymen's, working on construction sites. The low income range

individuals were not at all able to manage their investments. The age group of 60 to 70 had not faced any impact as most of them are pensioner who had receiving their pension on continuous basis.

In the medium income range group, the individuals belong to 30-40 and 50-60 was near about same. On an average 22% drop in the income of this group. Same as that of the low income range the individual belong to 40-50 age group impacted the most by 38% decrease in income due to COVID 19 pandemic. Somehow the mid income range individual was able to tackle their investment with the combination of their earlier savings & current incomes. The age group of 60 to 70 had not faced any impact as most of them are pensioner who had receiving their pension on continuous basis.

Very few of the respondent from high income range said that they had a drop in income during last one year. 48% respondent said that they had an impact in their income with an average of 12.5% yearly. Investment quotient of the group was also stable as the income is stable for the individuals. By the study we can say that the impact on the high income range individuals is very moderate it's like nothing for them.

At the end we can say that due to COVID 19 the economic slowdown, loss in employment, decrease in per capita income took place in INDIA during last one year.

Limitations:

There was limitation in collection of responses. The responses were collected through online mode instead of face to face interaction because of COVID 19 precautionary guidelines.

The responses which were collected, some of the responses had discarded because of incomplete data given by the respondent.

Scope of Further Studies:

The authors can further study the impact of COVID 19 on companies, on economies, on business, on share market, on investors, on government etc.

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JOURNAL OF EDUCATION: RABINDRABHARATI UNIVERSITY ISSN : 0972-7175 IMPACT OF PANDEMIC COVID 19 ON SHARE MARKET WITH RESPECT TO BEFORE & AFTER PANDEMIC LOCKDOWNS IN INDIA 2020

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Abstract:

The manuscript was focused on the impact of the Pandemic situation on the performance of the stock markets in India. The objective of the study was to understand the correlation of the stock market with the economic situation of the country. Primarily it has been seen that the market responding negatively to the economic situation after the pandemic happened. To evaluate the exact performance of the stock markets pre and post-pandemic, a period of 6 months before and 6 months after the exact lockdown forced in India in March 2020 was considered. The data of the major stock exchanges for India such as NSE & BSE was collected to analyze the volatility of the market during the selected period of the study. The data were analyzed using various tools such as moving average, relative strength index, moving average convergence divergence or MACD, Fibonacci retracement and candlestick price chart, VWAP, RSI, etc. The study shows that there was a strong significance of the selected variables on the performance of Share markets of INDIA.

Keywords: Share Market, NSE, BSE, SENSEX, NEFTY, VWAP, RSI, MACD, Fibonacci indicator, Stochastic Indicator.

Introduction:

The share market of any country is the most volatile as the performance is relay on the economic situation of the respective country and the world also. This manuscript focuses on the performance of the stock market during the pandemic situation in India during 2020. The performance of the stock market is expressed by the Indexes of the respective stock markets of India such as BSE and NSE which are the most important indexes which represent the Indian stock market.

The study's objective was to find out the relevance of the performance of the stock market and the economic condition during COVID 19 Pandemic period. During the COVID 19 in early 2020 most of the country imposed a lockdown for the period of at least 3 to 4 months, within this period of lockdown most of the operations of the industries, companies from various sectors such as Banking, Manufacturing, FMCG, Service industry, Automobile, IT, etc. were stuck up. This study was considered only the major stock exchanges irrespective of the companies to analyze and evaluate the research problem.

The various companies which are listed on the stock markets in India are divided into various subsections based on market capitalization such as Large Cap, Mid Cap, Small Cap. During the COVID19 Pandemic situation, the mid-cap companies and the small companies were hampered the most as these are the companies that rely on the economic position of the country most irrespective of the world economy.

Literature Review:

Most recently, Zhang et al. (2020) measured the general pattern of country-specific risk and systematic risk across world financial markets in the presence of COVID-19 outbreak fear. They documented that global markets have become highly volatile and financial market risk has increased in response to the uncertainty of market conditions. In the case of the USA, they suggested that non-conventional policy interventions (quantitative easing) could increase more problems for the economy. Regarding the impact of the deadly virus on financial volatility, Liu et al. (2020) investigated the impact of the COVID-19 outbreak on the most affected countries' stock markets

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using the event study method. They documented that the stock markets responded negatively to the COVID-19 outbreak, which had weakened their performance. Albulescu (2020) documented that new confirmed cases of COVID-19 and death reported positively influence the market volatility index (VIX) both within and outside of China. Additionally, he proposed that the higher the spread of the deadly virus in the country, the higher would be the financial volatility in the stock market. In the context of Spanish capital markets, Ahmar and Val (2020) predicted a short-term effect of COVID-19 on the IBEX index using the ARIMA and SutteARIMA methodology. Based on the results, they suggested that SutteARIMA is better for predicting the impact of the coronavirus on the stock market than ARIMA.

Objective of the Study:

- 01. To understand the correlation between the Economic Condition and the performance of stock market.
- 02. To understand how the Indian stock market is run, particularly as it pertains to the indexes of pre and post COVID-19 of selected stock exchanges.

03. To analyse the impact of COVID 19 pandemic on stock market of India.

Hypothesis:

H0: There is significant impact of COVID 19 Pandemic on the performance of Stock Market of India.

H1: There is no significant impact of COVID 19 Pandemic on the performance of Stock Market of India.

Research Methodology:

The secondary data for the study was collected from the various financial websites, journals, Financial magazines, and NSE & BSE authorized web pages of stock exchanges. To make a justifiable study of the impact of the pandemic situation on the stock market, the period of 6 months pre and post of COVID 19 lockdown was selected.

To analyse the data various methods such as VWAP, RSI, MACD, Fibonacci, tools were used on the variable selected for the study. The market capitalization of the different industries which are listed on the stock market was also analysed to get the exact picture of the impact of the economic situation. Correlations tools were also used to correlate the performance of the stock market of pre and post-period COVID 19 Lockdown.

- **1. VWAP** = $\sum Price * Volume$) / \sum Volume
- 2. Relative Strength Index:

The relative strength index (RSI) is computed with a two-part calculation that starts with the following formula,

RSI (step one) = 100 - [100/1 + (Average gain/Average loss)]

RSI (step two) = 100 - [100/ 1 + (Previous Average gain * 13) + Current Gain) / - (Previous Average Loss *13) + Current Loss)]

3. MACD:

Calculated by subtracting the long-term EMA (26 periods) from the short-term EMA (12 periods)

 $MACD = EMA_{(12 \text{ periods})} - EMA_{(26 \text{ periods})}$

4. Fibonacci Retracement:

In technical analysis, a **Fibonacci retracement** was created by taking two extreme points on a stock chart and dividing the vertical distance by the key Fibonacci ratios of 23.6%, 38.2%, 50%, 61.8%, and 100%.

5. Stochastic Indicator:

%K=[(C-L14)/(H14-L14)]*100

Whereas,

C = The most recent closing price

L14 = The lowest price traded of the 14 previous trading sessions

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H14 = The highest price traded during the same 14-day period

%K = The current value of the stochastic indicator

Data Analysis & Interpretation:

Collected data were evaluated under five different levels for the selected period of analysis.

Level 1: VWAP

Level 2: RSI

Level 3: MACD

Level 4: Stochastic Oscillator

Level 5: Fibonacci Retracement

The data collected for the period of six month pre and post COVID-19 lockdown in India. The lockdown was imposed in India in month of April 2020. So for the study data ware considered from Oct 2019 to March 2020 for pre COVID-19 situation and from April 2020 to Oct 2020 for post lockdown.

Month	Open	Low	High	Close
October 2019	38813.48	40392.22	37415.83	40129.05
November 2019	40196.07	41163.79	40014.23	40793.81
December 2019	41072.94	41809.96	40135.37	41253.74
January 2020	41349.36	42273.87	40476.55	40723.49
February 2020	40753.18	41709.3	38219.97	38297.29
March 2020	38910.95	39083.17	25638.9	29468.49
Table No. 01: VW	AP for NSE	Before Loc	ckdown in I	ndia
Month	Open	Low	High	Close
October 2019	29505.33	33887.25	27500.79	33717.62
November 2019	32748.14	32845.48	29968.45	32424.1
December 2019	32906.05	35706.55	32348.1	34915.8
January 2020	35009.59	38617.03	34927.2	37606.89
February 2020	37595.73	40010.17	36911.23	38628.29
March 2020	38754	39359.51	36495.98	38067.93
Table No. 02: VW	AP for BSE	Before Loc	ckdown in I	ndia
Month	Open	Low	High	Close
April 2020	11515.4	11945	11090.15	11877.45
May 2020	11886.6	12158.8	11802.65	12056.05
June 2020	12137.05	12293.9	11832.3	12168.45
July 2020	12202.15	12430.5	11929.6	11962.1
August 2020	11939	12246.7	11175.05	11201.75
September 20	11387.35	11433	7511.1	8597.75
Table No. 03: VW	AP for NSI	E After Loc	kdown in In	dia
Month	Open	Low	High	Close
April 2020	8584.1	9889.05	8055.8	9859.9
May 2020	9533.5	9598.85	8806.75	9580.3
June 2020	9726.85	10553.15	9544.35	10302.1
July 2020	10323.8	11341.4	10299.6	11073.45
August 2020	11057.55	11794.25	10882.25	11387.5
September 2020	11464.3	11618.1	10790.2	11247.55

Table No. 04: VWAP for BSE After Lockdown in India

Level 1 VWAP:

VWAP is the Volume Weighted Average Price. It is the trading indicator that makes an average of closing prices during the given period. VWAP uses the previous data and hence it is also called a lagging indicator.

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Interpretation: VWAP analysis was not possible to execute as the volume of the selected market is not available currently. We can analyze the individual companies using VWAP in the further scope of studies.

Level 2: Relative Strength Index

The Relative strength index is the momentum indicator which is used in the technical analysis that measures the magnitude of recent price changes to evaluate overbought or oversold conditions in the price of stocks.





Graph No. 1: RSI for NIFTY



Interpretation: The graphs of the relative strength index for nifty and Sensex shows that during the pre-covid-19 situation the market was in the trend of purchasing and going in the upward direction. As soon as the news of the pandemic came into the markets of India, the RSI analysis shows that the brokers or retail investors start selling the stocks at both the market. Due to that reason, the RSI shows a downward trend till April. But as the lockdown starts in INDIA from April 2020 the RSI index shows growth after May 2020. And till date, the market is rising.

Level 3: MACD

The Moving Average Convergence Divergence shows the trend which is follows momentum indicator which shows the relationship between the two moving averages of securities price.









Interpretation: The MACD indicator for the markets shows a downward trend during the pandemic lockdown. But in the latter half part of the study, it shows the upward trend in the market. The momentum of both the market was in an upward direction. The down word momentum is only for few months starts from the month of January 2020 to April 2020 after that momentum goes upward only.

Level 4 : Stochastic Indicator

A stochastic oscillator is a momentum indicator comparing a particular closing price of a security to a range of its prices over a certain period of time.

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Graph No. 5: Stochastic Indicator for Nifty SENSEX



Interpretation: In the market, the brokers and retail investors start selling their holdings from January 2020 to April 2020, but as soon as the market got momentum in an upward direction due to some governmental redefined policie the stochastic indicator also shows an upward trend in the market as more and more investors are coming into the market.

Level 5: Fibonacci Retracement





Graph No. 7: Fibonacci Retracement for Nifty SENSEX



Interpretation: The three potential resistance levels: 0.236, 0.382, and 0.618 gives that the market during the three months shows the downward trend and afterword it going in upward trend only. **Findings:**

The COVID-19 comes to India in the early month of Feb 2020. The cases of the pandemic were started increasing during March 2020, and the lockdown begins on 22nd March 2020. The markets were trending between NIFTY 11,500 points to 12,000 points & Sensex 35,000 points to 40,000 points.

From January 2020 the markets showed a downward trend as soon as the news of the COVID-19 comes. From January 2020- to April 2020 markets i.e NIFTY were crashed by 4000 points and SENSEX was crashed by 8000 points.

The lockdown was imposed in India from 22nd March 2020 and everything got shut down. No industry was working only the share market was working. Surprisingly the selected indicators show that the market starts recovering during the lockdown period. The best possible reason is a concern for further study but briefly, we can say that the retail investors start putting money in the market, the brokers, sub-brokers start pumping the money in the market by buying the shares of the Pharma industry, banking industry, FMCG industry.

The markets show tremendous growth after the lockdown currently the NIFTY trading on 15000 points i.e. 6500 points more than the crash points. The SENSEX is also trading on 50000 points i.e. more than 16000 points than the downward situation in January to April 2020.

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Conclusion:

The market showed a downward momentum for an average of 4 months. Afterward in the next 6 months the market reaching new sky levels, it showing tremendous growth in the market because of some governmental policies, investors' sentiments, and large entries of new investors.

The hypothesis which we had considered for the study stood significant. The market had an impact on COVID 19. For few months it gives a negative impact but now it is giving a positive impact, the reason is various new opportunities came to the market. The benefit of China's negative image is directly helping the Indian Economy as the MNC's are shifting their base from China to Indian territory and few other countries.

Scope of Further Study:

The further scope of the study is to study the impact of COVID 19 on the individual sectors, individual companies, Reasons to find out why the share markets are showing an upward trend as the demand for the products in the market is going down.

Limitation:

The VWAP analysis was not able to carry out as the total volume for NIFTY & SENSEX was not readily available in any of the stock markets.

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"TO STUDY THE PREFERENTIAL CHANGES IN INDIVIDUALS FINANCIAL EXPENDITURE & INVESTMENT PATTERN DURING COVID 19 PANDEMIC"

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Abstract:

As per the Indian context, investing money for the future is the foremost goal of any individual. Due to the Pandemic in 2020-21, individual financial planning collapsed because of all of the sudden need for financial requirements and a rise in unemployment. The research paper was focused on the changes in the individual financial expenditure and investment behavior after the pandemic COVID 19 in 2020-21. The different ways of short-term and long-term investment and expenditure were considered to analyze the investment pattern and financial expenditure. The pattern was found out by collecting the primary data from the Individual & some secondary data was also used to analyze the overall change in investment pattern of individual of the country spending behavior. The individual now focusing on the expenditure related to the livelihood of their family. They are preferring to invest money for the long-term which gives benefits with high security.

Keywords: Investment Behaviour, Financial Instruments, Financial Expenditures, Investments, Household Income, Financial Risk, Return on Investment, long-term, short-term, financial instruments.

Received 01 July 2021, Accepted 17 July 2021, Published 30 July 2021 Correspondence Author: Dr. Girish Ashok Bodhankar

Introduction:

Investment is the purchase of goods, services, financial instruments for the future. The individual invests the money today for the betterment of the future. By considering today's investment, they decide the expenditure to be made today for livelihood. But the investment and expenditure are interrelated to each other and it has an impact on current economic conditions. The research paper is focused on the changes in the preference of the individual for investment & expenditure due to the sudden spread of the COVID 19 pandemic throughout the world.

In India, investment for the future is the foremost important thing for individuals. Every person in India is working towards the betterment of the future by investing today. But because of the spread of COVID 19, impacted both the investment power and expenditure power of the individual substantially. For the study, the data were collected from individuals ranging between ages 25 to 55 years. Various questions were asked regarding their income structure, investment patterns, and expenditure of livelihood. The research paper tried to find out the change in perception of the individual regarding money during and after the COVID 19 attack, as it attacked financially on the individuals.

The investment in terms of long-term investment & short-term investment patterns were analyzed. The expenditure pattern was also analyzed so that the paper can give a clear interpretation of changes in the investment & expenditure after the pandemic during 2020-21.

Literature Review:

Investors from India mostly prefer traditional investment which offers risk-free income. Investors like to invest in bank FD, RD because the major concern of the individual is to generate the constant and fixed income on the investment they are doing. But during the COVID 19 because of economic slowdown, various banks had cut down the interest rates which they are offering on the various

financial instruments such as FD, RD which gives risk-free income. To undertake the study various research paper were considered from different authors.

Most of the study says that the pattern of the investment from the individual changed during and after the lockdown. The investors now moving from risk-free to riskier investment avenues to get higher income. Despite a slowdown in the Indian economy the investors are showing interest in the share market, mutual funds, and life insurance were shown the most significant increase. Examining the relevant literary work from various researchers in the Indian context, they found out that because of the COVID 19 various businesses facing an economic slowdown, individual salaried persons also facing cut in income or job loss during the pandemic situation. Because of that various individuals are attracted towards the high rewarding investment opportunities in the markets such as share market, mutual funds, SIP, insurance, etc. The liquidity condition of the investment avenue i.e. ease of converting or selling an investment avenue and expect a higher rate of return was considered more important while selecting investment¹. During the pandemic condition in 2020-21, the expenditure pattern was also facing changes. The expenditure is more focused on livelihood not on entertainment, lifestyle, or any non-essential goods and services. One of the authors found that the investment objectives vary from investor to investor depending on demographic factors.ⁱⁱ In addition to that salaried investors irrespective of age and income besides their occupation and marital status prefer the investment options providing long-term benefit, highly secured and profitable avenues.ⁱⁱⁱ A previous study relevant to our research found out that the confidence level of individuals in managing the investment also influences investment decisions. Hence based on the literature review the study considered a wide range of investment and expenditure patterns to fulfill the objective of the research paper.

Research Methodology:

The study used the primary data collected through the questionnaire. The collected data were segregated by applying the convenience sampling method. The questionnaire was designed in three sections. The first focused on personal information such as age, demography, income source, income range, etc. The second section comprises questions to find out the preferences for investments. The third section focused to get a preview of the expenditure preference of individuals irrespective of their income. The sample size arrived through the questionnaire was near about 639 out of which 560 sample sizes were selected for the study.

Objective:

- 1. To find out the investment pattern of individuals during COVID 19 2020-21.
- 2. To find out the expenditure pattern of individuals during COVID 19 2020-21.

Limitations of the Study:

Because of the lockdown due to COVID 19, it was not possible to take face-to-face interviews of the respondent which leads to some fake replays also. Some people may not be ready to cooperate, had not shared the true responses, such responses were discarded and not considered for the study.

Data Analysis & Interpretation:

The data analysis was done in two sections one was to find investment patterns and another was for expenditure patterns. The sample which was collected for the study were selected based on their valid responses. A total of 639 responses were received out of which 500 responses were selected for the study.

Section I:

Age of the respondent:

The age of the respondent had a greater impact on the selection of the investment avenues. Also, the expenditure pattern was different. From the analysis perspective, the data were classified based on two age groups. One was 25 to 40 years and another was 41 to 55 which includes both male and female respondents. The sample which was collected for the study were selected on the basis of their

valid responses. A total of 639 responses were received out of which 500 responses were selected for the study.

There were 325 total responses from males and 175 from female responses were considered for the study. From each age group, there were 250 respondents. In age group A there were 155 males and 95 female respondents similarly in group B there were 170 males and 80 female candidates were selected.



All the respondents having the income from salary only. The consistency was maintained while selecting the samples.

Income of Respondent:

The income of the individual respondent directly affects the selection of the investment avenue. It has been observed by various researchers that the level of income increase directly proportional to the investment level.



Graph 03

39% of respondent belongs to the monthly income of 40 thousand to 50 thousand income group including both male and female. 23% belongs to the income range of 50 thousand to 60 thousand. Only 17% respondent belongs to the income above 60 thousand.

Awareness about the different investment avenues:

There are various investment avenues available for the investors as per the requirement of individuals for long-term or short-term investment. The level of awareness was found out using a three-point level scale i.e. 1 to 3. One resembles the low level of awareness, 2 resembles a moderate level and 3 resembles a high level of awareness regarding various financial instruments.

INVESTMENT AVENUES	Male	Female	Combined Mean
STOCK MARKET	2.6	1.5	2.1
MUTULE FUND	2.8	2.2	2.5
SIP	2.7	2.6	2.7
FIXED DEPOSIT	3	3	3.0
POST OFFICE DEPOSIT	1.9	1.4	1.7
RECURRING DEPOSIT	2.5	1.9	2.2
GOLD	3	3	3.0

AWARENESS ABOUT INVESTMENT AVENUES.

REAL ESTATE	3	3	3.0
LIC POLICIES	2.9	2.7	2.8
MEDICLAME	3	3	3.0
NATIONAL PENSION SCHEME	2.3	1.4	1.9
PERSONAL PROVIDENT FUND	2.8	2.5	2.7
BANK DEPOSITS	2.7	2.6	2.7
TOTAL AWARENESS	2.7	2.4	2.5

Table 01

From the above table, it has been observed that the all respondent was aware of the various investment avenues. It has been seen that the investors are a high level of awareness about the traditional investment avenues such as FD, Gold, Real Estate. After that investors are aware of LIC, SIP, Bank Deposits, PPF. The investors were less aware of the post office deposits, RD, NPS. On average the investor was aware of various investment avenues 2.5 on a three-point scale.

Factors considered while selecting investment instrument:

The following table shows the rankings and the percentage given by the investors as per the factors they have considered before selecting investment instruments.

FACTORS CONSIDERED WHILE SELECTING INVESTMENT INSTRUMENT:

FACTORS	Mean	Ranking
	Score	
LESS RISK	2.9	1
TAX SAVING	2.5	4
HIGH RETURN	2.7	3
SIMPLICITY	2.2	5
LIQUIDITY	2.6	2

Table 02

As per the responses given by the respondent, it has been observed that the investors considering the less risky instrument's for investing. The 3 points were given to the risk factor of investment. simplicity received the least ranking in factors of investment decisions. Getting the highest return also an important factor as per the investors' point of view.

Change in the Investment During 2020-21:

The change in the preference of the investment was analysed using following responses received from individuals.

CHANGE IN THE IN	VESTMENT	DURING 2020-21	1
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INVESTMENT AVENUE	Preference Level	Percentage of sample doing investment	Newly started investing in 2020- 21
STOCK MARKET	4.9	39.85%	80.93%
MUTUAL FUND	4.7	28.75%	67.23%
SIP	2.8	39.70%	35.90%
FIXED DEPOSIT	1.9	55.60%	5.87%
POST OFFICE DEPOSIT	0.9	41.89%	2.80%
RECURRING DEPOSIT	0.8	35.46%	3.40%
GOLD	1	61%	6.18%
REAL ESTATE	1.2	79%	29.45%
LIC POLICIES	4.9	59.57%	92.54%
MEDICLAME	4.9	32.75%	93.55%

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NATIONAL PENSION SCHEME	3.5	20.93%	46.41%				
PERSONAL PROVIDENT FUND	3.9	18.63%	58.23%				
BANK DEPOSITS	1.5	45.75%	1.30%				
Table No. 03							



Graph 04

From the table, it was observed that Share Market, LIC Policies, Mediclame, received the highest preference ranking given by the investors. The investors had moved on to the modern era investment instruments as compared to the traditional one. FD, RD, Bank saving, Post office deposits, Gold investment, Real Estate investment are facing a downfall compared to the previous year.

From the graph, it was observed that the Share market, mutual fund, LIC policies, Mediclame, PPF are increased their share in the market. Investment in the share market was raised from 39.8% to 80.93%, Mutual funds from 28.75% to 67.23%, LIC policies from 59.57% to 92%, Mediclame (Health Policies) from 32.75% to 93.55% during COVID 19 pandemic period 2020-21. Investors changed their investment pattern from traditional instruments to modern era instruments irrespective of the risk involved in it.

It was also observed that the investment pattern was a mixture of low-risk investment options and high-risk investment options to minimize the losses and for the higher returns.

Section II:

This section focused to find out the expenditure pattern of the individual before and after pandemic 2020-21.

Preferences of Expenditure:

The expenditure preferences were found out by using the 5-point scale. the various expenditure was given and the preferences were found out by ranking.

Expenditure Preferences	Respondent		
	Male	Female	Mean
Daily Needs	4.5	4.9	4.7
Vehicle	3.9	3.2	3.6
Health	4.6	4.5	4.6
Saving	4.3	4.1	4.2
Entertainment	1.5	2.8	2.2
Lifestyle	2.6	3.8	3.2
Mean	3.57	3.88	3.7

From the above table, the preferences were collected from the respondent regarding the preferences they are giving on various expenditures on daily life. As per the data received it has been found that on average 4.7 points had been given to the daily needs by the respondent such as vegetables, groceries, etc. After that most of the expenses were making on the health and saving during the pandemic. The expenses on lifestyle and entertainment were given less priority during and after the pandemic period. Female respondent was still towards making expenses related to lifestyle with 3.8 points.



Graph 05

From the above graph, it has been seen that the impact on expenditure before the pandemic and the after the pandemic of COVID 19. As per the respondents, their expenses were increased on daily needs by 4%, on health care by 17%, on savings by 4% during the COVID 19 period. The expenses were decreased on entertainment by -5%, on lifestyle by -12%, and vehicles by -8% as most of the respondents were working from home, and the lockdown was implied.

From the above data, we can say that the expenditure pattern was towards the basic requirement for daily life not on the entertainment and lifestyle compared to before the pandemic situation.

Findings:

For the study, the respondent was selected for the ager group of 25 years to 55 years to find out the perspective of the young investors and the old inverters in the market. the respondent had been asked about the awareness about various investment avenues and the analysis found out that the investors are more aware of the traditional investment avenues compared to modern investment avenues. But on the opposite to that, the investors are preferring to invest in modern investments during and after the Pandemic period 2020-21. Near about 80% + individuals have started their investment in the share market, mutual fund, lic policies, healthcare policies, NPS schemes, etc. The respondent was asked to rate factors affecting their investment from that the study found that the investment affected by the low risk, high liquidity, and higher returns.

The investment pattern was completely changed from a traditional to the modern one. The individuals are looking towards higher return investment avenues irrespective of the risk associated with it. The individuals are selecting their investment avenues in a combination of the modern and traditional one. The highest demand for Share Market, Mutual Fund, LIC policies, NPS, health care policies, PPF accounts is attracting the attention of the individuals who gives the highest return.

Similarly, the expenditure pattern was also changed from rough expenses to basic required expenses of livelihood. Individuals are more focused on savings, health, daily needs. The entertainment, and lifestyle quotient are going on the back seat of the expenditure list. Entertainment and lifestyle have now become the least priority for individuals.

Conclusion:

As per the research papers' findings, it can be concluded that there is a change in the investment pattern and expenditure pattern of an individual after the COVID 19 pandemic 2020-21. The

individuals are investing more on high risk but having higher return avenues such as share market, mutual funds, LIC policies, NPS, PPF, etc. The expenditure pattern has also seen a huge change during the pandemic situation during 2020-21. Now the individual is giving more priority to the expenditure which is most important for livelihood compared to entertainment and lifestyle quotient. From the research paper, it can be said that the year 2020-21 is defined as the new pattern in investment and expenditure in an individual's life.

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JOURNAL OF EDUCATION: RABINDRABHARATI UNIVERSITY ISSN : 0972-7175 **"CRITICAL ANALYSIS OF POLICY GAPS IN THE INDIAN HEALTHCARE DELIVERY"**

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Abstract:

India's healthcare system is facing lot of challenges and need to be addressed by having implementation of good and radical reforms to deal with new challenges. Since the world is facing pandemic situation such as Covid-19, the issue of healthcare infrastructure again taking front stage for everyone's discussion. At one side in India the role of private players is rising in healthcare sector, but parallelly the cost of healthcare facilities sees the increasing trend and it is obviously out of reach for the large pool of population in India. The government hospitals are facing a crunch of insufficient resources and infrastructure such as shortages of beds, rooms and also medicines. In this research paper the authors have made emphasis on the current scenario of healthcare facilities and resources required for it. In the other side, government is failed to identify the areas of improvement in the healthcare sector and they are also paying attention towards allocation of funds in various policy measures.

The government must require to take a cohesive and all-inclusive approach which should consider the demography of this country and mitigate the regional differences with the help of people who are the residents of that locality. They should also need to focus on decentralization of economies and geographies to tackle a large demographic difference. It would be always better to involve your local level institutions such as Panchayats, to resolve the issues of particular localities. The authors observed that many people lost their lives due to epidemics and pandemics, and local governments failing to come up with good strategic planning which can be efficiently manage the spread of these diseases and can provide emergency measures. Therefore, the authors mentioned some comprehensive policy measures to tackle with epidemics and healthcare facilities.

Keywords: Analysis, Healthcare, Infrastructure, Pandemics, Policies.

Introduction:

Health infrastructure is an important feature to facilitate the growth and well-being of the citizens of any country. India's population has been 8.6 per cent in 2010-11 and increasing at an extraordinary rate of 9 percent and the forecasted data shows it will surpass China by 2030. To cater the need of such a huge population India's health infrastructure is inadequate. The outburst of many diseases such as Chikungunya, SARS, and Covid-19 in various nations have exposed the poor infrastructural facilities that is insufficient to serve the people.

The healthcare facilities are the indicator of how the local government pays an attention to their people. Infrastructural arrangements and investment priorities signifies the planning and policy measures from the end of government. India is a diversified country where one can observe demographic changes, geographic changes and even climatic changes, so that the huge population load and poverty leads to vulnerable diseases.

To cater the needs of such diversified country, every government need to make such policy measures which can be able to provide better healthcare infrastructure facilities at every corner of the nation.

Literature review:

Private sector players promoted to facilitate the health care services as public sector providers failed to deliver the desired services to people. Due to this, it leads to inequality and improper distribution of healthcare facilities across the country. It happened as private players are focussed towards profitability models and not on services.

Public sector hospitals are not having that capacity to provide services efficiently, they are just having the workforce of 15-20%. (Gupta, Kumra and Maitra, 2005). Public hospitals and clinics have been found to be understaffed by 15-20 %, on average, this problem is more rampant in rural areas. Shailendra Kumar (2016). Public sector healthcare services show uneven distribution of infrastructural

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facilities across various districts in the nation. (S. K. Hooda, 2017). Infrastructural facilities have been proclaimed as the foundation to deliver the public healthcare services. (Novick, Morrow, Mays (2008). Having a long-term strategic planning which explains the healthcare infrastructure facilities in terms of

statistical data my means of qualitative and quantitative analysis in India, which facilitates the policies mainly focussing on resources and competency, information and organizational capability. Kumar and Gupta, 2012).

Health care services in India is a blend of public and private entities and they are shortages of resources to serve this large population. Most of the population belongs to the rural areas and to provide better services to them, India needs to ensure the better preventive measures. Better living conditions and hygienic habits would be required to maintain which has a great impact in healthcare services. Proper medications and treatments would improve health quality and also effective to minimize the cost of health facilities. (I. J. Kumar, 2015)

India is having the potential to deliver better services if it ensures the basic health service infrastructure and human resources in this field. As private sector entered in the healthcare service, which effectively increased the availability of doctors and other associated resources but also responsible to regional variations. (Choudhury, P. K. 2018)

Objectives of the Study

1. To find out the current scenario of health care infrastructure of India.

2. To find the challenges in the current health care infrastructure of India.

3. To provide some recommendations to improve these misallocation health care facilities in India.

Research Methodology

This study is based on secondary data. It uses analytical and descriptive technique to find challenges in health care infrastructural facilities in India through different research papers, articles, different health reports published by Indian government and world agencies as WHO, OECD etc.

Data analysis and Interpretation:

India is having the requirement of better healthcare facilities in rural areas. As, it is not having enough primary healthcare units and dedicated government hospitals and even most of them are not having the capacity to provide proper most medical facilities. Besides this, most of the populations lives in rural areas and they are not aware about many diseases, since they are unable to get the medical education, these people do not follow the hygiene practices and preventive measures.

Due to the lack of information about any particular disease and other preventive measures, people in rural areas even some parts of urban areas not being able to follow the desired actions to tackle with epidemics and pandemics. Even they are not having the knowledge about various government initiatives and schemes.

Inadequacies pf Healthcare Infrastructure in India:

Insufficiency of Hospital Beds:

The recent pandemic Covid-19, exposed the gaps in health infrastructure system in India, as most of the hospitals were running out of beds, that leads to higher mortality rates. Average Population served per Government Hospital is 90,972 and average population served per government hospital bed is 2,012.



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Less Number of Healthcare Centres

India is lagging behind with many countries in the world in terms of availability of health centres.

National Commission on Macroeconomics and Health, recommended a Sub Centre for every 5,000 population, a Primary Health Centre for every 30,000 population and a Community Health Centre for every 1,00,000 population. Government temporarily increased the healthcare facilities to tackle with pandemic to provide better facilities. According to rural Health Statistics in March 2018 only 8% subcentres, 12% PHCs and 13% CHCs met Indian Public Health Standards (Alexender, 2018).

Shortage of Staff and Equipment's:

Though the Central government of India and its states are preparing themselves to upgrade their health care infrastructure but they are failing to avail these services to their people with better cost. The government Rural Health Survey indicates that nearly about 56 % of central healthcare services are having working X-ray machines and very few medical resources such as physicians and others are in place.

Health care infrastructure are heavily concentrated in urban areas

The Allopathic doctor-population ratio is 1:1,404 in India, per the current population estimate of 135 crores. This is well below the WHO norm of 1:1,000. Interestingly 52 per cent of these doctors are practising in just five States — Maharashtra, Tamil Nadu, Karnataka, Andhra Pradesh and Uttar Pradesh.

Allopathic doctor population is concentrated in a few select States. 15 per cent are working in Maharashtra, followed by Tamil Nadu (12 per cent), Karnataka (10 per cent), Andhra Pradesh (8 per cent) and Uttar Pradesh (7 per cent). Delhi, Assam and Odisha have 2 per cent of the total Allopathic doctors while Haryana, Chhattisgarh, Uttarakhand, Telangana and Jharkhand have 1 per cent.

Require more Medical Institutions

India requires more investment in terms of medial institutions who are dedicated to deliver quality education. To empower the people basic investments needed at the foundation level, therefore MBBS, BDS, BAMS and homeopathic, Ayurveda are the leading programs in India. As India's public hospitals are understaffed nearly about 15-18%, it is always better to have quality institutions for healthcare facilities. Most of the states are having the scarcity of teachers, no fund to manage the colleges as well as per MoHFFW, 2005, 61.25 of nursing & schools were not suitable for teaching.

Needed a good and effective Vaccination program:

As people across the world are facing the difficulty to get the vaccine in this Covid-19 pandemic, it is essential to have the strategic plan from the end of government. As India is not having sufficient workforce and inadequate production and manufacturing equipment, it is impossible to serve the needs of huge population. India's 17 places are having testing facilities only.

Role of Government and need of sustainable approach:

Many States and Union Territories are struggling to maintain and provide better health care facilities, as they are depending upon Central government for financial and other assistances to implement all kinds of policies. Most of the states are having own policies and do not follow the guidelines of states as per their demographic needs and requirements. Central government need to provide all inclusive policy measures for all the people, but their states need to take care of their own demography so they design their policies and also implement it solely. Therefore, is creates a gap between central and state level activities, and many times duplication of work and policies happens.

Prior to the implementation of any policy measure, it should be discussed and thoroughly understood between central and state governments to address the needs of all the people and deliver quality health care services and facilities. These programs should focus on achieving policy objectives and address

Suggestions for Better Health Infrastructure

Need to Support Rural Healthcare Infrastructure in India

The rural healthcare infrastructure in India is in very bad situation. Since the government initiated many policy measures such as National Rural Health Mission Programme (NRHM) which is dedicated to the

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quality health services and basically oriented towards rural health infrastructure in India. The major objective to provide basic healthcare facilities in rural areas of this country.

India's total healthcare expenditure:

India's total healthcare expenditure is at 3.6% of GDP, as per OECD, is far lower than the other countries. The average for OECD countries in 2018 was 8.8% of GDP. With public healthcare infrastructure stretched, out-of-pocket expenditure in urban centres is high in India.



• Some of the Recommendations to uplift the Healthcare Infrastructure

Governance:

India needs to focus on its basic governance which should facilitate the responsibility, resiliency, and sustainability. Government should allocate the responsibilities in such a way where managers to build an effective system to cater the needs of all the people. Such system should ensure that all the government systems, schemes and policies should percolate to its all the areas right from rural to urban areas, and must have long term vision to develop better and effective development model which sustains for many years.

Management of Information system:

Information Management Systems are not having the proper database management so that hospitals not able to maintain patient's records. Therefore, hospitals are not in that position to know that how many people in particular locality requires medical treatment and healthcare facilities.

Government Vaccination programme:

The central and state governments must provide better vaccination facilities for all and should be able to deliver the proper healthcare facilities in rural and urban areas. India is able to provide these facilities in very effective manner as they already eradicated many diseases such as Polio, Cholera, Jaundice, etc. Now, they need long term vision to tackle epidemics and provide good infrastructure at their place. This requires quality equipment and manufacturing facility.

Need investment in Medical Research Centres to Upgrade Health Infrastructure in India

India's government should establish the medical research centres and basic hospital infrastructure which are specialized in the matters of epidemics. They need to prioritize their domain areas in terms of investment options, should allocate the funds to uplift their rural areas as this area is unserved in many states. There must be a coordination between central and state government before making any strategic decisions.

The Need for a Comprehensive Emergency Epidemic Response Plan

India requires a long-term strategic plan which have a good vision to provide all inclusive actions to respond quickly towards any emergency medical requirements. The plan should include all the guidelines and standard operating procedures which can be followed and implemented across all the states and union territories effective, even in case rural areas or urban areas. A proper risk analysis should be done every year to understand the implementation and execution of government schemes and policy measures. Risk analysis enables the risk management team and dedicated task force team to handle any uncertainty of medical needs.

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Conclusion:

As India is preparing its healthcare facilities to face uncertainties and unknown events they require to organize and priorities their investments, expenditures to provide better facilities. They also need to recognize challenges and plan their solutions to fight against all harmful things.

Inadequate and insufficient government healthcare infrastructure in India takes higher costs than other peer countries. New private entrants also providing better facilities but they are looking higher profitability model. India needs to increase the share of healthcare expenditure from existing only 1% to at least 3 to 5% of the GDP. To provide justified and equal access to all the people in diversified geography, it should raise the standards of healthcare services and implement long term policy measures and schemes for the benefit of society.

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TATA COURUS AND HINDALCO- NOVELIS, HINDALCO- NOVELIS AND JINDAL STEEL WORK – ISPAT INDUSTRIES ON SHAREHOLDERS WEALTH: A CASE STUDY ON MERGER AND ACQUISITION*

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Abstract:

Mergers and acquisitions are the norms in today's world where organic growth is not easy out competition is stiff thus to keep in pace with the changing environment and ahead of competitors this route is often sought after. In thus study of the iron and steel industry 3 cases of M&A are considered for our research. In the cases of TATA COURUS and HINDALCO- NOVELIS it has been a strategic decision. Irrelevant of the reason behind the M&A , the effect of the same is reflected by the stock price of the merging entities . the effect of the stock prices is positive if investors consider the merger to be strategically fit and vice versa. We have studied the M&A of steel industry, which are TATA – COURUS, HINDALCO- NOVELIS and JINDAL STEEL WORK – ISPAT INDUSTRIES. Postmerger stock quotes have been taken of all the three mergers and the SENSEX data of NSE equity. After considering this Beta for the entire three companies' CAPM model has been used to calculate the cost of equity. The structure of the paper is as follows.

Introduction, selection, literature review, research methodology industry analysis deal overview, data analysis, interpretation findings suggestions and conclusion.

Keywords: Mergers and acquisition CAPM, BETA, Shareholders gain/wealth, stock risk.

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Introduction:

Mergers and acquisitions are the norms in today's world where organic growth is not easy and competition is stiff thus to keep in pace with the changing environment and ahead of competitors this route is often sought after. we have selected the iron and steel industry wherein 3 M&A cases are considered for our research. In the cases of TATA Corus and Hindalco Novelis it has been a strategic decision. Irrelevant of the reason behind the M & A, the effect of the same is reflected by the stock price of the merging entities. The same is reflected by the stock prices of the merging entities. The same is reflected by the stock prices of the stock prices is positive if investors consider the merger to be strategically fit and vice versa. We have studied the mergers of steel industry, which are Tata corus hindalco novelis and Jindal

steel works ispat industries we have taken post-merger stock quotes of all the three mergers and the Sensex data of NSE equity.

Literature Review:

During the post M & A scenario often the high failure rates are seen. Although research may focus on how to create value in M&A, the high failure rate of M&A remains a recurrent theme. Half or two thirds of all M&A are doomed to fail according to the literature describes how external activities affect integration, but these activities are commonly not results of integration. Prime focus is on effects on speed of integration, not on integration as such.

Markides and Ittner (1994) show that international M&A positively inpact the stock exchange value of the acquiring party. Morosini, Shane and Singh (1998) demonstrate that national cultural distance between companies positively impacts performance relation the discussion on learning, integration and culture to performance. The results in Markides and Ittner (1994) and Morosini, Shane and Singh (1998) may seem a little surprising, they could well be explained by the integration is resisted when distances between firms are large, also implying that risks for failure are larger when companies are strongly integrated.

Seth (1990) deals with value creation in related vis a vis unrelated M&A, Datta (1991) researches how organizational differences impact performance, and Capron (1999) investigates how resource redeployment and asset divestment impact long term performance.

In the case of customers, if they are part of the evaluation scheme, they are mostly used as an aggregate expressed through company revenue growth. In the discussions, customer reactions are not a key concern, but instead revenues are a tool to compare extant and expose size of the M&A parties. Overall, M&A effects on other parties are rarely recognized.

Research Methodology:

The details of research methodology applied are as under:

In this research paper my objective is to study the impact of M&A of iron and steel companies on shareholder's wealth and the risk faced by them post restructuring. I used the sample random sampling and convenient sampling technique for research paper. Target samples are brokers and investors. Sample size is near about 20 brokers. For the calculation part of the research paper I used the CAPM, Beta analysis and Regression techniques. the period taken in to consideration for the analysis is stock price of the acquirer company and price of the Sensex i. e NSE nifty for the date of the respective merges up to next 2 years.

Industry Analysis:

The international iron and steel institute in its forecast for 2008 has predicted that 2008 will be another strong year for the steel industry with apparent steel use increasing form 1,202 million metric tons in 2007 to 1,284 million metric tons in 2008 i.e by 6.8%

. further the BRIC countries will continue to lead the growth with an expected increase in production by over 11% compared to 2007. China remained the world's largest crude steel producer in 2007 also followed by Japan and USA. India occupied the 5th position for the second consecutive year.

Domestic Scenario:

The Indian steel industry have entered into a new development stage for 2005-06, riding high on the resurgent economy and rising demand for steel. Rapid rise in production has resulted in India becoming the 5th largest producer of steel.

It has been estimated by certain major investment houses, such as Credit Suisse that, India's steel consumption will continue to grow at merely 16% rate annually, till 2012, fuelled by demand for construction projects worth US\$ 1 trillion.

The national Steel Policy has envisaged steel production to reach 110 Million tonnes by 2019-20. However, based on the assessment of the current ongoing projects, both in greenfield and brownfield, Ministry of Steel has projected that the steel capacity in the county is likely to be 144.6 million tonnes by 2014-15.

Further, based on the status of MOUS signed by the private producers with the various State Governments, it is expected that Indies, steel capacity would be merely 293 million tonnes by 2020.

Deal Overview:

The Hindalco & Novelis Deal:

Hindalco industries limited, India's largest nonferrous metal company, and Novelis Inc. the woelds leading producer of aluminium rolled products announced on 12th Feb 2007 that they have entered into a definitive agreement of Hindalco toacqure Novelis in an all cash transaction which values Novelis at approximately \$ 6 billion, including approximately \$ 2.4 billion in debt. Under the terms of the agreement, novelis shareholders will receive \$ 44.93 in cash of each outstanding common share. The offer represents a 17 % premium to Novelis Feb. 10 closing price and 49% premium to Novelis share price on Jan 25, the day before Novelis said it as negotiation with potential buyers.

The combination of Hindalco and Novelis ill establish a global integrated aluminium producer with low cost alumina and aluminium production facilities combined with high end aluminium rolled product capabilities. Hindalco is consist increasing its share of value added products, which today stand at nearly 60% . the novelis acquisition gies it an instant leg up with its technologically sophisticated aluminium produsts capability, apart from a scale and global footprint. Hindalco will gain access to markets across the global because novelis operates in 11 countries and is the second largest producer in north America.

Tata Corus:

There is no doubt that tata has pulled off a coup Corus makes nearly four times more steel than tata steel. After a three month long takeover battle, tata steel nudged Brazil's CSN from the race in closed door eight-hour auctioning London by offering price of 608 pence, about 34 percent more than its first offer of 455 pence a share in October last year amounts to £6.2 billion acquisition of corus and co. In a grant leap, tata steels acquisition of the Anglo dutch steel ajor courus has the former to th fifth position form 56th in global steel production capacities of 110 million tonnes, tata courus with a capacity of 23.5 million tonnes, will be only 5-7 million tonnes shy of the next three players Nippon Steel, Posco and JFE steels. At the same time, it will also have players such as baosteel, us steel and ThyssenKrupp breathing down its necking the global sweepstakes.

It could be the largest deal by an Indian company and the largest steel deal ever, aftger Arcelor Mittal. The \$12.1 billion acquisition of the UK based Steelmaker Corus by Tata steels has fetched theIndian Group several awards and recognitions.

It was ranked among the 10 best business deals of 2007 by time magazine. The winners for Asias Best deals of the year awards', published in the latest issue of the CFO Asia Magazine. Tata steel produced more than five million tonnes in the year ending March 2006. It has 3.8 billion in annual turnover Tata steel would emerge as the country largest steel maker, superseding public sector giant Steel Authority of India, with a total capacity of 23 million tonnes a year from the existing 5 million tonnes. SAIL is at the top of the ladder with a production capacity of 14 million tonnes a year. But to make the most of the deal, tata has to manage several variables including steel prices, raw material supplies and interest costs in the \$8 billion debt that is being raised to found the deal.

Jindal and Ispat Deal:

Jindal Steel Works became the country largest steel maker by capacity after announcing a \$3 biliion deal to acquire bebt laden Ispat Industries, this deal took place on 22nd December. Jindal controlled company by 41.3% inIspat through a preferential issue of fresh shares, which reduce the Ispat promoters stake to 26% lenders to ispat owners borrowing by using the strength of its balance sheet.

Ispat Industries is part of the ML Mittal business family to which global steel tycoons Ln Mittal also belongs. At 3.3 million tonne, Ispat industries is amongthe smaller private steel companies and has been targeted by various steel makers for its technology and coastal location which makes it easier to export.

Ispat shareholders had last year approved a proposal to allow lenders to convert at Rs. 14.75 a share. The entry of a large strategic investor into Ipat will strengthen in balance sheet and enable productivity utilisation of this capacity, said Chanda Kochar Managing Director of ICICI, one of the lenders to Ispat. This transaction protects the interests of lenders and enhances value for other stakeholders.

Data Analysis & Interpretation:

Analysis of Covariance, Beta, and use of CAPM Model.

Tata Corus analysis:

Analysis of Covariance and Beta: Return = (Opening return – closing return)/ Closing Return Sum= 2.180 Counts = 973 Average = 0.002241241 Average yearly return of Tata = 67.24 % By finding the cumulative return of Tata and the sensex i.e. NSE Nifty , here returs have been compared.

Interpretation:

The abnormal returns of Tata immediately after the merger till the time period of 1.5 years are increasing. The the abnormal returns have fallendown and then have increased again till date. If we compare the abnormal returns of Tata with that of the Sense than they are more or less similar.

Thus here we can say that due to the merger or the acquisition ther eis no much change in the returns of the company.

Calculation of return by using CAPM Model:

 β = Covriance (Share, Sensex) + Variance (Sensex) Covariance of share ans sensex : - 1.4737205

Variance fo the Sensex = 0.0001282: Beta = -0.1149526 CAPM

 $\mathrm{Ke} = \mathrm{rm} \ \beta(\mathrm{r1m} - \mathrm{r2m})$

We get CAPM : 0.0607526

Interpretation:

Here the abnormal returns with that of got with the abnormal returns according to capm is drastic underperformance of the tata. Here in the beginning the performance is not so less than that of the capm but after a certain period the gap increases.

Hindalco Novelis:

Analysis of Covariance and Beta:

Return= (Opening return - closing return) / Closing Return Sum = 0.978120755

Counts = 934

Average = 0.001047232

Average yearly return of Hindalco = 31.42%

By finding the cumulative return of Hindalco and the Sensex i.e. NSE Nifty, returns have been compared.

Interpretation

In Hindalco tha abnormal returns firstly i.e. form the date of the merger till around one year is increasing. Then after it falls down bout after a certain period it increases slowly as and when time is passing. In comparison with the abnormal return ith the Sensex we can say that the abnormal returns are more or less similar.

Calculation of return by using CAPM Model:

 β = Covariance (Share, Sensex) + Variance (Sensex) Covariance of share ans sensex : 0.000197629

Variance fo the Sensex = 0.00014879: Beta = 1.3282773 CAPM

Ke = rm β (r1m -r2m) We get CAPM : -0.67652

Interpretation:

In this graph if we compare the abnormal return of Hindalco with that of the abnormal return of Hindalco due to Capm then we can see that in the beginning there is a underperformance but it is low. After a certain point the returns get more or less similar but then there is drastic underperformance of the return of HINDALCO.

Jindal steel - ISPAT: Analysis of covariance and Beta Return = (Opening return – Closing Return) / Closing return Sum = -0.02
Counts=77

Average = -0.000259

Average yearly return off Jindal = -7.77%

By finding the cumulative return of Jindal and the Sensex; Nse Nifty here returns have been compared.

Interpretation

In this graph we can represent that there is a variation in the abnormal returns earned. It is sometimes increasing then decreasing then again increasing and so on. But we see that at least it takes a high upper leap and is increasing. As to the comparison with abnormal returns of the Sensex for that same period we can say that they are more less similar and both the lines go hand in hand.

Calculation of Return by Using CAPM Model:

 β = Covariance (Share, Sensex) + Variance (Sensex)

Covariance of share and Sensex: 0.000156521 Variance fo the Sensex = 0.0001568: Beta = 0.998243 CAPM

 $\mathrm{Ke} = \mathrm{rm} \ \beta(\mathrm{r1m} - \mathrm{r2m})$

We get CAPM : -0.027725

Interpretation:

The returns achieved of Jindal are in accordance with the returns achieved through the CAPM mode. It is in line with the CAPM Model, the lines move in the same direction and there is no as such underperformance or above performance except at one stage where in the capm returns are underperformed in comparison with the abnormal returns.

Findings Suggestions and Conclusion:

Findings:

- 1. As the returns of the TATA Corus have increased after the restructuring, so the brokes are more aware of its merger in the market as compared to the other mergers.
- 2. Through our analysis, it is concluded that tata corus is given maximum returns and so it is ranked no 1 by brokers.
- 3. Change is found in first two mergers that is tata corus and hindalco novelis, while similar changes is found in Jindal Ispat, regarding the effect of restructuring on the returns.
- 4. By calculating Beta of Tata Corus which ins negative, shows that Tata share prices are not with the Market Trend.
- 5. Though Hindalco Beta is positive, its share price is going in the same trend as the market but still it lags behind.
- 6. The Beta of Jindal is positive and it is perfect in accordance with the Market Trend.

Suggestions:

1. There is no need for the investors to change their decision regarding equity portfolio by the mergers in the market.

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- 2. Here we can suggest that it does not matter whatever the preference of the investor is for the horizon of the investment, it depends on the reliability of the company.
- 3. Investors can use the concept of beta to know the differences in the return of that particular share in comparison with the returns of the index and can take the investment decisions

Conclusion:

From the calculation of Beta, we have concluded that Tata Corus whose beta is negative is not in accordance with the market trend and thus has high variability Hindalco is going as per the trend and thus has low variability. The merger of Jindal Ispat is in accordance with the market trend. In all the three mergers we can conclude that the abnormal returns achieved form the date of the merger till one year are increasing.

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Paper Title- "TATA COURUS AND HINDALCO- NOVELIS, HINDALCO- NOVELIS AND JINDAL STEEL WORK – ISPAT INDUSTRIES ON SHAREHOLDERS WEALTH: A CASE STUDY ON MERGER AND ACQUISITION"

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Vol VIII, Issue III (Winter) 2021 IMPLEMENTING NATIONAL EDUCATION POLICY 2020 IN HIGHER EDUCATION-INTEGRATION OF TECHNOLOGY USING ABC, NETF & NDEAR

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Abstract

National Education Policy (NEP) 2020 is announced by Government of India in July 2020 welcoming various new implementation in different stages of Education. National Education Policy 2020 has opened various new doors of opportunities for all educators. These changes in education system are never seen, experienced by no one. Not only school education but also Higher Education has many changes to adapt, accept and implement. This research paper will focus on implementation of NEP 2020 in Higher education in terms of Impacts and Challenges and implementing it for Academic Bank of Credit (ABC), National Educational Technology Forum (NETF) and National Digital Education Architecture (NDEAR). Welcoming National Education Policy in amidst Covid 19 was never expected but this paper will explain all salient features of NEP 2020.

Keywords: NEP2020, Higher Education, Global Citizen, NETF, NDEAR, ABC

Introduction

National Education Policy 2020 welcomed on 29th July 2020. National Policy on Education (NPE) is policy which is formulated by Government of India to promote and regulate education in India. The policy covers elementary education to higher education both in Rural and Urban area. The First NPE was announced by Government of India when Indira Gandhi was Prime Minister in 1968, then in 1986 when Rajiv Gandhi was Prime Minister which was modified in 1992 and then by Narendra Modi in 2020.

Education is fundamental for achieving full human potential, developing an equitable and just society, and promoting national development. Providing universal access to quality education is the key to India's continued ascent, and leadership on the global stage in terms of economic growth, social justice

and equality, scientific advancement, national integration, and cultural preservation. (htt)(1)

This National Education Policy 2020 is the first education policy of the 21st century and which aims to address many global objectives. The Policy proposes the revision and revamping of all aspects of the education structure, including its regulation and governance, to create a new system that is aligned with the aspirational goals of 21st century education, including SDG4, while building upon India's traditions and value systems. (htt1)(1).

National Education Policy aims to transform education system from 5+3+3+2 combination instead 10+2+3. So, the traditional education will revamp everything and will have new freedom for learners also integrating it to global level.

In this research paper we will discuss about the integration of NETF, NDEAR and ABC.

I. NEP 2020 & Higher Education

As per 21st Century requirements higher education must aim to develop good, thoughtful, wellrounded, and creative individuals. (1) NEP 2020 aims not only for skills but also for values for a global citizen, with the implementation of NEP 2020 in Higher education there are various new amendments to adapt to implements.

National Education Policy 2020 also focuses in Multidisciplinary Universities and colleges, Multiple Entry and exit, Implementation and integration of technologies. Overall Higher education system will ensure integration of professional and vocational education. It also aims towards more holistic, multidisciplinary education in terms of giving opportunities for all like students who have interest in various other activities. A complete holistic development not only incorporated vocational education but also implement soft skills education.

NEP 2020 gives us Imaginative and flexible curricular structures will enable creative combinations of disciplines for study, and would offer multiple entry and exit points, thus, removing currently prevalent rigid boundaries and creating new possibilities for life-long learning. (htt)(1)

When NEP 2020 implementations includes the attainment of Holistic and multidisciplinary goals the flexible and innovative curricula of all Higher Education institutes will also include Credit based courses and projects in the areas of community engagement and services, environmental education and value based education.

With the implementation of NEP 2020 focus is also given on Academic bank of Credits, research scope, establishment of various research centers, library, labs etc.

NEP 2020 in Higher education will also focus on Online Distance Learning (ODL) which will aim to be equivalent for systematic development regulation and accreditation of ODL and implementations will be recommended.

Internationalism of students will be also main focus of NEP 2020. Inviting students to learn here in India and vice versa. The various initiatives mentioned above will also help in having larger numbers of international students studying in India, and provide greater mobility to students in India who may wish to visit, study at, transfer credits to, or carry out research at institutions abroad, and vice versa.

II. Academic Bank of Credits

Academic Bank of Credits enables students' mobility across Higher Education Institutions. It helps in seamless integration of skills and experienced into credit based system. Credits awarded to a student for one program from an institution may be transferred / redeemed by another institution upon student's consent. Credit transfer is the key to successful study mobility. (htt2) (2)

NEP 2020 says an Academic Bank of Credit (ABC) shall be established which would digitally store the academic credits earned from various recognized HEIs so that the degrees from an HEI can be awarded taking into account credits earned. The 4-year programme may also lead to a degree with Research' if the student completes a rigorous research project in their major area(s) of study as specified by the HEI. (htt) (1)

With the implementation of Academic Bank of Credit students can avail Multiple Entry and Exit and also the credits earned will be saved and the credits can be utilized as per the required for the score and to generate the recognition for Couse completion at every different stage

For E.g.: a certificate after completing 1 year in a discipline or field including vocational and professional areas, or a diploma after 2 years of study, or a Bachelor's degree after a 3-year programme. The 4-year multidisciplinary Bachelor's programme, however, shall be the preferred option since it allows the opportunity to experience the full range of holistic and multidisciplinary education in addition to a focus on the chosen major and minors as per the choices of the student. (htt)(1)

Government of India has already initiated Academic Bank of Credit Steps in pictured form are explains as below:

ACADEMIC BANK OF CREDITS Ministry of Education, Government of India		My Account.
	_ <u>_</u>	
Academic Bank of Credits		
Enabling students mobility across Higher Education Institutions Helps in seamless integration of skills and experiences into a Credit	Based system	ABC bear of the art Could
	How it works?	
Credits get deposited	ABC	Redeem Credits
	Transfer of Credits	
"Credits awarded to a student for one program from	an institution may be transferred / redeemed b	y another institution upon students consent"

Step 1: Government of India portal for Academic Bank of Credit

Above image is available on source: https://www.abc.gov.in/

Step 2: In above image at right hand corner by clicking under My Account Tab we can register as students or Institution.



Above image is available on source: https://www.abc.gov.in/

Step 3: As per the requirement as Students if we want to register then we can add credentials for the same and then



Students's Registration

Institute Registration

Above image is available on source: https://www.abc.gov.in/

Once you register as Student all documents from Digilocker which are sinked/uploaded/need to be uploaded will be utilized in Academic Bank of Credit whereas as we know that only NAC approved Institutes can register in Institute tab for which NAD i.e. National Academic Depository will be used for management of all database.

There are enormous advantages of using Academic Bank of Credit.

III. Integration of Technology using NETF

We all know and understand and education in 2021 has its own challenges for implementations but with the changing scenario everywhere now smart phones are available and the idea which was never thought of having school also online on your smart phone was witnessed and experienced by many. Integrating technology in education is always the need of an hour as every time technological requirements changes and keep us aware of updating oneself.

NEP 2020 implementation also focuses on integrating technology in education with easier way to use and integrate all on one platform like school, teachers and parents.

The NETF will provide independent evidence-based advice to Central and State Government agencies on technology-based interventions. It will also build intellectual and institutional capacities in educational technology, envision strategic thrust areas in this domain, and articulate new directions for research and innovation. (htt3) (4)

As discussed that technology implementation require every time up gradation of knowledge, incorporating technology, implementing and finalising its usage via continuous training,

So, National Education Policy 2020 envisage setting up of an autonomous body - National Educational Technology Forum (NETF) to provide a platform for free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration and so on, both for School and Higher Education. The aim of the NETF will be to facilitate decision making on the induction, deployment and use of technology by providing to the leadership of education institutions, State and Central Governments and other Stakeholders the latest knowledge and research as well as the opportunity to consult and share best practices. (htt4) (6)

The formation of National Educational Technology Forum (NETF) to provide a platform for the free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration. (htt5)(5)

The NETF will maintain regular flow, monitoring on all activities and up gradations at various levels of State and Central.



Source: <u>https://www.linkedin.com/pulse/netf-use-integration-technology-nep-2020-ramesh-pokhriyal-nishank</u>

IV. Integration of Technology using NDEAR

The National Digital Architecture was announced by Hon'ble Prime Minister Narendra Modi in February 2021. Implementation of National Digital Architecture and NEP 2020 integrating with technology to boost digital architecture of education.

A globally pioneering effort in education - A unifying national digital infrastructure to energies and catalyze the education ecosystem

evolving NDEAR is federated. unbundled. interoperable, inclusive, accessible, which aims to create and deliver diverse, relevant, contextual, innovative solutions that benefit students, teachers, parents, communities, administrators and results in timely implementation of policy goals. (htt6)



Fig; NDEAR Principles (source: <u>https://www.ndear.gov.in/index.html</u>)

National Digital Architecture is to energies and catalyze the education system; there are different

principles for NDEAR as mentioned in above diagram like Unifying not uniform, Ecosystem Driven, unbundled and Combinable, federated but interoperable, Address Open Access, Leverage Investment, Privacy, Security trust by design, Provide choice by design, evolvable, Address Diversity inclusion and special needs.

NDEAR will enables us to provide Coherent Multi Channel, Multimodal and Learning Continuum which can be further sued linking to schools, after schools, at community centers, at home for synchronous and asynchronous, Offline or Online, Physical or digital and Self Service or assisted.



HW/SW INFRA: Smartboards, Tablets, Live Conferencing, Hosting Infra, SMS, Email, Digilocker, JAM CONNECTIVITY: Satellite, TV, DTH, Cable, Bharat Net, WiFi, Mobile Network

Fig: NDEAR multidimensional working connecting all.

(Source: https://www.ndear.gov.in/index.html)

Challenges Implementing NEP 2020

- 1. As per NEP 2020, to open more universities with monitoring proper execution and expenses, enrollment of students can be biggest challenge in implementing it for Higher Education.
- 2. For multidisciplinary education, integration of technology continuous training and creating large pool of trainers is a big challenge.
- 3. After Covid strike to come out of financial load and increasing GDP from 4.6% to 6%.
- 4. Interdisciplinary education implementation from cultural shift.
- 5. Internationalism, implementation execution of the NEP 2020 with Academic Bank of Credit where some universities will not be part of it.

Conclusion:

Implementing NEP 2020 gives the elaborative framework for the implantation of the various structures of Education system at the best. NEP 2020 comprises of various opportunities, Internationalism, opening various universities, massive change in the integration of technology and training.

Emphasis on examination system will surely affect not only for skills and also for values. More focus for relational language, vocational education and with humanities related subject.

NEP 2020 will also have integration of technology in Academic Bank of Credit, NETF and NDEAR will definitely give many opportunities for the better opportunities for Institutions, students and Parents.

The great transformation of the education system will be by 2030 if jointly we can achieve it to become superpower country.

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	Discipline	Multidisciplinary				
	Subject	Arts and Humanities (all), Social Sciences (all)				
	Focus Subject	History and Philosophy of Science , Law				

RECENT TRENDS IN PORTFOLIO MANAGEMENT USING ARTIFICIAL INTELLIGENCE

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Abstract:

A crucial problem that is faced by finance domain is volatility and nonlinear variations in the data with reference to time. It is quite important to handle this time dependency. The available traditional models are not capable to manage these variations. Financial companies are majorly focusing of AI and ML algorithms as tool to support customer service by focusing on risk management. Some most popular AI techniques includes Artificial Neural Networks, Natural Language Processing, Support Vector Machine, Decision Tree, Genetic Algorithm, Cluster Analysis etc. In recent years, series of computer technologies are applied in the area of finance. Artificial Neural Network (ANN) has proved a trending method which is implemented in financial market. Contemporary breakthroughs in artificial intelligence have developed many systems that compete or even surpass human intelligence in the filed of Investment management. Implementation of AI in investment management builds new challenges and risks. Accuracy of proposed model will be the same as the data provided and hence data integrity and model opacity matters a lot in case of volatile financial market.

Keywords: Finance Management, Portfolio Management, Artificial Neural Network, Investment Management.

Introduction:

Technology is considered as a core component of asset management. It is assumed as a critical factor in investment management process that includes trading, operations, client services, and risk management. Technological development has empowered investment management companies benefits ranging from financial timely data analysis, combination of data from multiple data sources that can assists in decision making process. Financial companies are majorly focusing of AI and ML algorithms as tool to support customer service by focusing on risk management.

Artificial Intelligence can be referred as fiction science to people but it can be seen as recent technological breakthroughs. Raw material is provided by the rise of big data, hardware is provided by GPUs i.e., graphical processing units and innovative AI algorithms opened up new areas like natural language processing (NLP).

Artificial intelligence is a broad term used to illustrate any technology that makes the computer behave in a way that requires prior human intelligence. Amazon's Alexa and Apple's Siri are examples of AI that uses natural language processing algorithms for interpretation. On the other hand, AlphaGo defeated Go Player, a world champion in a highly complex game.

With AI, investment managers are becoming proficient through updated data that can be easy to access and simple to understand. AI is all about providing right data at the right fingertip of investment managers. This enables faster and compressive client services. AI can be presumed as "man with machine"

Some most popular AI techniques includes Artificial Neural Networks, Natural Language Processing, Support Vector Machine, Decision Tree, Genetic Algorithm, Cluster Analysis etc. In recent years, series of computer technologies are applied in the area of finance. Artificial Neural Network (ANN) has proved a trending method which is implemented in financial market. From the range of AI techniques, uncertainties of financial market are better handled by ANN through trend analysis and pattern recognition.



Fig. (1): Benefits of AI in Finance

Machine learning is the most important branch of artificial intelligence whose main focus is on algorithm development that improves automatically through experience. Machine learning can assist financial companies in better decision making in this volatile market by plummeting negative impacts of cased by human prejudices on investment management process. Statistical techniques such as discriminant or regression analysis, data distribution fundamentals are required to provide input data. As compared to these, ANN doesn't need any data distribution fundamentals, hence can be employed on wide range of problem areas. In view of the fact that variable financial market, ANN can easily indulge new upcoming data for financial management [1].

With respect to financial market portfolio management and risk assessment are major domains for AI applications. Investment management is an integral part of financial management and hence are selected for our study. In this paper, researchers featured contribution in financial domain.

ANN Applications in Financial Domain

ANNs are referred to as computational tools that can be effectively used for modelling real world problems of various disciplines [2]. ANNs can be considered as a biological neuron that can act as a source of stimulus for various techniques covering varied fields of applications [3]. Overall, ANNs are considered as information processing systems that makes use of earnings and generalization capabilities that are adaptive in nature. This adaptivity helps in addressing the problems such as information processing, decision making, forecasting etc. Also, it is proved as an effective tool for handling fluctuating financial market in with reference to decision making, prediction and forecasting [4][5][6].

In connection with this, various studies have been proposed in order to review and classify applications of ANN in finance [7][8]. It is evident that portfolio management, prediction, credit evaluation, risk management have significantly improved with ANN.

Portfolio Management

Artificial Intelligence could essentially transform trading processm asset allocation, risk management and other extents of portfolio management. Some automatic portfolio advisory systems with better performance of protfolio thereby rebalancing and managing risks with nominal transaction cost. Optimal asset allocation in the instruments such as stocks, bonds and mutual funds considering time and risk apetite is a critical task. People are providing diversified portfolios containing varieties of securities.

Motiwalla et al.[9] employed ANN and regression analysis to study the impact of predictable variations in US stock returns and stated that ANN models performs better than regression. Yamamoto et al [10]. proposed multilayer Back Propagation Neural Network (BPNN) for prediction of prepayment rate of mortgage using correlation learning algorithm.

Lowe et al. [11] devised analogue NN for construction of portfolio under specified constraints. They developed a feed forward NN for short-term equities prediction as a problem in nonlinear multichannel time series forecasting.

Adedeji et al. [12] presented ANN for economic data analysis of risky projects. Prediction of potential returns on investment, NN model is used. Based on the results obtained from network, financial managers could select the financial project by comparing it to conventional models. Survey conducted in the present study for portfolio management concluded that ANN performs better as compared to further traditional methods. Research papers surveyed for the present study states that ANN more specifically BPNN performs far better than other traditional methods.

Zimmermann et al. [13] illustrated application of Back/Litterman portfolio optimization algorithm using an error correction NN. Optimization of portfolio is done with specific allocation that comply investors constraints and controlled risk associated to portfolio. The method is tested by

internationally diversified portfolios from 21 financial markets from G7 countries. They stated that their approach exceeds conventional portfolios like Markowitz's mean-variance framework. Ellis et al. [14] accomplished portfolio analysis by comparing randomly selected portfolio method and general property method with BPNN and observed that ANN performs better.

Risk Management:

Financial risk management (FRM) is the method of dealing economic value in a firm with the help of financial instruments. FRM is used to manage risk exposure especially market risk and credit risk. FRM is a process in which risk associated with investment is identified and steps are undertaken in order to them. FRM can be qualitative or quantitative and focuses on how and when hedging has to be done using financial instruments to manage exposure to risk.

Treacy et al. [15] discussed about internal credit risk of commercial banks of portfolio and individual exposures. Author highlighted internal credit rating systems of 50 bank organizations of US. Relationships between different options for rating system, ratings and impact of internal rating systems are studied and concluded that increasing stresses upon rating systems is very important for both regulators and banks. Zhang et al. [16] studied risk associated with bankruptcy prediction using neural networks. They studied neural discriminant model probabilistic neural network model for bankruptcy prediction. For the study they used data of Gas and Oil industries from US. Their findings says that discriminant analysis gives better results especially for bankrupt companies.

Tam et al. [17] introduced neural-net technique to accomplish discriminant analysis into business research. A neural-net signifies a nonlinear discriminant function as a system of connections amongst its processing units. Authors compared KNN, ID3, Logical regression and linear classifier with neural-net for banks and found that neural-net is most promising method for evaluation of condition of a bank in terms of adaptability, accuracy, robustness and predictivity.

Huang et al. [18] researched corporate credit ratings from US and Taiwan. Authors studied support vector machine (SVM) and back propagation neural network (BPNN) for prediction and achieved around 80% accuracy. Other aspect of research was to enhance interpretability of AI based models and found that financial input variables to neural network model are relatively important.

Table (1) below summarizes the contribution of various researchers in the field of application of ANN for portfolio management.

Author	Objective	Data Set	Techniq	Compared	Evaluation
			ue Used	With	Measures
Stoppiglia H,	Portfolio	The data base	ANN	Statistical	Classificatio
et. al.	Management	comprises 398		Method	n
		companies,			
		with 172 A			
		companies,			
		172 B			
		companies,			
		& 54 C			
		companies			
Hans Georg	Portfolio	Financial	ANN	Mean-	Forecasting
Zimmermann,	Optimization	markets of the		variance	
Ralph		G7 countries		theory	
Neuneier and					
Ralph					
Grothmann					
Siemens AG					
Ellis C,	Portfolio	Australian	BPNN	Random	Performanc
Willson P	Selection	Property sector		selection	e measure
		stocks		portfolio	
Fernandez A,	Portfolio	Hang Seng in	ANN,	Heuristic	Portfolio
Gomez S	selection and	Hong Kong,	GA and	methods	selection
	Portfolio	DAX 100 in	SA		and
	Management	Germany,			optimizatio
		FTSE 100 in			n
		UK, S&P 100			
		in USA and			
		Nikkei 225 in			
		Japan			
Freitas FD,	Portfolio	IBOVESPA	BPNN	Mean-	Prediction
De Souza AF,	selection and			variance	
De Almeida	Portfolio			model	
AR	optimization				
Po-Chang Ko,	Portfolio	Taiwan stock	ANN	Traditional	Portfolio
Ping-Chen	selection and	exchange		ANN model	optimizatio
Lin	Portfolio				n
	optimization				

Table (1): Application of ANN for Portfolio Management and Risk Management

Chiang W-C,	Asset	US mutual	BPNN	Regression	NAV
Urban TL,	Forecasting	fund		model	prediction
Baldridge GW					
Chye KH, Tan	Credit risk	Australian and	SVM	Neural	Accuracy
WC, Goh CP	assessment	German credit	classifier	networks,	
		data sets		genetic	
				programming	
				, and decision	
				tree	
				classifiers	
Fanning,	Managerial	Management	ANN	Generalized	Accuracy
Cogger and	Fraud	database		adaptive	
Shrivastava	Detection			neural	
				network	
				architectures	
				(GANNA)	
				and the	
				Adaptive	
				Logic	
				Network	
				(ALN)	
Kurt Fanning,	Fraud	FFS.	ANN	Statistical	Efficiency
Kenneth O.	Detection			methods	
Cogger	<u> </u>	070		T 1' 1	
R. Brause, T.	Credit card	GZS	ANN	Traditional	Prediction
Langsdorf,	Fraud			systems	
M. Hepp	Detection				
Fen-May Liou	To detect	Taiwan	ANN	Logistic	Prediction
	fraudulent	Economic		regression,	
	Inancial	Journal data		neural	
	reporting	bank and		networks,	
		Taiwan Stock		and	
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		Data stream database			
Zhang et al.	Bankruptcy prediction	COMPUSTAT database	ANN	MDA, ID3	Classificatio n
Tam KY, Kiang MY	To perform discriminant analysis in business research	Bank default data	Neural Network	Linear classifier, logistic regression, k NN, and ID3	predictive accuracy, adaptability

Conclusion:

Contemporary breakthroughs in artificial intelligence have developed many systems that compete or even surpass human intelligence in the filed of Investment management. Artificial Intelligence technique is a central theme behind present research. Researcher examined various techniques employed for investment portfolio management. From the literature survey, it is observed that Artificial Neural Network (ANN) is quite an effective technique for portfolio management. Effective way to implement ANN for risk management is a crucial task. It is also observed that determining required size and structure of a network is very crucial step. Implementation of AI in investment management builds new challenges and risks. Accuracy of proposed model will be the same as the data provided and hence data integrity and model opacity matters a lot in case of volatile financial market.

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UNDERSTANDING ITIL AND ITS IMPLEMENTATION

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Abstract:

Information Technology Infrastructure Library (ITIL) guidelines are effective for standardization. This research paper focus on the understanding of ITIL and its service management model implementation. This paper lists the ITIL implementation level at different organizations, reasons behind implementation and satisfaction level.

Keywords: Information Technology Infrastructure Library (ITIL), ITMS

Introduction

Information Technology Infrastructure Library (ITIL)

The IT Infrastructure Library (ITIL) is a library of volumes describing a framework of best practices for delivering IT services. The ITIL, focuses on business and IT integration. ITIL's systematic approach to IT service management can help businesses manage risk, strengthen customer relations, establish cost-effective practices, and build a stable IT environment that allows for growth, scale and change.

In this era of technology, each business and industry rely on IT services partially or completely. There are thousands of companies worldwide, facilitating other organizations through their IT solutions. It enables organizations to use IT infrastructure in business change, transformation and growth of strategic assets. Such as capabilities, processes, technologies that plays a significant role in achieving company's objectives. Likewise, the goal of ITIL is to facilitate businesses by delivering value IT support. It is a technology process management framework which focuses efficient yet an effective improvement and upgrades.

ITIL Process Model

The ITIL process model has the following components as shown in the figure1

- Service Strategy: Service Strategy is about the selection of services a Service Provider will offer to customers. Service Strategy is also about establishment and management of the broadest policies and standards which govern the way a Service Provider operates.
- Service Design: The Service Design lifecycle phase is about the design of services and all supporting elements for introduction into the live environment
- Service Transition: Service Transition is concerned with management of change and, more specifically, with the introduction of new and changed services into the live environment.
- Service Operation: The Service Operation phase of the Service Lifecycle is concerned with ensuring that services operate within agreed parameters. When service interruptions do occur, Service Operation is charged with restoring service as quickly as possible and with minimizing the impact to the business.
- **Continual Service Improvement:** Continual Service Improvement is about the alignment and re-alignment of services, processes, functions, etc. with changing business needs. It is also concerned with the consistent application of quality management methods to the overall Service Management effort.



Figure 1 ITIL Process Model

Benefits of implementing ITIL practices include:

- Calibration between IT and the business process
- Improved service

- Cost effective by intelligent use of resources
- Accuracy in business management

IT service management system-

Based on user requirements, ITSM should program the service plane. Service programming has four parts, distinguish the service level, management of service stratagem, management of service budget, maintaining life cycle of service. (figure 2)

- Service strategy gives strategic view to the business and helps to deliver value to the customer. Service design process, creates blue print of service required by customers (end users) strategically converted into business objectives.
- Service Transition focuses on how to optimize change to IT service. It adds the process of transition planning and support, service testing and validation, knowledge management.
- Service operations represent day to day management of services.
- Help desk becomes only place of contact (single point of contact –SPOC) to all kind of users. Help desk will guarantee to give same service quality to same level of users.
- The continual Service Improvement (CSI) ensures that IT continually aligns and realign IT services to changing business needs.





Implementation of ITIL

From the list of NASSCOM and MCCIA directory, we have selected around 250 IT organizations in and around Pune who are using ITIL based framework. The results collected from the

1. ITIL Compliant Tool Utilization

Industries are now tending towards ITIL framework to smooth-out their day to day activities. As organizations are using ITIL framework, it was then asked that which ITIL compliant tool they are using. 27.1% respondents are using open source ITIL compliant tools, 23.8% are using in-house tools. 14.7% are using proprietary tools like Service Now, Helpdesk, Fresh service, SAASBMC remedy etc. And 24.5% respondents are not using any ITIL compliant tool.



Figure 3 ITIL Compliant Tool

2. Duration of ITIL Implementation

It is also important that how long organizations are using ITIL framework. 34.1% organizations are using ITIL framework form last three years. 29.3% organizations are using ITIL framework are utilizing ITIL framework from two years. Gradually organizations prefer ITIL framework.



Figure 4 Number of years of ITIL implementation

Reasons for ITIL Implementation

ITIL is implemented in various types of organizations. Accordingly there are different roles of the employees such as Main driver who leads the ITIL implementation activity and instructs how to follow the service lifecycle of ITIL implementation, Participants are the people involved in the

ITIL implementation process, Trainer/Consultants is the expert who delivers the training to all the participants, **Key stake holders** are suppliers, other internal and external departments or whoever is associated with the business and Along for the ride means the people who are not directly involved in the process. Role wise distribution is given in the figure below. Around 50% respondents are the Participants and 15% are Trainer/Consultants.



Figure 5 Stake Holders Participation

- 1. **Internal compliance:** The main reason for ITIL framework implementation is internal compliance. This incorporates the procedures designed by an operational entity such as educational institute or corporation that specifies how user shall operate the instruments at their end. These principles are designed to ensure security and enhance the productivity.
- 2. External compliance: External compliance is a question of following the principles designed by an entity outside the internal network structure, like a government. Governmental rulebooks may need the retention of e-mails and other electronic documents for a specified time period, for example. External compliance may also necessitate the installation of supervisory controls or the compulsory presence of hidden back doors accessible only to law enforcement bodies. According to 53.5% respondents, ITIL external compliance is the most important factor for choosing ITIL framework.
- 3. **Quality of service:** IT services are available 24/7. At any point in time, if outage is there then immediate rectification is possible with ITIL tools. 53.5% respondents consider that quality of service is increased after implementation of ITIL framework.
- 4. **Overall service management:** Overall service management process is automated with ITIL tool. Single point of contact is there for all the queries. Hence effect on the productivity of organization there by reducing the investment cost.

Satisfaction Level on ITIL implementation process

1. **Service Strategy**: ITIL strategy means where, which and how ITIL service is to be stared. And this is based on the gathered requirements. 46.9% respondents are satisfied with ITIL strategy.

- Service Design: Service design is the steps or prototype generation. Once strategy is decided, it is quite easier to build a prototype based on the gathered requirements. According to 56% respondents' service design is the major factor while measuring the progress of ITIL implementation. Once prototype is ready, it is important to transform the design into action. 49.1% respondents are satisfied by service design.
- 3. Service Transition: Service Transition focuses on how to optimize change to IT service. For 57.51% respondents' service transition is an important progress factor and are satisfied with the existing service transitions
- 4. Service Operation: Service operation is the actual development and implementation of ITIL framework. For 53.8% respondents' service operation is an important progress factor and are satisfied with the existing service operations.
- 5. **Continual Service Improvement:** Continual service Improvement is applicable at any stage like in six-sigma. 50.9% respondents are satisfied by continual service improvement.

Conclusion

Information Technology Infrastructure Library (ITIL) framework is studied and discussed in this research paper. Based on the ITIL model implementation of ITSM life cycle is considered for surveying. Based on the primary data collected we have listed the reasons for ITIL implementation and analyzed overall level of satisfaction of ITIL implementation process on five broad areas.

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SOCIAL MEDIA THREATS: ISSUES AND CHALLENGES

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Abstract

Social media users' concerns about their privacy and security have pointed in recent years. Many users forced them to rethink their relationships to social media and the security of their personal information because of the various incidents of data breaches that have alarmed them. Social media platforms, which collect and store huge amounts of personal information, become attractive targets for hackers. This paper will explore how the internet and social networks influence personal information, as well as how privacy becomes a danger and how to implement security awareness to avoid potential privacy concerns. The goal of this paper is to look at social media security concerns and existing mitigation measures in order to gather information and propose best practices to help businesses deal with them.

Keywords: Privacy, Social Network, Security Threats, Cyber stalking, Cybersecurity.

Introduction:

Millions of people use the internet as a primary mode of communication. However, a user must be aware of his data security and privacy, as well as possess the necessary knowledge to avoid any potential threats to the same. Users' privacy concerns have risen dramatically on social networking platforms. With the rise of social networking sites, the default settings share information with the service provider, so users are advised to customize the settings in order to maintain more privacy. Despite this, cyber security breaches are not uncommon.

User privacy and network security is indeed a big hassle to date. Apart from the potential cyberattacks, inefficiency to counter such situations is a concern. Online networks have significant merits. User information shared on social network platforms is highly vulnerable to threats. Thus, privacy and security issues come into play.

Social networking very often makes users susceptible to cyber security threats and equally compromising their privacy. Privacy is likely to be attacked if not utilized responsibly. The creators recommend that a restriction in which protection can be attacked is through unapproved

> access to social user information because of privacy break or poor strategies disablement. Furthermore, they estimated that privacy intrusion can occur as an optional utilization, where information gathered for one design is used to meet different closures, without the knowledge or consent of the information proprietor.

> However, security problems can be addressed if appropriate information strategies and practices provide people control over the disclosure and use of their data. In a similar vein, the hypothesis states that disclosure is contingent on robust instruments that allow users to regulate the amount of information they reveal based on their goals, learning, and attitudes toward security. Such limit restriction can be done in the context of online social range interpersonal communication by utilizing privacy settings. These security settings enhance users' ability to reveal information and also pave the way for providing information about settings to those who require it. Social Media:

Since people consider social media as a personal communication tool, the importance of safeguarding their information stored in these social networking sites is often taken for granted. With the passage of time, people are putting more and more information in different forms on social networks which can lead to unprecedented access to people's and business information. The amount of information stored in social networks is very enticing for adversaries whose aim is to harm someone.





Social networks can be divided into four broad categories: 'social connections, "multimedia sharing,' 'professional,' and 'discussion forums'. Fig 1 depicts the various types of social networking sites that can be broadly classified.

In social connection, People use this network to connect with people and brands online. Although there are other types of social networking sites available online, this type certainly defnes social media now. Sites that come under this category are 'Facebook', 'Twitter', 'Google+', 'Mys-pace'.

This paper presents a study of social networking usage, privacy issues of Facebook and Whatsapp. In addition to this, cyber threats in pandemic situations are discussed and we have suggested relevant cyber security guidelines to achieve trustworthiness in online social networks.

Social Media Usage

Currently, in the era of advanced internet technology, Social Network becomes an incredibly popular tool on the internet and becomes widely used around the world. It is powerful tool in any ages of people especially among teenagers and young adults in the purpose of communication and self- expression, and it is easy mean of sharing information with other users who has a common interest such as photos, likes, dislikes, interests, relationship status, job details, current town details, political views, and religious views. Unfortunately, though this technology most users are not aware of the privacy risk associated whenever they share sensitive information in the internet, so that privacy concern will be raised among those online interactions if their personal information has been shared to other people.

Correspondingly, more than 78% of correspondents did not concern their information to be targeted by cyber-attacks or cyber-crime. The survey also found that one often has ever conversed with anonymous people about personal information, while 15% sending personal information which has not been exposed anywhere before through social networks. 12 % of correspondents using public Wi-Fi to fill online account information, but only 18% of them who concerned that their personal information disclosure is excessive or not and 7% seriously considered their communicating through social networking is one of major factor which information will be lose.

Every social network site asks users to accomplish a profile which contains privacy information including name, address, email and so on. Though this information is claimed to be dangerous which can be easily accessed by an unexpected person, what is happening today, most social network users tend to public real identity and post private information where privacy will be raised. Accordingly, they described that online social networking data is of great help to the researchers, analysts, and any kind of third party who has the opportunity to mine and use data for particular purposes such as spamming, fishing, targeted advertising and so on. This is because sensitive information and their interaction are stored in social OSN servers are not always honest and transparent due to the nature of OSN allows third parties to collect and analyze easily.

However, sometimes there is a need for users to reveal personal information for a particular reason, as demonstrated by. They also illustrated that users have to reveal the personal information on social networks in order to be effective and do this for maturing their identities. Furthermore, in the face of information of behavior of users are able to conceptualize a continuum which describes information privacy protection behavior. This means information can be disclosed accurately on one side, but not for other sides. By the way, users can participate and can protect their personal information at the same time by partly disclosing them.

According to Ankit Kumar Jain, Somya Ranjan Sahoo and Jyoti Kaubiyal, Facebook and Myspace are among the most preferred social networking sites. Since a large amount of the online population utilize social media platforms, it has become a major medium to promote business, awareness campaigns. Since people consider social media as a personal communication tool, the importance of safeguarding their information stored in these social networking sites is often taken for granted. With the passage of time, people are putting more and more information in different forms on social networks which can lead to unprecedented access to people's and business information. The

amount of information stored in social networks is very appealing for opponents whose aim is to harm someone. They can create havoc worldwide with this huge amount of information in their hands. They have presentenced different statistics for OSN security in "Statistics of online social network and media" and the positive and negative impacts of online social networking. They depicted different threats that affect the user behavior in the OSN platform. Authors described the reason behind the OSN security issues in-depth and the defensive solutions for various threats. Authors portrayed certain security rules to protect your system, account, and information. [27] More than half of the world now uses social media (58.4%) 4.62 billion people around the world

More than half of the world now uses social media (58.4%) 4.62 billion people around the world now use social media, 424 million new users have come online within the last 12 months. The average daily time spent using social media is 2h 27m. [14]

Facebook was the first social network to surpass one billion registered accounts and currently sits at more than 2.89 billion monthly active users. In 2022, Social networking sites are estimated to reach 3.96 billion users and these figures are still expected to grow as mobile device usage and mobile social networks increasingly gain traction in previously underserved markets. [15]

There were 448.0 million social media users in India in January 2021. The number of social media users in India increased by 78 million (+21%) between 2020 and 2021. The number of social media users in India was equivalent to 32.3% of the total population in January 2021. [16]

Research Objectives:

- 1. To study the privacy issues of social media
- 2. To recommend security practices for data privacy.

Methodology

As the research paper is of conceptual and review nature, the researcher has applied exploratory research design by using varied secondary data availed from the secondary data sources. Based on the secondary data and review, the researcher has reported on various emerging trends and issues and challenges in digital India. Research reports, journal and newspaper articles from eminent writers have been reviewed.

Threats to Privacy on Social Media

Criminals are expert at tracking social media users and finding sensitive information, stealing personal data. Typical social media threats are as follows.

Data Mining

People contribute personal information, such as their name, birthday, geographic location, and personal interests, through their social media accounts, and leave a data trail on the internet. Companies also collect information on user activities, such as when, where, and how users interact with their platform. Companies store and use all of this information to better target advertisements to their users. Users' data is sometimes shared with third-party organizations without their knowledge or consent.

Phishing Attempts

Phishing through an email, text message, or phone call means attempting to access sensitive personal information. These communications persuade recipients to share sensitive information such as passwords, banking information, or credit card numbers. Phishing attacks often pose as social media platforms.

Malware Sharing

Malicious software is software that is meant to obtain access to computers and is used to steal sensitive data (spyware), extort money (ransomware), or profit from forced advertising (adware). Malware distributors find social media sites to be a perfect delivery system.

Botnet Attacks

Social media bots are automated accounts that create posts or automatically follow new people. A large group of bots form a network known as a botnet. Bots and botnets are widespread on social media and are used to steal data, send spam, and launch distributed denial-of-service (DDoS) attacks that help cybercriminals to access people's devices and networks.

Social media bots are accounts that automatically create posts or follow new individuals on social media. A large group of bots form a network known as a botnet. Bots and botnets are widely used on social media to steal information, send spam, and execute distributed denial-of-service (DDoS) attacks that allow cybercriminals to get access to people's devices and networks.

Facebook

Facebook may be accessed from a wide range of Internet-connected devices, including desktop computers, laptop computers, and smartphones. Users can construct a customized profile after registration (the minimum age requirement has been 13 since 2006). This includes information such as their name, occupation, schools attended, and so forth. Users can add other users as "Friends," send messages, update their status, share images, videos, and links, use various software applications ("apps"), and receive notifications about other users' activities. Users can also join user groups organized by employment, school, hobbies, or other topics, as well as arrange their friends into lists like "People from Work" or "Close Friends."

Privacy Issues:

Facebook Like buttons track us even if we don't click on them. When we click a button on a website, we are broadcasting our interest not only to our friend, but also to Facebook and its advertising partner. Also, if we do not click on a like button, the number of times we visit is counted.

The new TimeLine format brings old lapses in judgment to light: Timeline, which was introduced in late 2011, allows people to easily search back through our old Facebook posts, which was previously very difficult. That could expose private matters and embarrassing photos that we have long since forgotten about.

Cyberstalking is the observation of an individual via the internet, email, or some other type of electronic correspondence that causes fear of violence and interferes with that individual's mental peace [18]. It is an infringement on a person's right to privacy. The attacker tracks the victims' personal or confidential information and uses it to threaten them with constant and persistent

messages throughout the day. This behavior causes the victim to be extremely concerned about his own safety and causes him to experience trouble, fear, or disturbance [19].

Most people nowadays share personal information such as their phone number, address, location, and schedule on social networking sites. Furthermore, they share their location-based data. An assailant can collect this information and use it for cyberstalking [20].

WhatsApp

WhatsApp Messenger is a cross-platform instant messaging service that allows users of iPhone, BlackBerry, Android, Windows Phone, and Nokia smartphones to send and receive free text, image, video, and audio communications. WhatsApp is particularly popular among mobile phone users who do not have unlimited text messaging. WhatsApp has group chat and location sharing features in addition to simple texting. WhatsApp employs a customized version of the open standard Extensible Messaging and Presence Protocol on a technical level (XMPP).

Privacy issues:

WhatsApp has a terrifying vulnerability that could be exploited to ruin your life. WhatsApp hackers could exploit a terrifying 'vulnerability' to break into people's accounts and send fake messages. This could be disastrous, as attackers could destroy people's relationships or careers by sending false texts. Check Point Research's security researchers discovered the flaw. The team claims to have notified WhatsApp but also provided Metro.co.uk with an explanation of how it is possible to spoof a group conversation to send fake messages. They claim that a sufficiently motivated hacker can: Change the text of someone else's reply to a group chat, essentially putting words in their mouth. In a group conversation, use the 'quote' feature to change the sender's identity, making it appear as if it came from someone who is not even a member of the group. This could be used to incriminate someone or close a fraudulent deal, for example. Send a private message to another group member disguised as a public message to all, so that when the targeted individual responds, it is visible to everyone in the conversation. The exploit involves hacking the WhatsApp algorithms, which encrypt messages so that only the sender and recipient can see them. These algorithms can be decrypted and one can see all the parameters that are actually sent between the mobile version of WhatsApp and the Web version.

Cyber Security amid pandemic

In addition to being life-threatening, COVID-19 has destabilized businesses, damaged daily lives, and induced stress and anxiety in individuals. It has stunned the global economy. Researchers and scientists have developed collaboration platforms for the discovery of COVID-19 vaccines and drugs. The production of the vaccine will take significant time to be available for the general public due to testing, safety, and quality assurance measures. [17]

The virus's rapid spread and long incubation period pose novel societal challenges. Nonetheless, one of the positive aspects of this pandemic is that it is occurring at a time when remote
communication is at its peak. This communication's tools and devices are widely available. It is now possible to communicate with coworkers, friends, and family thanks to advances in technology. Online video conferencing apps like Zoom, Microsoft Teams, and Google Meet have seen an exponential increase in the number of new users signing up on a daily basis. [22]

However, in the purview of cybersecurity, teleworking bears a potential risk. Even though employees are safe at home, whether the office data transacted daily is secured or not is still debatable.

Apparently, the configuration of computers at homes of employees are no match for the systems deployed in the office. Hence, the security of the data transacted on the networks in teleworking is highly prone to unauthorized access that can even put the business data at risk of misuse.

Therefore, the employees must refrain from insecure internet providers, to avert the risks of cybersecurity threats.

Employees make use of Virtual Private Networks(VPNs) to ensure online privacy while transacting office data. However, VPNs possess security breach threats, which cannot be neglected. [17]

Cyber threats in the pandemic

Nowadays, cybersecurity has become extremely difficult due to technological advancement. It's common for hackers, attackers, and scammers to take advantage of emergencies, especially when people are scared, desperate, and vulnerable. The coronavirus outbreak is no different. The coronavirus is being used by bad actors all over the world as a new tool for their evil deeds such as hacking, attacking, or scamming.

Malicious Domains and websites

The words "coronavirus," "corona-virus," "covid19," and "COVID-19" have appeared in a wide number of registered domains on the internet recently, and daily more and more increase has been witnessed. Although some are legitimate web sites, cybercriminals build thousands of new sites every day in which spam campaigns, phishing, malware spreading, or servers are compromised. These domains are used to carry out different scams, or they are used to act as a honeypot for the target users. Hackers get personal data through this procedure and then use it for their intended

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There has been an increase in websites that claim to be applications that are supposed to protect users from COVID-19, such as www.antivirus-covid19.site and www.corona antivirus.com. According to Malwarebytes' blog [23], the website www.antivirus-covid19.site is now inaccessible. The website www.corona-antivirus.com mentions that their application, called "Corona antivirus," has been developed by scientists at Harvard University. But in reality, installing this application infected the system with a malware called BlackNET RAT.

Mobile threats

In this modern era of ubiquitous computing, smartphone users are at their peak. Life without smartphones and gadgets has become impossible, and the use is increasing on a daily basis. At the same time, it's a great opportunity for bad actors to take advantage of it. An application named CovidLock (Ransomware) comes from a malicious Android app that is supposedly helping to track COVID-19 cases. An android app which is offering face masks and safety kits to the worried individuals. Once an individual installs the application, this app delivers a SMSTrojan, which collects the contact list of the victim phone directory and sends auto SMS to spread itself [23].

Privacy concerns

The data-sharing company by technology is playing a role in assisting various governments and their officials in overcoming the dizzying spread of the novel coronavirus by maintaining lockdowns and social distancing, but it is also keeping privacy experts on edge. Apple, Google, and Facebook are already collecting massive amounts of data in order to use it for advertising purposes. Some of them are now providing personal data to public health authorities, government agencies, and even researchers, such as location and other personal information. This could be useful in overcoming the situation, but it also jeopardizes public privacy, and there is concern that this data could be used even after the pandemic is over.

Many industries and educational institutions have recently gone online. Employees all over the world are continuing to work from home by using online communication and conferencing tools and software. Consumers must agree to some terms and conditions before they can sign up for the applications, which include their privacy and security data collection. [24]

Cyber security guidelines

Some common guidelines we need to follow for reducing the effect of threats.

• Selective with friend request

Before accepting a friend request, one should thoroughly examine the requester's profile. Different groups can be created for sharing different types of information, such as a group for colleagues and a group for relatives.

• Sharing Multimedia

Employees should be aware of their company's policy on sharing content on social media before putting any information on their profiles.

- Third-party programmes and links
- When clicking on links provided by various authors, one should be cautious. It might be a malicious website attempting to obtain the user's credentials.
- Two Step Validation
- Wherever possible, enable two-step authentication for all of your social media accounts. This adds another degree of protection to the account. Even if an opponent discovers a user's password, he will still require a second factor to authenticate himself. The second factor is a oneof-a-kind, time-sensitive code that users get via text message.

• Privacy settings

Users should become familiar with the various social media platforms' privacy and security settings and use them [26]. Each platform's privacy and security settings are different. Every platform has settings, configuration, and privacy sections that allow users to control who and what organizations can see what aspects of their professional lives. Sites' default privacy settings should not be used.

The more details disclosed, the easier it is for an opponent to steal identity or commit other cybercrimes using that information. As a result, sharing of information should be restricted.

• Guidelines for employees working from home

Best practices and procedures for regulating the sending of emails or other content to private email addresses and/or cloud storage should be presented to employees.

• Phishing awareness is important. When receiving emails, employees should be cautious and double-check the sender's address for validity.

• Employees should make sure that their home Wi-Fi is password protected.

• Use a virtual private network (VPN). Virtual private networks (VPNs) provide an additional layer of security for internet use at home. They cannot on their own be relied upon to prevent cyberattacks, but they can be a useful barrier against cyberattack. Businesses can use a few basic cybersecurity tactics.

• Apply new technology and tools. To enhance the security of remote working, companies can utilize advanced technologies like host checking (a programme that checks the security posture of an endpoint before approving access to corporate information systems).

• Techniques of intelligence gathering. Businesses should encourage proactive use of cyber threat information to discover relevant indications of attacks (IOC) and mitigate known assaults.

• Risk management is the management of risks. For better risk management, businesses can use governance, risk, and compliance (GRC) systems. GRC solutions give you a clear picture of your company's risk exposure and help you connect the dots between different risk disciplines (e.g. cybersecurity, operational risks, business continuity) [25]

Conclusion

This pandemic has shown us that preparing for cyberattacks is crucial to successfully reducing the risks. The capacity to respond swiftly to unanticipated occurrences can help to mitigate the damage of a cyberattack. Companies that have already profited from secure remote working capabilities will be better prepared to deal with the ever-increasing threat of cybercrime. Companies who were caught off guard will need to review their cyber threat exposure rapidly and prioritize actions to remediate cybersecurity weaknesses in accordance with best practices. Furthermore, for firms that provide remote access to confidential and sensitive data, corporate-owned devices should be the standard. When accessing company data from a personal device is permissible, cyber risks should be examined, and steps made to mitigate cyber hazards. There are steps that may be taken to lessen the likelihood and severity of a cyberattack, but they require focused activity and planning.

In this study, we discussed numerous situations involving online social network dangers and their remedies, which included the use of various models, frameworks, and encryption techniques to safeguard social network members from various attacks. For a better understanding of our survey, we've described various alternatives as well as a comparative analysis of various surveys. Many of these privacy concerns, however, have yet to be addressed. Parents must actively watch their children when they use internet services such as Online Social Networks, in addition to the defensive measures.

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SOCIAL MEDIA THREATS: ISSUES AND CHALLENGES

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Abstract

Social media users' concerns about their privacy and security have pointed in recent years. Many users forced them to rethink their relationships to social media and the security of their personal information because of the various incidents of data breaches that have alarmed them. Social media platforms, which collect and store huge amounts of personal information, become attractive targets for hackers. This paper will explore how the internet and social networks influence personal information, as well as how privacy becomes a danger and how to implement security awareness to avoid potential privacy concerns. The goal of this paper is to look at social media security concerns and existing mitigation measures in order to gather information and propose best practices to help businesses deal with them.

Keywords: Privacy, Social Network, Security Threats, Cyber stalking, Cybersecurity.

Introduction:

Millions of people use the internet as a primary mode of communication. However, a user must be aware of his data security and privacy, as well as possess the necessary knowledge to avoid any potential threats to the same. Users' privacy concerns have risen dramatically on social networking platforms. With the rise of social networking sites, the default settings share information with the service provider, so users are advised to customize the settings in order to maintain more privacy. Despite this, cyber security breaches are not uncommon.

User privacy and network security is indeed a big hassle to date. Apart from the potential cyberattacks, inefficiency to counter such situations is a concern. Online networks have significant merits. User information shared on social network platforms is highly vulnerable to threats. Thus, privacy and security issues come into play.

Social networking very often makes users susceptible to cyber security threats and equally compromising their privacy. Privacy is likely to be attacked if not utilized responsibly. The creators recommend that a restriction in which protection can be attacked is through unapproved

> access to social user information because of privacy break or poor strategies disablement. Furthermore, they estimated that privacy intrusion can occur as an optional utilization, where information gathered for one design is used to meet different closures, without the knowledge or consent of the information proprietor.

> However, security problems can be addressed if appropriate information strategies and practices provide people control over the disclosure and use of their data. In a similar vein, the hypothesis states that disclosure is contingent on robust instruments that allow users to regulate the amount of information they reveal based on their goals, learning, and attitudes toward security. Such limit restriction can be done in the context of online social range interpersonal communication by utilizing privacy settings. These security settings enhance users' ability to reveal information and also pave the way for providing information about settings to those who require it. Social Media:

Since people consider social media as a personal communication tool, the importance of safeguarding their informa-tion stored in these social networking sites is often taken for granted. With the passage of time, people are putting more and more information in different forms on social networks which can lead to unprecedented access to people's and business information. The amount of information stored in social networks is very enticing for adversaries whose aim is to harm someone.





Social networks can be divided into four broad categories: 'social connections, "multimedia sharing,' 'professional,' and 'discussion forums'. Fig 1 depicts the various types of social networking sites that can be broadly classified.

In social connection, People use this network to connect with people and brands online. Although there are other types of social networking sites available online, this type certainly defnes social media now. Sites that come under this category are 'Facebook', 'Twitter', 'Google+', 'Mys-pace'.

This paper presents a study of social networking usage, privacy issues of Facebook and Whatsapp. In addition to this, cyber threats in pandemic situations are discussed and we have suggested relevant cyber security guidelines to achieve trustworthiness in online social networks.

Social Media Usage

Currently, in the era of advanced internet technology, Social Network becomes an incredibly popular tool on the internet and becomes widely used around the world. It is powerful tool in any ages of people especially among teenagers and young adults in the purpose of communication and self- expression, and it is easy mean of sharing information with other users who has a common interest such as photos, likes, dislikes, interests, relationship status, job details, current town details, political views, and religious views. Unfortunately, though this technology most users are not aware of the privacy risk associated whenever they share sensitive information in the internet, so that privacy concern will be raised among those online interactions if their personal information has been shared to other people.

Correspondingly, more than 78% of correspondents did not concern their information to be targeted by cyber-attacks or cyber-crime. The survey also found that one often has ever conversed with anonymous people about personal information, while 15% sending personal information which has not been exposed anywhere before through social networks. 12 % of correspondents using public Wi-Fi to fill online account information, but only 18% of them who concerned that their personal information disclosure is excessive or not and 7% seriously considered their communicating through social networking is one of major factor which information will be lose.

Every social network site asks users to accomplish a profile which contains privacy information including name, address, email and so on. Though this information is claimed to be dangerous which can be easily accessed by an unexpected person, what is happening today, most social network users tend to public real identity and post private information where privacy will be raised. Accordingly, they described that online social networking data is of great help to the researchers, analysts, and any kind of third party who has the opportunity to mine and use data for particular purposes such as spamming, fishing, targeted advertising and so on. This is because sensitive information and their interaction are stored in social OSN servers are not always honest and transparent due to the nature of OSN allows third parties to collect and analyze easily.

However, sometimes there is a need for users to reveal personal information for a particular reason, as demonstrated by. They also illustrated that users have to reveal the personal information on social networks in order to be effective and do this for maturing their identities. Furthermore, in the face of information of behavior of users are able to conceptualize a continuum which describes information privacy protection behavior. This means information can be disclosed accurately on one side, but not for other sides. By the way, users can participate and can protect their personal information at the same time by partly disclosing them.

According to Ankit Kumar Jain, Somya Ranjan Sahoo and Jyoti Kaubiyal, Facebook and Myspace are among the most preferred social networking sites. Since a large amount of the online population utilize social media platforms, it has become a major medium to promote business, awareness campaigns. Since people consider social media as a personal communication tool, the importance of safeguarding their information stored in these social networking sites is often taken for granted. With the passage of time, people are putting more and more information in different forms on social networks which can lead to unprecedented access to people's and business information. The

amount of information stored in social networks is very appealing for opponents whose aim is to harm someone. They can create havoc worldwide with this huge amount of information in their hands. They have presentenced different statistics for OSN security in "Statistics of online social network and media" and the positive and negative impacts of online social networking. They depicted different threats that affect the user behavior in the OSN platform. Authors described the reason behind the OSN security issues in-depth and the defensive solutions for various threats. Authors portrayed certain security rules to protect your system, account, and information. [27] More than half of the world now uses social media (58.4%) 4.62 billion people around the world

More than half of the world now uses social media (58.4%) 4.62 billion people around the world now use social media, 424 million new users have come online within the last 12 months. The average daily time spent using social media is 2h 27m. [14]

Facebook was the first social network to surpass one billion registered accounts and currently sits at more than 2.89 billion monthly active users. In 2022, Social networking sites are estimated to reach 3.96 billion users and these figures are still expected to grow as mobile device usage and mobile social networks increasingly gain traction in previously underserved markets. [15]

There were 448.0 million social media users in India in January 2021. The number of social media users in India increased by 78 million (+21%) between 2020 and 2021. The number of social media users in India was equivalent to 32.3% of the total population in January 2021. [16]

Research Objectives:

- 1. To study the privacy issues of social media
- 2. To recommend security practices for data privacy.

Methodology

As the research paper is of conceptual and review nature, the researcher has applied exploratory research design by using varied secondary data availed from the secondary data sources. Based on the secondary data and review, the researcher has reported on various emerging trends and issues and challenges in digital India. Research reports, journal and newspaper articles from eminent writers have been reviewed.

Threats to Privacy on Social Media

Criminals are expert at tracking social media users and finding sensitive information, stealing personal data. Typical social media threats are as follows.

Data Mining

People contribute personal information, such as their name, birthday, geographic location, and personal interests, through their social media accounts, and leave a data trail on the internet. Companies also collect information on user activities, such as when, where, and how users interact with their platform. Companies store and use all of this information to better target advertisements to their users. Users' data is sometimes shared with third-party organizations without their knowledge or consent.

Phishing Attempts

Phishing through an email, text message, or phone call means attempting to access sensitive personal information. These communications persuade recipients to share sensitive information such as passwords, banking information, or credit card numbers. Phishing attacks often pose as social media platforms.

Malware Sharing

Malicious software is software that is meant to obtain access to computers and is used to steal sensitive data (spyware), extort money (ransomware), or profit from forced advertising (adware). Malware distributors find social media sites to be a perfect delivery system.

Botnet Attacks

Social media bots are automated accounts that create posts or automatically follow new people. A large group of bots form a network known as a botnet. Bots and botnets are widespread on social media and are used to steal data, send spam, and launch distributed denial-of-service (DDoS) attacks that help cybercriminals to access people's devices and networks.

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Facebook

Facebook may be accessed from a wide range of Internet-connected devices, including desktop computers, laptop computers, and smartphones. Users can construct a customized profile after registration (the minimum age requirement has been 13 since 2006). This includes information such as their name, occupation, schools attended, and so forth. Users can add other users as "Friends," send messages, update their status, share images, videos, and links, use various software applications ("apps"), and receive notifications about other users' activities. Users can also join user groups organized by employment, school, hobbies, or other topics, as well as arrange their friends into lists like "People from Work" or "Close Friends."

Privacy Issues:

Facebook Like buttons track us even if we don't click on them. When we click a button on a website, we are broadcasting our interest not only to our friend, but also to Facebook and its advertising partner. Also, if we do not click on a like button, the number of times we visit is counted.

The new TimeLine format brings old lapses in judgment to light: Timeline, which was introduced in late 2011, allows people to easily search back through our old Facebook posts, which was previously very difficult. That could expose private matters and embarrassing photos that we have long since forgotten about.

Cyberstalking is the observation of an individual via the internet, email, or some other type of electronic correspondence that causes fear of violence and interferes with that individual's mental peace [18]. It is an infringement on a person's right to privacy. The attacker tracks the victims' personal or confidential information and uses it to threaten them with constant and persistent

messages throughout the day. This behavior causes the victim to be extremely concerned about his own safety and causes him to experience trouble, fear, or disturbance [19].

Most people nowadays share personal information such as their phone number, address, location, and schedule on social networking sites. Furthermore, they share their location-based data. An assailant can collect this information and use it for cyberstalking [20].

WhatsApp

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Apparently, the configuration of computers at homes of employees are no match for the systems deployed in the office. Hence, the security of the data transacted on the networks in teleworking is highly prone to unauthorized access that can even put the business data at risk of misuse.

Therefore, the employees must refrain from insecure internet providers, to avert the risks of cybersecurity threats.

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Malicious Domains and websites

The words "coronavirus," "corona-virus," "covid19," and "COVID-19" have appeared in a wide number of registered domains on the internet recently, and daily more and more increase has been witnessed. Although some are legitimate web sites, cybercriminals build thousands of new sites every day in which spam campaigns, phishing, malware spreading, or servers are compromised. These domains are used to carry out different scams, or they are used to act as a honeypot for the target users. Hackers get personal data through this procedure and then use it for their intended

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There has been an increase in websites that claim to be applications that are supposed to protect users from COVID-19, such as www.antivirus-covid19.site and www.corona antivirus.com. According to Malwarebytes' blog [23], the website www.antivirus-covid19.site is now inaccessible. The website www.corona-antivirus.com mentions that their application, called "Corona antivirus," has been developed by scientists at Harvard University. But in reality, installing this application infected the system with a malware called BlackNET RAT.

Mobile threats

In this modern era of ubiquitous computing, smartphone users are at their peak. Life without smartphones and gadgets has become impossible, and the use is increasing on a daily basis. At the same time, it's a great opportunity for bad actors to take advantage of it. An application named CovidLock (Ransomware) comes from a malicious Android app that is supposedly helping to track COVID-19 cases. An android app which is offering face masks and safety kits to the worried individuals. Once an individual installs the application, this app delivers a SMSTrojan, which collects the contact list of the victim phone directory and sends auto SMS to spread itself [23].

Privacy concerns

The data-sharing company by technology is playing a role in assisting various governments and their officials in overcoming the dizzying spread of the novel coronavirus by maintaining lockdowns and social distancing, but it is also keeping privacy experts on edge. Apple, Google, and Facebook are already collecting massive amounts of data in order to use it for advertising purposes. Some of them are now providing personal data to public health authorities, government agencies, and even researchers, such as location and other personal information. This could be useful in overcoming the situation, but it also jeopardizes public privacy, and there is concern that this data could be used even after the pandemic is over.

Many industries and educational institutions have recently gone online. Employees all over the world are continuing to work from home by using online communication and conferencing tools and software. Consumers must agree to some terms and conditions before they can sign up for the applications, which include their privacy and security data collection. [24]

Cyber security guidelines

Some common guidelines we need to follow for reducing the effect of threats.

• Selective with friend request

Before accepting a friend request, one should thoroughly examine the requester's profile. Different groups can be created for sharing different types of information, such as a group for colleagues and a group for relatives.

• Sharing Multimedia

Employees should be aware of their company's policy on sharing content on social media before putting any information on their profiles.

- Third-party programmes and links
- When clicking on links provided by various authors, one should be cautious. It might be a malicious website attempting to obtain the user's credentials.
- Two Step Validation
- Wherever possible, enable two-step authentication for all of your social media accounts. This adds another degree of protection to the account. Even if an opponent discovers a user's password, he will still require a second factor to authenticate himself. The second factor is a oneof-a-kind, time-sensitive code that users get via text message.

• Privacy settings

Users should become familiar with the various social media platforms' privacy and security settings and use them [26]. Each platform's privacy and security settings are different. Every platform has settings, configuration, and privacy sections that allow users to control who and what organizations can see what aspects of their professional lives. Sites' default privacy settings should not be used.

The more details disclosed, the easier it is for an opponent to steal identity or commit other cybercrimes using that information. As a result, sharing of information should be restricted.

• Guidelines for employees working from home

Best practices and procedures for regulating the sending of emails or other content to private email addresses and/or cloud storage should be presented to employees.

• Phishing awareness is important. When receiving emails, employees should be cautious and double-check the sender's address for validity.

• Employees should make sure that their home Wi-Fi is password protected.

• Use a virtual private network (VPN). Virtual private networks (VPNs) provide an additional layer of security for internet use at home. They cannot on their own be relied upon to prevent cyberattacks, but they can be a useful barrier against cyberattack. Businesses can use a few basic cybersecurity tactics.

• Apply new technology and tools. To enhance the security of remote working, companies can utilize advanced technologies like host checking (a programme that checks the security posture of an endpoint before approving access to corporate information systems).

• Techniques of intelligence gathering. Businesses should encourage proactive use of cyber threat information to discover relevant indications of attacks (IOC) and mitigate known assaults.

• Risk management is the management of risks. For better risk management, businesses can use governance, risk, and compliance (GRC) systems. GRC solutions give you a clear picture of your company's risk exposure and help you connect the dots between different risk disciplines (e.g. cybersecurity, operational risks, business continuity) [25]

Conclusion

This pandemic has shown us that preparing for cyberattacks is crucial to successfully reducing the risks. The capacity to respond swiftly to unanticipated occurrences can help to mitigate the damage of a cyberattack. Companies that have already profited from secure remote working capabilities will be better prepared to deal with the ever-increasing threat of cybercrime. Companies who were caught off guard will need to review their cyber threat exposure rapidly and prioritize actions to remediate cybersecurity weaknesses in accordance with best practices. Furthermore, for firms that provide remote access to confidential and sensitive data, corporate-owned devices should be the standard. When accessing company data from a personal device is permissible, cyber risks should be examined, and steps made to mitigate cyber hazards. There are steps that may be taken to lessen the likelihood and severity of a cyberattack, but they require focused activity and planning.

In this study, we discussed numerous situations involving online social network dangers and their remedies, which included the use of various models, frameworks, and encryption techniques to safeguard social network members from various attacks. For a better understanding of our survey, we've described various alternatives as well as a comparative analysis of various surveys. Many of these privacy concerns, however, have yet to be addressed. Parents must actively watch their children when they use internet services such as Online Social Networks, in addition to the defensive measures.

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RECENT TRENDS IN PORTFOLIO MANAGEMENT USING ARTIFICIAL INTELLIGENCE

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Abstract:

A crucial problem that is faced by finance domain is volatility and nonlinear variations in the data with reference to time. It is quite important to handle this time dependency. The available traditional models are not capable to manage these variations. Financial companies are majorly focusing of AI and ML algorithms as tool to support customer service by focusing on risk management. Some most popular AI techniques includes Artificial Neural Networks, Natural Language Processing, Support Vector Machine, Decision Tree, Genetic Algorithm, Cluster Analysis etc. In recent years, series of computer technologies are applied in the area of finance. Artificial Neural Network (ANN) has proved a trending method which is implemented in financial market. Contemporary breakthroughs in artificial intelligence have developed many systems that compete or even surpass human intelligence in the filed of Investment management. Implementation of AI in investment management builds new challenges and risks. Accuracy of proposed model will be the same as the data provided and hence data integrity and model opacity matters a lot in case of volatile financial market.

Keywords: Finance Management, Portfolio Management, Artificial Neural Network, Investment Management.

Introduction:

Technology is considered as a core component of asset management. It is assumed as a critical factor in investment management process that includes trading, operations, client services, and risk management. Technological development has empowered investment management companies benefits ranging from financial timely data analysis, combination of data from multiple data sources that can assists in decision making process. Financial companies are majorly focusing of AI and ML algorithms as tool to support customer service by focusing on risk management.

Artificial Intelligence can be referred as fiction science to people but it can be seen as recent technological breakthroughs. Raw material is provided by the rise of big data, hardware is provided by GPUs i.e., graphical processing units and innovative AI algorithms opened up new areas like natural language processing (NLP).

Artificial intelligence is a broad term used to illustrate any technology that makes the computer behave in a way that requires prior human intelligence. Amazon's Alexa and Apple's Siri are examples of AI that uses natural language processing algorithms for interpretation. On the other hand, AlphaGo defeated Go Player, a world champion in a highly complex game.

With AI, investment managers are becoming proficient through updated data that can be easy to access and simple to understand. AI is all about providing right data at the right fingertip of investment managers. This enables faster and compressive client services. AI can be presumed as "man with machine"

Some most popular AI techniques includes Artificial Neural Networks, Natural Language Processing, Support Vector Machine, Decision Tree, Genetic Algorithm, Cluster Analysis etc. In recent years, series of computer technologies are applied in the area of finance. Artificial Neural Network (ANN) has proved a trending method which is implemented in financial market. From the range of AI techniques, uncertainties of financial market are better handled by ANN through trend analysis and pattern recognition.



Fig. (1): Benefits of AI in Finance

Machine learning is the most important branch of artificial intelligence whose main focus is on algorithm development that improves automatically through experience. Machine learning can assist financial companies in better decision making in this volatile market by plummeting negative impacts of cased by human prejudices on investment management process. Statistical techniques such as discriminant or regression analysis, data distribution fundamentals are required to provide input data. As compared to these, ANN doesn't need any data distribution fundamentals, hence can be employed on wide range of problem areas. In view of the fact that variable financial market, ANN can easily indulge new upcoming data for financial management [1].

With respect to financial market portfolio management and risk assessment are major domains for AI applications. Investment management is an integral part of financial management and hence are selected for our study. In this paper, researchers featured contribution in financial domain.

ANN Applications in Financial Domain

ANNs are referred to as computational tools that can be effectively used for modelling real world problems of various disciplines [2]. ANNs can be considered as a biological neuron that can act as a source of stimulus for various techniques covering varied fields of applications [3]. Overall, ANNs are considered as information processing systems that makes use of earnings and generalization capabilities that are adaptive in nature. This adaptivity helps in addressing the problems such as information processing, decision making, forecasting etc. Also, it is proved as an effective tool for handling fluctuating financial market in with reference to decision making, prediction and forecasting [4][5][6].

In connection with this, various studies have been proposed in order to review and classify applications of ANN in finance [7][8]. It is evident that portfolio management, prediction, credit evaluation, risk management have significantly improved with ANN.

Portfolio Management

Artificial Intelligence could essentially transform trading processm asset allocation, risk management and other extents of portfolio management. Some automatic portfolio advisory systems with better performance of protfolio thereby rebalancing and managing risks with nominal transaction cost. Optimal asset allocation in the instruments such as stocks, bonds and mutual funds considering time and risk apetite is a critical task. People are providing diversified portfolios containing varieties of securities.

Motiwalla et al.[9] employed ANN and regression analysis to study the impact of predictable variations in US stock returns and stated that ANN models performs better than regression. Yamamoto et al [10]. proposed multilayer Back Propagation Neural Network (BPNN) for prediction of prepayment rate of mortgage using correlation learning algorithm.

Lowe et al. [11] devised analogue NN for construction of portfolio under specified constraints. They developed a feed forward NN for short-term equities prediction as a problem in nonlinear multichannel time series forecasting.

Adedeji et al. [12] presented ANN for economic data analysis of risky projects. Prediction of potential returns on investment, NN model is used. Based on the results obtained from network, financial managers could select the financial project by comparing it to conventional models. Survey conducted in the present study for portfolio management concluded that ANN performs better as compared to further traditional methods. Research papers surveyed for the present study states that ANN more specifically BPNN performs far better than other traditional methods.

Zimmermann et al. [13] illustrated application of Back/Litterman portfolio optimization algorithm using an error correction NN. Optimization of portfolio is done with specific allocation that comply investors constraints and controlled risk associated to portfolio. The method is tested by

internationally diversified portfolios from 21 financial markets from G7 countries. They stated that their approach exceeds conventional portfolios like Markowitz's mean-variance framework. Ellis et al. [14] accomplished portfolio analysis by comparing randomly selected portfolio method and general property method with BPNN and observed that ANN performs better.

Risk Management:

Financial risk management (FRM) is the method of dealing economic value in a firm with the help of financial instruments. FRM is used to manage risk exposure especially market risk and credit risk. FRM is a process in which risk associated with investment is identified and steps are undertaken in order to them. FRM can be qualitative or quantitative and focuses on how and when hedging has to be done using financial instruments to manage exposure to risk.

Treacy et al. [15] discussed about internal credit risk of commercial banks of portfolio and individual exposures. Author highlighted internal credit rating systems of 50 bank organizations of US. Relationships between different options for rating system, ratings and impact of internal rating systems are studied and concluded that increasing stresses upon rating systems is very important for both regulators and banks. Zhang et al. [16] studied risk associated with bankruptcy prediction using neural networks. They studied neural discriminant model probabilistic neural network model for bankruptcy prediction. For the study they used data of Gas and Oil industries from US. Their findings says that discriminant analysis gives better results especially for bankrupt companies.

Tam et al. [17] introduced neural-net technique to accomplish discriminant analysis into business research. A neural-net signifies a nonlinear discriminant function as a system of connections amongst its processing units. Authors compared KNN, ID3, Logical regression and linear classifier with neural-net for banks and found that neural-net is most promising method for evaluation of condition of a bank in terms of adaptability, accuracy, robustness and predictivity.

Huang et al. [18] researched corporate credit ratings from US and Taiwan. Authors studied support vector machine (SVM) and back propagation neural network (BPNN) for prediction and achieved around 80% accuracy. Other aspect of research was to enhance interpretability of AI based models and found that financial input variables to neural network model are relatively important.

Table (1) below summarizes the contribution of various researchers in the field of application of ANN for portfolio management.

Author	Objective	Data Set	Techniq	Compared	Evaluation
			ue Used	With	Measures
Stoppiglia H,	Portfolio	The data base	ANN	Statistical	Classificatio
et. al.	Management	comprises 398		Method	n
		companies,			
		with 172 A			
		companies,			
		172 B			
		companies,			
		& 54 C			
		companies			
Hans Georg	Portfolio	Financial	ANN	Mean-	Forecasting
Zimmermann,	Optimization	markets of the		variance	
Ralph		G7 countries		theory	
Neuneier and					
Ralph					
Grothmann					
Siemens AG					
Ellis C,	Portfolio	Australian	BPNN	Random	Performanc
Willson P	Selection	Property sector		selection	e measure
		stocks		portfolio	
Fernandez A,	Portfolio	Hang Seng in	ANN,	Heuristic	Portfolio
Gomez S	selection and	Hong Kong,	GA and	methods	selection
	Portfolio	DAX 100 in	SA		and
	Management	Germany,			optimizatio
		FTSE 100 in			n
		UK, S&P 100			
		in USA and			
		Nikkei 225 in			
		Japan			
Freitas FD,	Portfolio	IBOVESPA	BPNN	Mean-	Prediction
De Souza AF,	selection and			variance	
De Almeida	Portfolio			model	
AR	optimization				
Po-Chang Ko,	Portfolio	Taiwan stock	ANN	Traditional	Portfolio
Ping-Chen	selection and	exchange		ANN model	optimizatio
Lin	Portfolio				n
	optimization				

Table (1): Application of ANN for Portfolio Management and Risk Management

Chiang W-C,	Asset	US mutual	BPNN	Regression	NAV
Urban TL,	Forecasting	fund		model	prediction
Baldridge GW					
Chye KH, Tan	Credit risk	Australian and	SVM	Neural	Accuracy
WC, Goh CP	assessment	German credit	classifier	networks,	
		data sets		genetic	
				programming	
				, and decision	
				tree	
				classifiers	
Fanning,	Managerial	Management	ANN	Generalized	Accuracy
Cogger and	Fraud	database		adaptive	
Shrivastava	Detection			neural	
				network	
				architectures	
				(GANNA)	
				and the	
				Adaptive	
				Logic	
				Network	
				(ALN)	
Kurt Fanning,	Fraud	FFS.	ANN	Statistical	Efficiency
Kenneth O.	Detection			methods	
Cogger	<u> </u>	070		T 1	
R. Brause, T.	Credit card	GZS	ANN	Traditional	Prediction
Langsdorf,	Fraud			systems	
M. Hepp	Detection				
Fen-May Liou	To detect	Taiwan	ANN	Logistic	Prediction
	fraudulent	Economic		regression,	
	Inancial	Journal data		neural	
	reporting	bank and		networks,	
		Taiwan Stock		and	
		Exchange		classification	
Class Inc.	Denlmurt	Turta un att 1		trees.	Dualisticu
Cnu, Jung	Bankruptcy		AININ	Logit,	Prediction
	prediction.	Stock	With	generalized	
		Exchange Official Veer	MDA	denta rule	
		Difficial Year			
		BOOK Irom a			

		Data stream database			
Zhang et al.	Bankruptcy prediction	COMPUSTAT database	ANN	MDA, ID3	Classificatio n
Tam KY, Kiang MY	To perform discriminant analysis in business research	Bank default data	Neural Network	Linear classifier, logistic regression, k NN, and ID3	predictive accuracy, adaptability

Conclusion:

Contemporary breakthroughs in artificial intelligence have developed many systems that compete or even surpass human intelligence in the filed of Investment management. Artificial Intelligence technique is a central theme behind present research. Researcher examined various techniques employed for investment portfolio management. From the literature survey, it is observed that Artificial Neural Network (ANN) is quite an effective technique for portfolio management. Effective way to implement ANN for risk management is a crucial task. It is also observed that determining required size and structure of a network is very crucial step. Implementation of AI in investment management builds new challenges and risks. Accuracy of proposed model will be the same as the data provided and hence data integrity and model opacity matters a lot in case of volatile financial market.

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UNDERSTANDING IMPLEMENTATION OF E-LEARNING

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Abstract:

This study is to understand the implementation level of e-learning software's in the region of Pune, Mumbai and Nagpur. Using purposive sampling 273 organizations from education sector, IT firms and companies (manufacturing, finance & insurance) were selected. Research questionnaire was used to understand the implementation of e-learning software, identify reasons behind implementation and satisfaction level.

Keywords: E-learning, Learning Management Systems, Pune, Mumbai, Nagpur, Moodle Introduction

E-learning can be offered using different types of electronic media, but it is also an ideal supplement for a traditional education or training program. The technology is used to create and distribute personal, complete, and dynamic learning content that allows learning at anytime, anywhere as per user's convenience. The approach is innovative to communicate almost any kind of academic information. Online learning is focused on knowledge. User of student is attracted to gain or share knowledge. In this mode of learning, instructors and students are separated by time, distance, or both.

What is E-learning?

E-learning is a wide-ranging phrase that's used to describe learning by the use of a computer that's typically linked to a network. E-learning can also be referred to as online learning or education, distance learning or education and technology, web or computer-based training. E-learning has become popular. Due to this numerous educational facilities, businesses and organizations now offer accredited courses, degrees and training through their e-learning programs.

It can be divided into two major delivery methods: (a) Synchronous learning (b) Asynchronous learning

Synchronous e-Learning or training happens in real time with an instructor facilitating the training. Most commonly this type of learning may take place over the Internet using a variety of

communication tools. The student logs in at a specific time and communicates directly with the instructor and/or other students. Synchronous e-Learning may also be accomplished through telephone, video conferencing, or two-way live television broadcasts between instructors and students in remote locations. In synchronous eLearning, student and trainer access the resources simultaneously.

Asynchronous e-Learning may be using CD, DVD-ROM, Intranet, or Internet based. Students generally work on an interactive self-paced program of study. This may include access to instructors or experts through online bulletin boards, discussion groups, and e-mail. Programs may also be completely self-contained with links to various reference materials in place of an instructor. Asynchronous e-Learning allows students to learn anywhere and usually at any time, as long as they have the proper equipment.

Historical Overview of E-Learning

Long before the internet was launched, distance courses were being offered to provide students with education on particular subjects or skills. In the 1840's Isaac Pitman taught his pupils shorthand via correspondence. This form of symbolic writing was designed to improve writing speed and was popular amongst secretaries, journalists, and other individuals who did a great deal of note taking or writing. Pitman, who was a qualified teacher, was sent completed assignments by mail and he would then send his students more work to be finished using the same system.

In 1924, the first testing machine was invented. This device allowed students to tests themselves. Then, in 1954, BF Skinner, a Harvard Professor, invented the "teaching machine", which enabled schools to administer programmed instruction to their students. It wasn't until 1960 however that the first computer-based training program was introduced to the world. This computer-based training program (or CBT program) was known as PLATO-Programmed Logic for Automated Teaching Operations. It was originally designed for students attending the University of Illinois, but ended up being used in schools throughout the area.

The first online learning systems were really only set up to deliver information to students but as we entered the 70s online learning started to become more interactive. In Britain the Open University was keen to take advantage of e-learning. Their system of education has always been primarily focused on learning at a distance. In the past, course materials were delivered by post and correspondence with tutors was via mail. With the internet the Open University began to offer a wider range of interactive educational experiences as well as faster correspondence with students via email etc.

edX website provide certificate courses of various well-known universities of globe. Which include MIT, Harvard, and University of California etc.

E-Learning scenario to Indian region

The e-learning, though reached India late of course, but it is being fast accepted in a big way. The e-learning does not seem to replace the conventional classrooms with black boards but it seems to coexist with the already existing system. This system rather promises to reach too far off rural areas in India where education is still a looming darkness. This objective was achieved by

> providing PCs at low cost with broadband connection and the chances of e-learning to strengthen the educational system in India were increased

> In 1982, India launched satellite INSAT-I. From Delhi Door darshan, educational programs were started. Jamia Milia Islamia University was telecasting learning programs on Door darshan. But these programs were of short duration and not in local language. Initially it had received good response but later it failed due to language barrier, inconvenient timing.

Later on, came the era of CDs and DVDs. Using multimedia learners enjoyed learning with the help of CDs and DVDs. Majority of printed books came along with the CD/DVD where soft copy of the book along with examples, problems and solutions installed. Even educational magazines like PC Quest, Reader's Digest and Competition success review provide a soft copy of their edition.

Now a day's application-based learning is also available. Users download required mobile application on smart phones, I-pods and other hand-held devices. With the help of this advanced technology, education is penetrating in rural areas of India as smart phones are available everywhere.

Some companies compel fresh recruits to follow six months e-Learning course as training from company. Out of box thinking is now promoted. Skill development programs are also available on smart phones.

Benefits of E-learning

There are several benefits of using e-learning as follows:

- It's cost effective and saves time: It reduces time taken away from the office, removing travel costs and doing away with printed materials, online learning helps you to save money and increase workplace productivity.
- Learning 24/7, anywhere: Classroom teaching face- to- face courses only operate within normal office hours. Student can be working professional. By availing on-line learning, student can undergo particular course as per his/her convenience.
- It is discreet: Everybody does not feel comfortable when learning in a large group, especially if they find something hard to understand. E-learning allows each individual to tackle the subject at their own pace, with interactive tasks being set in place to ensure a thorough understanding throughout each module.
- **E-Learning is student centered:** The learner is the core of any e-Learning system. Materials and activities are designed with the needs and interests of the learner in mind. Students assume control of their learning experience and use it to suit their specific needs.
- E-Learning is self-directed and self-paced: Students control the amount of time spent on a particular topic. This allows learners to skip material they already understand or to spend additional time on difficult areas. This individualized approach usually allows learners to complete their education and training faster than in traditional courses.
- **E-Learning is interactive and hands-on:** The use of a variety of multimedia increases student involvement and reinforces the learning experience. This leads to increased retention and a stronger grasp of the subject at hand.

• **E-Learning is flexible:** Learning can take place anytime and anywhere, as long as the necessary equipment is available. The logistics and expense of face-to-face education and training can be extremely limiting when students are separated by distance.

Implementation Challenges in E-Learning

There are many advantages to online and computer-based learning when compared to traditional face-to-face courses and lectures. There are a few challenges as well.

- Computer literacy and access to equipment. Any e-Learning system involves basic equipment and a minimum level of computer knowledge in order to perform the tasks required by the system.
- Some topics are not appropriate for e-Learning. Certain subjects that require physical activity and practice, such as sports and public speaking, are not good candidates for e-Learning. However, e-Learning can be a useful companion to traditional education for teaching background and technical information.
- The flexibility and student-centered nature of e-Learning requires a high level of student responsibility. A successful e-Learning student must be well organized, self-motivated, and possess good time management skills.
- Learners with low motivation or bad study habits may fall behind. Without the routine structures of a traditional class, students may get lost or confused about course activities and deadlines
- Students may feel isolated from the instructor and classmates. Instructor may not always be available when students are studying or need help
- Slow Internet connections or older computers may make accessing course materials frustrating
- Managing computer files and online learning software can sometimes seem complex for students with beginner-level computer skills
- Hands-on or lab work is difficult to simulate in a virtual classroom

Research Methodology

This research paper focused to understand different E-learning systems and their implementation. A detailed questionnaire was designed for primary data collection. The detail list of organizations in the area of Pune, Mumbai and Nagpur were searched where E-learning has been previously implemented and is functioning.

The researcher's focus was on Educational Institutes, IT firms & business services and Finance / Insurance / Manufacturing companies. Out of 273 questionnaires 127 were from educational institutes, 83 were IT firms and business services and rest were from finance /insurance/ manufacturing firms.

Organization wise distribution of the respondent is 46.5% from Educational institutes, 10.3% from Finance and insurance, 30.4% from IT firms and business services and 12.8% from Manufacturing as shown in the figure 1 below.



Figure 1 Sector Distribution

Below figure 2 shows the geographical region wise distribution of the respondents. 27.5% respondents were from Mumbai city. 12.1% respondents were from Nagpur city and 60.4% respondents were from Pune city.



Figure 2 Region Distribution

As per the type of the organization different roles were identified. Responses from these were collected. 39.2% respondents were Consultant or trainer or teacher. 16.8% respondents were developer or programmer. 16.1% were manager or IT manager. 7.7% respondents were from service desk or help desk. 9.2% respondents were students and 11% respondents were system admin as shown in the figure 3 below.



Figure 3 Organizational Role Distribution

As we obtained the results that organizations were utilizing e-learning software, we also collected the data showing the popular e-learning software. As shown in the figure 4 below, we can see that Moodle was used by 34.8% organizations, Docebo was used by 24.2% organizations, Adobe was used by 15.4% organizations and Swayam by 10.3% organizations.



Figure 4 E-learning Software Distribution

We have also collected the data related to time span of utilization of e-learning software in the organization. 35.9% organizations were effectively using e-learning software from last three years. 24.2% were using it for last two years and 16.8% organizations were using e-learning software for last four years. It can be seen that there was a significant growth in utilization of e-learning software in organization.



Figure 5 E-software Implementation in years

Reasons for Implementation of E-learning Software

There was a growing need of e-learning software in the organizations. The reasons implementation of e-learning software was measured based on the following four parameters.

- **Internal Compliance:** It was important to fulfil the internal compliance of organization. It helps employees to understand the industrial or government laws. Around 50% respondents agreed that internal compliance was the reason for implementation of e-learning software.
- Skill set improvement: After implementation of e-learning software, skill set of employees was enhanced. With the effective use of e-learning software, learning ability was increased. As trainings were readily available at any time, user can access them as per their convenience. Hence speed of learning was improved. 51.6% respondents were agreed that using e-learning software there was a significance improvement in skill set of respondents.
- **Cost reduction:** As e-learning software's are available to all at any point of time, speed of learning was increased. If a particular concept was not understood then users can go through the contents again and again. Hence repeated training cost can be reduced there by implementing e-learning software. 58.2% respondents were agreed that with the use of e-learning software cost reduction was possible.
- Monitory benefit: Monitory benefit was important for any business or organization. Reduction in the cost, earning through paid courses using E-learning software provided monitory benefits to the organizations. 58.6% respondents were agreed that because of implementation of e-learning software, there was a monitory benefit to the organization.

Effectiveness of E-learning software implementation

The effective implementation of E-learning software was studies on the following parameters

• Accessibility: Because of the technological advancement, e-learning software's are more accessible. Almost everyone is using internet on smartphones. Hence can access required

software through internet at any time anywhere. 61.5% respondents agreed that as e-learning software's were more accessible and hence effective.

- Session Management: While using e-learning software, session management is very much important factor that affected effectiveness. Session timeout creates disturbance in learning process. For 54.2% respondents learning was affected due to session management. Around 21% respondents learning was not affected by session management.
- **Time bound Activities**: Some activities are time bound activities in e-learning software. Assignment submission can be a time bound activity. If no time limit is given then nobody will submit the assignments. It directly effects on the user performance. According to 54.2% respondents, time bound activities were more effective for learning.
- **Customization:** Customization was the factor that makes you comfortable using e-learning software. Look and feel matters a lot when using anything. If we can customize the page then it creates more interest in using the software. For 59% respondents, customization was an important factor in using e-learning software.
- Flexibility: Flexibility is an important factor from teacher/instructor and student point of view. If teacher wants to conduct online examination then software must be flexible so that it can accommodate runtime changes. If teacher wants to increase the session time then it should accommodate the updated time. This is from teacher point of view. While appearing for the exam, if student wants to pause the exam for reason then this facility must be given to student. Students should also be able to resume the exam. This is the example of flexibility from student point of view. For around 60% respondents, flexibility is very important as factor in using elearning software.
- Interactive: E-learning software should be more interactive. Interactive e-learning software makes use of pre-defined themes, templates and interactions that can easily be integrated with your e-learning program. You can update your company's existing training material and other multimedia to flawlessly create new program. This significantly decreases the development time of the course and maximizes your company's resources. These e-learning software's allow you to quickly updates and revise your e-learning course design, help our training program to stay up-to-date in this fast-changing world. 61.2% respondents agree that more interactivity increase the effectiveness of E-learning software.

Conclusion

This research helped us to understand the implementation of E-learning in the region of Pune, Mumbai and Nagpur. Based on the importance and challenges of E-learning we designed questionnaire to reasons and effectiveness of implementation. E-learning has been mostly implemented by educational institute with the help of Moodle as learning management system. The important reasons for implementation are internal compliance, skill set improvement, cost reduction and monitory gain. Finally, we were able to list the effectiveness of implementation on
the parameters like accessibility, session management, time bound activities, customization, flexibility and interactive.

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RECENT TRENDS IN PORTFOLIO MANAGEMENT USING ARTIFICIAL INTELLIGENCE

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Abstract:

A crucial problem that is faced by finance domain is volatility and nonlinear variations in the data with reference to time. It is quite important to handle this time dependency. The available traditional models are not capable to manage these variations. Financial companies are majorly focusing of AI and ML algorithms as tool to support customer service by focusing on risk management. Some most popular AI techniques includes Artificial Neural Networks, Natural Language Processing, Support Vector Machine, Decision Tree, Genetic Algorithm, Cluster Analysis etc. In recent years, series of computer technologies are applied in the area of finance. Artificial Neural Network (ANN) has proved a trending method which is implemented in financial market. Contemporary breakthroughs in artificial intelligence have developed many systems that compete or even surpass human intelligence in the filed of Investment management. Implementation of AI in investment management builds new challenges and risks. Accuracy of proposed model will be the same as the data provided and hence data integrity and model opacity matters a lot in case of volatile financial market.

Keywords: Finance Management, Portfolio Management, Artificial Neural Network, Investment Management.

Introduction:

Technology is considered as a core component of asset management. It is assumed as a critical factor in investment management process that includes trading, operations, client services, and risk management. Technological development has empowered investment management companies benefits ranging from financial timely data analysis, combination of data from multiple data sources that can assists in decision making process. Financial companies are majorly focusing of AI and ML algorithms as tool to support customer service by focusing on risk management.

Artificial Intelligence can be referred as fiction science to people but it can be seen as recent technological breakthroughs. Raw material is provided by the rise of big data, hardware is provided by GPUs i.e., graphical processing units and innovative AI algorithms opened up new areas like natural language processing (NLP).

Artificial intelligence is a broad term used to illustrate any technology that makes the computer behave in a way that requires prior human intelligence. Amazon's Alexa and Apple's Siri are examples of AI that uses natural language processing algorithms for interpretation. On the other hand, AlphaGo defeated Go Player, a world champion in a highly complex game.

With AI, investment managers are becoming proficient through updated data that can be easy to access and simple to understand. AI is all about providing right data at the right fingertip of investment managers. This enables faster and compressive client services. AI can be presumed as "man with machine"

Some most popular AI techniques includes Artificial Neural Networks, Natural Language Processing, Support Vector Machine, Decision Tree, Genetic Algorithm, Cluster Analysis etc. In recent years, series of computer technologies are applied in the area of finance. Artificial Neural Network (ANN) has proved a trending method which is implemented in financial market. From the range of AI techniques, uncertainties of financial market are better handled by ANN through trend analysis and pattern recognition.



Fig. (1): Benefits of AI in Finance

Machine learning is the most important branch of artificial intelligence whose main focus is on algorithm development that improves automatically through experience. Machine learning can assist financial companies in better decision making in this volatile market by plummeting negative impacts of cased by human prejudices on investment management process. Statistical techniques such as discriminant or regression analysis, data distribution fundamentals are required to provide input data. As compared to these, ANN doesn't need any data distribution fundamentals, hence can be employed on wide range of problem areas. In view of the fact that variable financial market, ANN can easily indulge new upcoming data for financial management [1].

With respect to financial market portfolio management and risk assessment are major domains for AI applications. Investment management is an integral part of financial management and hence are selected for our study. In this paper, researchers featured contribution in financial domain.

ANN Applications in Financial Domain

ANNs are referred to as computational tools that can be effectively used for modelling real world problems of various disciplines [2]. ANNs can be considered as a biological neuron that can act as a source of stimulus for various techniques covering varied fields of applications [3]. Overall, ANNs are considered as information processing systems that makes use of earnings and generalization capabilities that are adaptive in nature. This adaptivity helps in addressing the problems such as information processing, decision making, forecasting etc. Also, it is proved as an effective tool for handling fluctuating financial market in with reference to decision making, prediction and forecasting [4][5][6].

In connection with this, various studies have been proposed in order to review and classify applications of ANN in finance [7][8]. It is evident that portfolio management, prediction, credit evaluation, risk management have significantly improved with ANN.

Portfolio Management

Artificial Intelligence could essentially transform trading processm asset allocation, risk management and other extents of portfolio management. Some automatic portfolio advisory systems with better performance of protfolio thereby rebalancing and managing risks with nominal transaction cost. Optimal asset allocation in the instruments such as stocks, bonds and mutual funds considering time and risk apetite is a critical task. People are providing diversified portfolios containing varieties of securities.

Motiwalla et al.[9] employed ANN and regression analysis to study the impact of predictable variations in US stock returns and stated that ANN models performs better than regression. Yamamoto et al [10]. proposed multilayer Back Propagation Neural Network (BPNN) for prediction of prepayment rate of mortgage using correlation learning algorithm.

Lowe et al. [11] devised analogue NN for construction of portfolio under specified constraints. They developed a feed forward NN for short-term equities prediction as a problem in nonlinear multichannel time series forecasting.

Adedeji et al. [12] presented ANN for economic data analysis of risky projects. Prediction of potential returns on investment, NN model is used. Based on the results obtained from network, financial managers could select the financial project by comparing it to conventional models. Survey conducted in the present study for portfolio management concluded that ANN performs better as compared to further traditional methods. Research papers surveyed for the present study states that ANN more specifically BPNN performs far better than other traditional methods.

Zimmermann et al. [13] illustrated application of Back/Litterman portfolio optimization algorithm using an error correction NN. Optimization of portfolio is done with specific allocation that comply investors constraints and controlled risk associated to portfolio. The method is tested by

internationally diversified portfolios from 21 financial markets from G7 countries. They stated that their approach exceeds conventional portfolios like Markowitz's mean-variance framework. Ellis et al. [14] accomplished portfolio analysis by comparing randomly selected portfolio method and general property method with BPNN and observed that ANN performs better.

Risk Management:

Financial risk management (FRM) is the method of dealing economic value in a firm with the help of financial instruments. FRM is used to manage risk exposure especially market risk and credit risk. FRM is a process in which risk associated with investment is identified and steps are undertaken in order to them. FRM can be qualitative or quantitative and focuses on how and when hedging has to be done using financial instruments to manage exposure to risk.

Treacy et al. [15] discussed about internal credit risk of commercial banks of portfolio and individual exposures. Author highlighted internal credit rating systems of 50 bank organizations of US. Relationships between different options for rating system, ratings and impact of internal rating systems are studied and concluded that increasing stresses upon rating systems is very important for both regulators and banks. Zhang et al. [16] studied risk associated with bankruptcy prediction using neural networks. They studied neural discriminant model probabilistic neural network model for bankruptcy prediction. For the study they used data of Gas and Oil industries from US. Their findings says that discriminant analysis gives better results especially for bankrupt companies.

Tam et al. [17] introduced neural-net technique to accomplish discriminant analysis into business research. A neural-net signifies a nonlinear discriminant function as a system of connections amongst its processing units. Authors compared KNN, ID3, Logical regression and linear classifier with neural-net for banks and found that neural-net is most promising method for evaluation of condition of a bank in terms of adaptability, accuracy, robustness and predictivity.

Huang et al. [18] researched corporate credit ratings from US and Taiwan. Authors studied support vector machine (SVM) and back propagation neural network (BPNN) for prediction and achieved around 80% accuracy. Other aspect of research was to enhance interpretability of AI based models and found that financial input variables to neural network model are relatively important.

Table (1) below summarizes the contribution of various researchers in the field of application of ANN for portfolio management.

Author	or Objective Data Set Techniq		Compared	Evaluation	
			ue Used	With	Measures
Stoppiglia H,	Portfolio	The data base	ANN	Statistical	Classificatio
et. al.	Management	comprises 398		Method	n
		companies,			
		with 172 A			
		companies,			
		172 B			
		companies,			
		& 54 C			
		companies			
Hans Georg	Portfolio	Financial	ANN	Mean-	Forecasting
Zimmermann,	Optimization	markets of the		variance	
Ralph		G7 countries		theory	
Neuneier and					
Ralph					
Grothmann					
Siemens AG					
Ellis C,	Portfolio	Australian	BPNN	Random	Performanc
Willson P	Selection	Property sector		selection	e measure
		stocks		portfolio	
Fernandez A,	Portfolio	Hang Seng in	ANN,	Heuristic	Portfolio
Gomez S	selection and	Hong Kong,	GA and	methods	selection
	Portfolio	DAX 100 in	SA		and
	Management	Germany,			optimizatio
		FTSE 100 in			n
		UK, S&P 100			
		in USA and			
		Nikkei 225 in			
		Japan			
Freitas FD,	Portfolio	IBOVESPA	BPNN	Mean-	Prediction
De Souza AF,	selection and			variance	
De Almeida	Portfolio			model	
AR	optimization				
Po-Chang Ko,	Portfolio	Taiwan stock	ANN	Traditional	Portfolio
Ping-Chen	selection and	exchange		ANN model	optimizatio
Lin	Portfolio				n
	optimization				

Table (1): Application of ANN for Portfolio Management and Risk Management

Chiang W-C,	Asset	US mutual	BPNN	Regression	NAV
Urban TL,	Forecasting	fund		model	prediction
Baldridge GW					
Chye KH, Tan	Credit risk	Australian and	SVM	Neural	Accuracy
WC, Goh CP	assessment	German credit	classifier	networks,	
		data sets		genetic	
				programming	
				, and decision	
				tree	
				classifiers	
Fanning,	Managerial	Management	ANN	Generalized	Accuracy
Cogger and	Fraud	database		adaptive	
Shrivastava	Detection			neural	
				network	
				architectures	
				(GANNA)	
				and the	
				Adaptive	
				Logic	
				Network	
				(ALN)	
Kurt Fanning,	Fraud	FFS.	ANN	Statistical	Efficiency
Kenneth O.	Detection			methods	
Cogger	<u> </u>	070		T 1' 1	
R. Brause, T.	Credit card	GZS	ANN	Traditional	Prediction
Langsdorf,	Fraud			systems	
M. Hepp	Detection				
Fen-May Liou	To detect	Taiwan	ANN	Logistic	Prediction
	fraudulent	Economic		regression,	
	Inancial	Journal data		neural	
	reporting	bank and		networks,	
		Taiwan Stock		and	
		Exchange		classification	
Class Inc.	Denlmurt	Turta un att 1		trees.	Dualisticu
Cnu, Jung	Bankruptcy		AININ	Logit,	Prediction
	prediction.	Stock	WITH	generalized	
		Exchange Official Veer	MDA	denta rule	
		Difficial Year			
		BOOK Irom a			

		Data stream database			
Zhang et al.	Bankruptcy prediction	COMPUSTAT database	ANN	MDA, ID3	Classificatio n
Tam KY, Kiang MY	To perform discriminant analysis in business research	Bank default data	Neural Network	Linear classifier, logistic regression, k NN, and ID3	predictive accuracy, adaptability

Conclusion:

Contemporary breakthroughs in artificial intelligence have developed many systems that compete or even surpass human intelligence in the filed of Investment management. Artificial Intelligence technique is a central theme behind present research. Researcher examined various techniques employed for investment portfolio management. From the literature survey, it is observed that Artificial Neural Network (ANN) is quite an effective technique for portfolio management. Effective way to implement ANN for risk management is a crucial task. It is also observed that determining required size and structure of a network is very crucial step. Implementation of AI in investment management builds new challenges and risks. Accuracy of proposed model will be the same as the data provided and hence data integrity and model opacity matters a lot in case of volatile financial market.

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UNDERSTANDING IMPLEMENTATION OF E-LEARNING

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Abstract:

This study is to understand the implementation level of e-learning software's in the region of Pune, Mumbai and Nagpur. Using purposive sampling 273 organizations from education sector, IT firms and companies (manufacturing, finance & insurance) were selected. Research questionnaire was used to understand the implementation of e-learning software, identify reasons behind implementation and satisfaction level.

Keywords: E-learning, Learning Management Systems, Pune, Mumbai, Nagpur, Moodle Introduction

E-learning can be offered using different types of electronic media, but it is also an ideal supplement for a traditional education or training program. The technology is used to create and distribute personal, complete, and dynamic learning content that allows learning at anytime, anywhere as per user's convenience. The approach is innovative to communicate almost any kind of academic information. Online learning is focused on knowledge. User of student is attracted to gain or share knowledge. In this mode of learning, instructors and students are separated by time, distance, or both.

What is E-learning?

E-learning is a wide-ranging phrase that's used to describe learning by the use of a computer that's typically linked to a network. E-learning can also be referred to as online learning or education, distance learning or education and technology, web or computer-based training. E-learning has become popular. Due to this numerous educational facilities, businesses and organizations now offer accredited courses, degrees and training through their e-learning programs.

It can be divided into two major delivery methods: (a) Synchronous learning (b) Asynchronous learning

Synchronous e-Learning or training happens in real time with an instructor facilitating the training. Most commonly this type of learning may take place over the Internet using a variety of

communication tools. The student logs in at a specific time and communicates directly with the instructor and/or other students. Synchronous e-Learning may also be accomplished through telephone, video conferencing, or two-way live television broadcasts between instructors and students in remote locations. In synchronous eLearning, student and trainer access the resources simultaneously.

Asynchronous e-Learning may be using CD, DVD-ROM, Intranet, or Internet based. Students generally work on an interactive self-paced program of study. This may include access to instructors or experts through online bulletin boards, discussion groups, and e-mail. Programs may also be completely self-contained with links to various reference materials in place of an instructor. Asynchronous e-Learning allows students to learn anywhere and usually at any time, as long as they have the proper equipment.

Historical Overview of E-Learning

Long before the internet was launched, distance courses were being offered to provide students with education on particular subjects or skills. In the 1840's Isaac Pitman taught his pupils shorthand via correspondence. This form of symbolic writing was designed to improve writing speed and was popular amongst secretaries, journalists, and other individuals who did a great deal of note taking or writing. Pitman, who was a qualified teacher, was sent completed assignments by mail and he would then send his students more work to be finished using the same system.

In 1924, the first testing machine was invented. This device allowed students to tests themselves. Then, in 1954, BF Skinner, a Harvard Professor, invented the "teaching machine", which enabled schools to administer programmed instruction to their students. It wasn't until 1960 however that the first computer-based training program was introduced to the world. This computer-based training program (or CBT program) was known as PLATO-Programmed Logic for Automated Teaching Operations. It was originally designed for students attending the University of Illinois, but ended up being used in schools throughout the area.

The first online learning systems were really only set up to deliver information to students but as we entered the 70s online learning started to become more interactive. In Britain the Open University was keen to take advantage of e-learning. Their system of education has always been primarily focused on learning at a distance. In the past, course materials were delivered by post and correspondence with tutors was via mail. With the internet the Open University began to offer a wider range of interactive educational experiences as well as faster correspondence with students via email etc.

edX website provide certificate courses of various well-known universities of globe. Which include MIT, Harvard, and University of California etc.

E-Learning scenario to Indian region

The e-learning, though reached India late of course, but it is being fast accepted in a big way. The e-learning does not seem to replace the conventional classrooms with black boards but it seems to coexist with the already existing system. This system rather promises to reach too far off rural areas in India where education is still a looming darkness. This objective was achieved by

> providing PCs at low cost with broadband connection and the chances of e-learning to strengthen the educational system in India were increased

> In 1982, India launched satellite INSAT-I. From Delhi Door darshan, educational programs were started. Jamia Milia Islamia University was telecasting learning programs on Door darshan. But these programs were of short duration and not in local language. Initially it had received good response but later it failed due to language barrier, inconvenient timing.

Later on, came the era of CDs and DVDs. Using multimedia learners enjoyed learning with the help of CDs and DVDs. Majority of printed books came along with the CD/DVD where soft copy of the book along with examples, problems and solutions installed. Even educational magazines like PC Quest, Reader's Digest and Competition success review provide a soft copy of their edition.

Now a day's application-based learning is also available. Users download required mobile application on smart phones, I-pods and other hand-held devices. With the help of this advanced technology, education is penetrating in rural areas of India as smart phones are available everywhere.

Some companies compel fresh recruits to follow six months e-Learning course as training from company. Out of box thinking is now promoted. Skill development programs are also available on smart phones.

Benefits of E-learning

There are several benefits of using e-learning as follows:

- It's cost effective and saves time: It reduces time taken away from the office, removing travel costs and doing away with printed materials, online learning helps you to save money and increase workplace productivity.
- Learning 24/7, anywhere: Classroom teaching face- to- face courses only operate within normal office hours. Student can be working professional. By availing on-line learning, student can undergo particular course as per his/her convenience.
- It is discreet: Everybody does not feel comfortable when learning in a large group, especially if they find something hard to understand. E-learning allows each individual to tackle the subject at their own pace, with interactive tasks being set in place to ensure a thorough understanding throughout each module.
- **E-Learning is student centered:** The learner is the core of any e-Learning system. Materials and activities are designed with the needs and interests of the learner in mind. Students assume control of their learning experience and use it to suit their specific needs.
- E-Learning is self-directed and self-paced: Students control the amount of time spent on a particular topic. This allows learners to skip material they already understand or to spend additional time on difficult areas. This individualized approach usually allows learners to complete their education and training faster than in traditional courses.
- **E-Learning is interactive and hands-on:** The use of a variety of multimedia increases student involvement and reinforces the learning experience. This leads to increased retention and a stronger grasp of the subject at hand.

• **E-Learning is flexible:** Learning can take place anytime and anywhere, as long as the necessary equipment is available. The logistics and expense of face-to-face education and training can be extremely limiting when students are separated by distance.

Implementation Challenges in E-Learning

There are many advantages to online and computer-based learning when compared to traditional face-to-face courses and lectures. There are a few challenges as well.

- Computer literacy and access to equipment. Any e-Learning system involves basic equipment and a minimum level of computer knowledge in order to perform the tasks required by the system.
- Some topics are not appropriate for e-Learning. Certain subjects that require physical activity and practice, such as sports and public speaking, are not good candidates for e-Learning. However, e-Learning can be a useful companion to traditional education for teaching background and technical information.
- The flexibility and student-centered nature of e-Learning requires a high level of student responsibility. A successful e-Learning student must be well organized, self-motivated, and possess good time management skills.
- Learners with low motivation or bad study habits may fall behind. Without the routine structures of a traditional class, students may get lost or confused about course activities and deadlines
- Students may feel isolated from the instructor and classmates. Instructor may not always be available when students are studying or need help
- Slow Internet connections or older computers may make accessing course materials frustrating
- Managing computer files and online learning software can sometimes seem complex for students with beginner-level computer skills
- Hands-on or lab work is difficult to simulate in a virtual classroom

Research Methodology

This research paper focused to understand different E-learning systems and their implementation. A detailed questionnaire was designed for primary data collection. The detail list of organizations in the area of Pune, Mumbai and Nagpur were searched where E-learning has been previously implemented and is functioning.

The researcher's focus was on Educational Institutes, IT firms & business services and Finance / Insurance / Manufacturing companies. Out of 273 questionnaires 127 were from educational institutes, 83 were IT firms and business services and rest were from finance /insurance/ manufacturing firms.

Organization wise distribution of the respondent is 46.5% from Educational institutes, 10.3% from Finance and insurance, 30.4% from IT firms and business services and 12.8% from Manufacturing as shown in the figure 1 below.



Figure 1 Sector Distribution

Below figure 2 shows the geographical region wise distribution of the respondents. 27.5% respondents were from Mumbai city. 12.1% respondents were from Nagpur city and 60.4% respondents were from Pune city.



Figure 2 Region Distribution

As per the type of the organization different roles were identified. Responses from these were collected. 39.2% respondents were Consultant or trainer or teacher. 16.8% respondents were developer or programmer. 16.1% were manager or IT manager. 7.7% respondents were from service desk or help desk. 9.2% respondents were students and 11% respondents were system admin as shown in the figure 3 below.



Figure 3 Organizational Role Distribution

As we obtained the results that organizations were utilizing e-learning software, we also collected the data showing the popular e-learning software. As shown in the figure 4 below, we can see that Moodle was used by 34.8% organizations, Docebo was used by 24.2% organizations, Adobe was used by 15.4% organizations and Swayam by 10.3% organizations.



Figure 4 E-learning Software Distribution

We have also collected the data related to time span of utilization of e-learning software in the organization. 35.9% organizations were effectively using e-learning software from last three years. 24.2% were using it for last two years and 16.8% organizations were using e-learning software for last four years. It can be seen that there was a significant growth in utilization of e-learning software in organization.



Figure 5 E-software Implementation in years

Reasons for Implementation of E-learning Software

There was a growing need of e-learning software in the organizations. The reasons implementation of e-learning software was measured based on the following four parameters.

- **Internal Compliance:** It was important to fulfil the internal compliance of organization. It helps employees to understand the industrial or government laws. Around 50% respondents agreed that internal compliance was the reason for implementation of e-learning software.
- Skill set improvement: After implementation of e-learning software, skill set of employees was enhanced. With the effective use of e-learning software, learning ability was increased. As trainings were readily available at any time, user can access them as per their convenience. Hence speed of learning was improved. 51.6% respondents were agreed that using e-learning software there was a significance improvement in skill set of respondents.
- **Cost reduction:** As e-learning software's are available to all at any point of time, speed of learning was increased. If a particular concept was not understood then users can go through the contents again and again. Hence repeated training cost can be reduced there by implementing e-learning software. 58.2% respondents were agreed that with the use of e-learning software cost reduction was possible.
- Monitory benefit: Monitory benefit was important for any business or organization. Reduction in the cost, earning through paid courses using E-learning software provided monitory benefits to the organizations. 58.6% respondents were agreed that because of implementation of e-learning software, there was a monitory benefit to the organization.

Effectiveness of E-learning software implementation

The effective implementation of E-learning software was studies on the following parameters

• Accessibility: Because of the technological advancement, e-learning software's are more accessible. Almost everyone is using internet on smartphones. Hence can access required

software through internet at any time anywhere. 61.5% respondents agreed that as e-learning software's were more accessible and hence effective.

- Session Management: While using e-learning software, session management is very much important factor that affected effectiveness. Session timeout creates disturbance in learning process. For 54.2% respondents learning was affected due to session management. Around 21% respondents learning was not affected by session management.
- **Time bound Activities**: Some activities are time bound activities in e-learning software. Assignment submission can be a time bound activity. If no time limit is given then nobody will submit the assignments. It directly effects on the user performance. According to 54.2% respondents, time bound activities were more effective for learning.
- **Customization:** Customization was the factor that makes you comfortable using e-learning software. Look and feel matters a lot when using anything. If we can customize the page then it creates more interest in using the software. For 59% respondents, customization was an important factor in using e-learning software.
- Flexibility: Flexibility is an important factor from teacher/instructor and student point of view. If teacher wants to conduct online examination then software must be flexible so that it can accommodate runtime changes. If teacher wants to increase the session time then it should accommodate the updated time. This is from teacher point of view. While appearing for the exam, if student wants to pause the exam for reason then this facility must be given to student. Students should also be able to resume the exam. This is the example of flexibility from student point of view. For around 60% respondents, flexibility is very important as factor in using elearning software.
- Interactive: E-learning software should be more interactive. Interactive e-learning software makes use of pre-defined themes, templates and interactions that can easily be integrated with your e-learning program. You can update your company's existing training material and other multimedia to flawlessly create new program. This significantly decreases the development time of the course and maximizes your company's resources. These e-learning software's allow you to quickly updates and revise your e-learning course design, help our training program to stay up-to-date in this fast-changing world. 61.2% respondents agree that more interactivity increase the effectiveness of E-learning software.

Conclusion

This research helped us to understand the implementation of E-learning in the region of Pune, Mumbai and Nagpur. Based on the importance and challenges of E-learning we designed questionnaire to reasons and effectiveness of implementation. E-learning has been mostly implemented by educational institute with the help of Moodle as learning management system. The important reasons for implementation are internal compliance, skill set improvement, cost reduction and monitory gain. Finally, we were able to list the effectiveness of implementation on

the parameters like accessibility, session management, time bound activities, customization, flexibility and interactive.

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UNDERSTANDING ITIL AND ITS IMPLEMENTATION

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Abstract:

Information Technology Infrastructure Library (ITIL) guidelines are effective for standardization. This research paper focus on the understanding of ITIL and its service management model implementation. This paper lists the ITIL implementation level at different organizations, reasons behind implementation and satisfaction level.

Keywords: Information Technology Infrastructure Library (ITIL), ITMS

Introduction

Information Technology Infrastructure Library (ITIL)

The IT Infrastructure Library (ITIL) is a library of volumes describing a framework of best practices for delivering IT services. The ITIL, focuses on business and IT integration. ITIL's systematic approach to IT service management can help businesses manage risk, strengthen customer relations, establish cost-effective practices, and build a stable IT environment that allows for growth, scale and change.

In this era of technology, each business and industry rely on IT services partially or completely. There are thousands of companies worldwide, facilitating other organizations through their IT solutions. It enables organizations to use IT infrastructure in business change, transformation and growth of strategic assets. Such as capabilities, processes, technologies that plays a significant role in achieving company's objectives. Likewise, the goal of ITIL is to facilitate businesses by delivering value IT support. It is a technology process management framework which focuses efficient yet an effective improvement and upgrades.

ITIL Process Model

The ITIL process model has the following components as shown in the figure1

- Service Strategy: Service Strategy is about the selection of services a Service Provider will offer to customers. Service Strategy is also about establishment and management of the broadest policies and standards which govern the way a Service Provider operates.
- Service Design: The Service Design lifecycle phase is about the design of services and all supporting elements for introduction into the live environment
- Service Transition: Service Transition is concerned with management of change and, more specifically, with the introduction of new and changed services into the live environment.
- Service Operation: The Service Operation phase of the Service Lifecycle is concerned with ensuring that services operate within agreed parameters. When service interruptions do occur, Service Operation is charged with restoring service as quickly as possible and with minimizing the impact to the business.
- **Continual Service Improvement:** Continual Service Improvement is about the alignment and re-alignment of services, processes, functions, etc. with changing business needs. It is also concerned with the consistent application of quality management methods to the overall Service Management effort.



Figure 1 ITIL Process Model

Benefits of implementing ITIL practices include:

- Calibration between IT and the business process
- Improved service

- Cost effective by intelligent use of resources
- Accuracy in business management

IT service management system-

Based on user requirements, ITSM should program the service plane. Service programming has four parts, distinguish the service level, management of service stratagem, management of service budget, maintaining life cycle of service. (figure 2)

- Service strategy gives strategic view to the business and helps to deliver value to the customer. Service design process, creates blue print of service required by customers (end users) strategically converted into business objectives.
- Service Transition focuses on how to optimize change to IT service. It adds the process of transition planning and support, service testing and validation, knowledge management.
- Service operations represent day to day management of services.
- Help desk becomes only place of contact (single point of contact –SPOC) to all kind of users. Help desk will guarantee to give same service quality to same level of users.
- The continual Service Improvement (CSI) ensures that IT continually aligns and realign IT services to changing business needs.





Implementation of ITIL

From the list of NASSCOM and MCCIA directory, we have selected around 250 IT organizations in and around Pune who are using ITIL based framework. The results collected from the

1. ITIL Compliant Tool Utilization

Industries are now tending towards ITIL framework to smooth-out their day to day activities. As organizations are using ITIL framework, it was then asked that which ITIL compliant tool they are using. 27.1% respondents are using open source ITIL compliant tools, 23.8% are using in-house tools. 14.7% are using proprietary tools like Service Now, Helpdesk, Fresh service, SAASBMC remedy etc. And 24.5% respondents are not using any ITIL compliant tool.



Figure 3 ITIL Compliant Tool

2. Duration of ITIL Implementation

It is also important that how long organizations are using ITIL framework. 34.1% organizations are using ITIL framework form last three years. 29.3% organizations are using ITIL framework are utilizing ITIL framework from two years. Gradually organizations prefer ITIL framework.



Figure 4 Number of years of ITIL implementation

Reasons for ITIL Implementation

ITIL is implemented in various types of organizations. Accordingly there are different roles of the employees such as Main driver who leads the ITIL implementation activity and instructs how to follow the service lifecycle of ITIL implementation, Participants are the people involved in the

ITIL implementation process, Trainer/Consultants is the expert who delivers the training to all the participants, **Key stake holders** are suppliers, other internal and external departments or whoever is associated with the business and Along for the ride means the people who are not directly involved in the process. Role wise distribution is given in the figure below. Around 50% respondents are the Participants and 15% are Trainer/Consultants.



Figure 5 Stake Holders Participation

- 1. **Internal compliance:** The main reason for ITIL framework implementation is internal compliance. This incorporates the procedures designed by an operational entity such as educational institute or corporation that specifies how user shall operate the instruments at their end. These principles are designed to ensure security and enhance the productivity.
- 2. External compliance: External compliance is a question of following the principles designed by an entity outside the internal network structure, like a government. Governmental rulebooks may need the retention of e-mails and other electronic documents for a specified time period, for example. External compliance may also necessitate the installation of supervisory controls or the compulsory presence of hidden back doors accessible only to law enforcement bodies. According to 53.5% respondents, ITIL external compliance is the most important factor for choosing ITIL framework.
- 3. **Quality of service:** IT services are available 24/7. At any point in time, if outage is there then immediate rectification is possible with ITIL tools. 53.5% respondents consider that quality of service is increased after implementation of ITIL framework.
- 4. **Overall service management:** Overall service management process is automated with ITIL tool. Single point of contact is there for all the queries. Hence effect on the productivity of organization there by reducing the investment cost.

Satisfaction Level on ITIL implementation process

1. **Service Strategy**: ITIL strategy means where, which and how ITIL service is to be stared. And this is based on the gathered requirements. 46.9% respondents are satisfied with ITIL strategy.

- Service Design: Service design is the steps or prototype generation. Once strategy is decided, it is quite easier to build a prototype based on the gathered requirements. According to 56% respondents' service design is the major factor while measuring the progress of ITIL implementation. Once prototype is ready, it is important to transform the design into action. 49.1% respondents are satisfied by service design.
- 3. Service Transition: Service Transition focuses on how to optimize change to IT service. For 57.51% respondents' service transition is an important progress factor and are satisfied with the existing service transitions
- 4. Service Operation: Service operation is the actual development and implementation of ITIL framework. For 53.8% respondents' service operation is an important progress factor and are satisfied with the existing service operations.
- 5. **Continual Service Improvement:** Continual service Improvement is applicable at any stage like in six-sigma. 50.9% respondents are satisfied by continual service improvement.

Conclusion

Information Technology Infrastructure Library (ITIL) framework is studied and discussed in this research paper. Based on the ITIL model implementation of ITSM life cycle is considered for surveying. Based on the primary data collected we have listed the reasons for ITIL implementation and analyzed overall level of satisfaction of ITIL implementation process on five broad areas.

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SOCIAL MEDIA THREATS: ISSUES AND CHALLENGES

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Abstract

Social media users' concerns about their privacy and security have pointed in recent years. Many users forced them to rethink their relationships to social media and the security of their personal information because of the various incidents of data breaches that have alarmed them. Social media platforms, which collect and store huge amounts of personal information, become attractive targets for hackers. This paper will explore how the internet and social networks influence personal information, as well as how privacy becomes a danger and how to implement security awareness to avoid potential privacy concerns. The goal of this paper is to look at social media security concerns and existing mitigation measures in order to gather information and propose best practices to help businesses deal with them.

Keywords: Privacy, Social Network, Security Threats, Cyber stalking, Cybersecurity.

Introduction:

Millions of people use the internet as a primary mode of communication. However, a user must be aware of his data security and privacy, as well as possess the necessary knowledge to avoid any potential threats to the same. Users' privacy concerns have risen dramatically on social networking platforms. With the rise of social networking sites, the default settings share information with the service provider, so users are advised to customize the settings in order to maintain more privacy. Despite this, cyber security breaches are not uncommon.

User privacy and network security is indeed a big hassle to date. Apart from the potential cyberattacks, inefficiency to counter such situations is a concern. Online networks have significant merits. User information shared on social network platforms is highly vulnerable to threats. Thus, privacy and security issues come into play.

Social networking very often makes users susceptible to cyber security threats and equally compromising their privacy. Privacy is likely to be attacked if not utilized responsibly. The creators recommend that a restriction in which protection can be attacked is through unapproved

> access to social user information because of privacy break or poor strategies disablement. Furthermore, they estimated that privacy intrusion can occur as an optional utilization, where information gathered for one design is used to meet different closures, without the knowledge or consent of the information proprietor.

> However, security problems can be addressed if appropriate information strategies and practices provide people control over the disclosure and use of their data. In a similar vein, the hypothesis states that disclosure is contingent on robust instruments that allow users to regulate the amount of information they reveal based on their goals, learning, and attitudes toward security. Such limit restriction can be done in the context of online social range interpersonal communication by utilizing privacy settings. These security settings enhance users' ability to reveal information and also pave the way for providing information about settings to those who require it. Social Media:

Since people consider social media as a personal communication tool, the importance of safeguarding their information stored in these social networking sites is often taken for granted. With the passage of time, people are putting more and more information in different forms on social networks which can lead to unprecedented access to people's and business information. The amount of information stored in social networks is very enticing for adversaries whose aim is to harm someone.





Social networks can be divided into four broad categories: 'social connections, "multimedia sharing,' 'professional,' and 'discussion forums'. Fig 1 depicts the various types of social networking sites that can be broadly classified.

In social connection, People use this network to connect with people and brands online. Although there are other types of social networking sites available online, this type certainly defnes social media now. Sites that come under this category are 'Facebook', 'Twitter', 'Google+', 'Mys-pace'.

This paper presents a study of social networking usage, privacy issues of Facebook and Whatsapp. In addition to this, cyber threats in pandemic situations are discussed and we have suggested relevant cyber security guidelines to achieve trustworthiness in online social networks.

Social Media Usage

Currently, in the era of advanced internet technology, Social Network becomes an incredibly popular tool on the internet and becomes widely used around the world. It is powerful tool in any ages of people especially among teenagers and young adults in the purpose of communication and self- expression, and it is easy mean of sharing information with other users who has a common interest such as photos, likes, dislikes, interests, relationship status, job details, current town details, political views, and religious views. Unfortunately, though this technology most users are not aware of the privacy risk associated whenever they share sensitive information in the internet, so that privacy concern will be raised among those online interactions if their personal information has been shared to other people.

Correspondingly, more than 78% of correspondents did not concern their information to be targeted by cyber-attacks or cyber-crime. The survey also found that one often has ever conversed with anonymous people about personal information, while 15% sending personal information which has not been exposed anywhere before through social networks. 12 % of correspondents using public Wi-Fi to fill online account information, but only 18% of them who concerned that their personal information disclosure is excessive or not and 7% seriously considered their communicating through social networking is one of major factor which information will be lose.

Every social network site asks users to accomplish a profile which contains privacy information including name, address, email and so on. Though this information is claimed to be dangerous which can be easily accessed by an unexpected person, what is happening today, most social network users tend to public real identity and post private information where privacy will be raised. Accordingly, they described that online social networking data is of great help to the researchers, analysts, and any kind of third party who has the opportunity to mine and use data for particular purposes such as spamming, fishing, targeted advertising and so on. This is because sensitive information and their interaction are stored in social OSN servers are not always honest and transparent due to the nature of OSN allows third parties to collect and analyze easily.

However, sometimes there is a need for users to reveal personal information for a particular reason, as demonstrated by. They also illustrated that users have to reveal the personal information on social networks in order to be effective and do this for maturing their identities. Furthermore, in the face of information of behavior of users are able to conceptualize a continuum which describes information privacy protection behavior. This means information can be disclosed accurately on one side, but not for other sides. By the way, users can participate and can protect their personal information at the same time by partly disclosing them.

According to Ankit Kumar Jain, Somya Ranjan Sahoo and Jyoti Kaubiyal, Facebook and Myspace are among the most preferred social networking sites. Since a large amount of the online population utilize social media platforms, it has become a major medium to promote business, awareness campaigns. Since people consider social media as a personal communication tool, the importance of safeguarding their information stored in these social networking sites is often taken for granted. With the passage of time, people are putting more and more information in different forms on social networks which can lead to unprecedented access to people's and business information. The

amount of information stored in social networks is very appealing for opponents whose aim is to harm someone. They can create havoc worldwide with this huge amount of information in their hands. They have presentenced different statistics for OSN security in "Statistics of online social network and media" and the positive and negative impacts of online social networking. They depicted different threats that affect the user behavior in the OSN platform. Authors described the reason behind the OSN security issues in-depth and the defensive solutions for various threats. Authors portrayed certain security rules to protect your system, account, and information. [27] More than half of the world now uses social media (58.4%) 4.62 billion people around the world

More than half of the world now uses social media (58.4%) 4.62 billion people around the world now use social media, 424 million new users have come online within the last 12 months. The average daily time spent using social media is 2h 27m. [14]

Facebook was the first social network to surpass one billion registered accounts and currently sits at more than 2.89 billion monthly active users. In 2022, Social networking sites are estimated to reach 3.96 billion users and these figures are still expected to grow as mobile device usage and mobile social networks increasingly gain traction in previously underserved markets. [15]

There were 448.0 million social media users in India in January 2021. The number of social media users in India increased by 78 million (+21%) between 2020 and 2021. The number of social media users in India was equivalent to 32.3% of the total population in January 2021. [16]

Research Objectives:

- 1. To study the privacy issues of social media
- 2. To recommend security practices for data privacy.

Methodology

As the research paper is of conceptual and review nature, the researcher has applied exploratory research design by using varied secondary data availed from the secondary data sources. Based on the secondary data and review, the researcher has reported on various emerging trends and issues and challenges in digital India. Research reports, journal and newspaper articles from eminent writers have been reviewed.

Threats to Privacy on Social Media

Criminals are expert at tracking social media users and finding sensitive information, stealing personal data. Typical social media threats are as follows.

Data Mining

People contribute personal information, such as their name, birthday, geographic location, and personal interests, through their social media accounts, and leave a data trail on the internet. Companies also collect information on user activities, such as when, where, and how users interact with their platform. Companies store and use all of this information to better target advertisements to their users. Users' data is sometimes shared with third-party organizations without their knowledge or consent.

Phishing Attempts

Phishing through an email, text message, or phone call means attempting to access sensitive personal information. These communications persuade recipients to share sensitive information such as passwords, banking information, or credit card numbers. Phishing attacks often pose as social media platforms.

Malware Sharing

Malicious software is software that is meant to obtain access to computers and is used to steal sensitive data (spyware), extort money (ransomware), or profit from forced advertising (adware). Malware distributors find social media sites to be a perfect delivery system.

Botnet Attacks

Social media bots are automated accounts that create posts or automatically follow new people. A large group of bots form a network known as a botnet. Bots and botnets are widespread on social media and are used to steal data, send spam, and launch distributed denial-of-service (DDoS) attacks that help cybercriminals to access people's devices and networks.

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Facebook

Facebook may be accessed from a wide range of Internet-connected devices, including desktop computers, laptop computers, and smartphones. Users can construct a customized profile after registration (the minimum age requirement has been 13 since 2006). This includes information such as their name, occupation, schools attended, and so forth. Users can add other users as "Friends," send messages, update their status, share images, videos, and links, use various software applications ("apps"), and receive notifications about other users' activities. Users can also join user groups organized by employment, school, hobbies, or other topics, as well as arrange their friends into lists like "People from Work" or "Close Friends."

Privacy Issues:

Facebook Like buttons track us even if we don't click on them. When we click a button on a website, we are broadcasting our interest not only to our friend, but also to Facebook and its advertising partner. Also, if we do not click on a like button, the number of times we visit is counted.

The new TimeLine format brings old lapses in judgment to light: Timeline, which was introduced in late 2011, allows people to easily search back through our old Facebook posts, which was previously very difficult. That could expose private matters and embarrassing photos that we have long since forgotten about.

Cyberstalking is the observation of an individual via the internet, email, or some other type of electronic correspondence that causes fear of violence and interferes with that individual's mental peace [18]. It is an infringement on a person's right to privacy. The attacker tracks the victims' personal or confidential information and uses it to threaten them with constant and persistent

messages throughout the day. This behavior causes the victim to be extremely concerned about his own safety and causes him to experience trouble, fear, or disturbance [19].

Most people nowadays share personal information such as their phone number, address, location, and schedule on social networking sites. Furthermore, they share their location-based data. An assailant can collect this information and use it for cyberstalking [20].

WhatsApp

WhatsApp Messenger is a cross-platform instant messaging service that allows users of iPhone, BlackBerry, Android, Windows Phone, and Nokia smartphones to send and receive free text, image, video, and audio communications. WhatsApp is particularly popular among mobile phone users who do not have unlimited text messaging. WhatsApp has group chat and location sharing features in addition to simple texting. WhatsApp employs a customized version of the open standard Extensible Messaging and Presence Protocol on a technical level (XMPP).

Privacy issues:

WhatsApp has a terrifying vulnerability that could be exploited to ruin your life. WhatsApp hackers could exploit a terrifying 'vulnerability' to break into people's accounts and send fake messages. This could be disastrous, as attackers could destroy people's relationships or careers by sending false texts. Check Point Research's security researchers discovered the flaw. The team claims to have notified WhatsApp but also provided Metro.co.uk with an explanation of how it is possible to spoof a group conversation to send fake messages. They claim that a sufficiently motivated hacker can: Change the text of someone else's reply to a group chat, essentially putting words in their mouth. In a group conversation, use the 'quote' feature to change the sender's identity, making it appear as if it came from someone who is not even a member of the group. This could be used to incriminate someone or close a fraudulent deal, for example. Send a private message to another group member disguised as a public message to all, so that when the targeted individual responds, it is visible to everyone in the conversation. The exploit involves hacking the WhatsApp algorithms, which encrypt messages so that only the sender and recipient can see them. These algorithms can be decrypted and one can see all the parameters that are actually sent between the mobile version of WhatsApp and the Web version.

Cyber Security amid pandemic

In addition to being life-threatening, COVID-19 has destabilized businesses, damaged daily lives, and induced stress and anxiety in individuals. It has stunned the global economy. Researchers and scientists have developed collaboration platforms for the discovery of COVID-19 vaccines and drugs. The production of the vaccine will take significant time to be available for the general public due to testing, safety, and quality assurance measures. [17]

The virus's rapid spread and long incubation period pose novel societal challenges. Nonetheless, one of the positive aspects of this pandemic is that it is occurring at a time when remote

communication is at its peak. This communication's tools and devices are widely available. It is now possible to communicate with coworkers, friends, and family thanks to advances in technology. Online video conferencing apps like Zoom, Microsoft Teams, and Google Meet have seen an exponential increase in the number of new users signing up on a daily basis. [22]

However, in the purview of cybersecurity, teleworking bears a potential risk. Even though employees are safe at home, whether the office data transacted daily is secured or not is still debatable.

Apparently, the configuration of computers at homes of employees are no match for the systems deployed in the office. Hence, the security of the data transacted on the networks in teleworking is highly prone to unauthorized access that can even put the business data at risk of misuse.

Therefore, the employees must refrain from insecure internet providers, to avert the risks of cybersecurity threats.

Employees make use of Virtual Private Networks(VPNs) to ensure online privacy while transacting office data. However, VPNs possess security breach threats, which cannot be neglected. [17]

Cyber threats in the pandemic

Nowadays, cybersecurity has become extremely difficult due to technological advancement. It's common for hackers, attackers, and scammers to take advantage of emergencies, especially when people are scared, desperate, and vulnerable. The coronavirus outbreak is no different. The coronavirus is being used by bad actors all over the world as a new tool for their evil deeds such as hacking, attacking, or scamming.

Malicious Domains and websites

The words "coronavirus," "corona-virus," "covid19," and "COVID-19" have appeared in a wide number of registered domains on the internet recently, and daily more and more increase has been witnessed. Although some are legitimate web sites, cybercriminals build thousands of new sites every day in which spam campaigns, phishing, malware spreading, or servers are compromised. These domains are used to carry out different scams, or they are used to act as a honeypot for the target users. Hackers get personal data through this procedure and then use it for their intended

target users. Hackers get personal data through this procedure and then use it for their intended purposes. There has been an increase in websites that claim to be applications that are supposed to protect

There has been an increase in websites that claim to be applications that are supposed to protect users from COVID-19, such as www.antivirus-covid19.site and www.corona antivirus.com. According to Malwarebytes' blog [23], the website www.antivirus-covid19.site is now inaccessible. The website www.corona-antivirus.com mentions that their application, called "Corona antivirus," has been developed by scientists at Harvard University. But in reality, installing this application infected the system with a malware called BlackNET RAT.

Mobile threats
In this modern era of ubiquitous computing, smartphone users are at their peak. Life without smartphones and gadgets has become impossible, and the use is increasing on a daily basis. At the same time, it's a great opportunity for bad actors to take advantage of it. An application named CovidLock (Ransomware) comes from a malicious Android app that is supposedly helping to track COVID-19 cases. An android app which is offering face masks and safety kits to the worried individuals. Once an individual installs the application, this app delivers a SMSTrojan, which collects the contact list of the victim phone directory and sends auto SMS to spread itself [23].

Privacy concerns

The data-sharing company by technology is playing a role in assisting various governments and their officials in overcoming the dizzying spread of the novel coronavirus by maintaining lockdowns and social distancing, but it is also keeping privacy experts on edge. Apple, Google, and Facebook are already collecting massive amounts of data in order to use it for advertising purposes. Some of them are now providing personal data to public health authorities, government agencies, and even researchers, such as location and other personal information. This could be useful in overcoming the situation, but it also jeopardizes public privacy, and there is concern that this data could be used even after the pandemic is over.

Many industries and educational institutions have recently gone online. Employees all over the world are continuing to work from home by using online communication and conferencing tools and software. Consumers must agree to some terms and conditions before they can sign up for the applications, which include their privacy and security data collection. [24]

Cyber security guidelines

Some common guidelines we need to follow for reducing the effect of threats.

• Selective with friend request

Before accepting a friend request, one should thoroughly examine the requester's profile. Different groups can be created for sharing different types of information, such as a group for colleagues and a group for relatives.

• Sharing Multimedia

Employees should be aware of their company's policy on sharing content on social media before putting any information on their profiles.

- Third-party programmes and links
- When clicking on links provided by various authors, one should be cautious. It might be a malicious website attempting to obtain the user's credentials.
- Two Step Validation
- Wherever possible, enable two-step authentication for all of your social media accounts. This adds another degree of protection to the account. Even if an opponent discovers a user's password, he will still require a second factor to authenticate himself. The second factor is a oneof-a-kind, time-sensitive code that users get via text message.

• Privacy settings

Users should become familiar with the various social media platforms' privacy and security settings and use them [26]. Each platform's privacy and security settings are different. Every platform has settings, configuration, and privacy sections that allow users to control who and what organizations can see what aspects of their professional lives. Sites' default privacy settings should not be used.

The more details disclosed, the easier it is for an opponent to steal identity or commit other cybercrimes using that information. As a result, sharing of information should be restricted.

• Guidelines for employees working from home

Best practices and procedures for regulating the sending of emails or other content to private email addresses and/or cloud storage should be presented to employees.

• Phishing awareness is important. When receiving emails, employees should be cautious and double-check the sender's address for validity.

• Employees should make sure that their home Wi-Fi is password protected.

• Use a virtual private network (VPN). Virtual private networks (VPNs) provide an additional layer of security for internet use at home. They cannot on their own be relied upon to prevent cyberattacks, but they can be a useful barrier against cyberattack. Businesses can use a few basic cybersecurity tactics.

• Apply new technology and tools. To enhance the security of remote working, companies can utilize advanced technologies like host checking (a programme that checks the security posture of an endpoint before approving access to corporate information systems).

• Techniques of intelligence gathering. Businesses should encourage proactive use of cyber threat information to discover relevant indications of attacks (IOC) and mitigate known assaults.

• Risk management is the management of risks. For better risk management, businesses can use governance, risk, and compliance (GRC) systems. GRC solutions give you a clear picture of your company's risk exposure and help you connect the dots between different risk disciplines (e.g. cybersecurity, operational risks, business continuity) [25]

Conclusion

This pandemic has shown us that preparing for cyberattacks is crucial to successfully reducing the risks. The capacity to respond swiftly to unanticipated occurrences can help to mitigate the damage of a cyberattack. Companies that have already profited from secure remote working capabilities will be better prepared to deal with the ever-increasing threat of cybercrime. Companies who were caught off guard will need to review their cyber threat exposure rapidly and prioritize actions to remediate cybersecurity weaknesses in accordance with best practices. Furthermore, for firms that provide remote access to confidential and sensitive data, corporate-owned devices should be the standard. When accessing company data from a personal device is permissible, cyber risks should be examined, and steps made to mitigate cyber hazards. There are steps that may be taken to lessen the likelihood and severity of a cyberattack, but they require focused activity and planning.

In this study, we discussed numerous situations involving online social network dangers and their remedies, which included the use of various models, frameworks, and encryption techniques to safeguard social network members from various attacks. For a better understanding of our survey, we've described various alternatives as well as a comparative analysis of various surveys. Many of these privacy concerns, however, have yet to be addressed. Parents must actively watch their children when they use internet services such as Online Social Networks, in addition to the defensive measures.

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UNDERSTANDING ITIL AND ITS IMPLEMENTATION

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Abstract:

Information Technology Infrastructure Library (ITIL) guidelines are effective for standardization. This research paper focus on the understanding of ITIL and its service management model implementation. This paper lists the ITIL implementation level at different organizations, reasons behind implementation and satisfaction level.

Keywords: Information Technology Infrastructure Library (ITIL), ITMS

Introduction

Information Technology Infrastructure Library (ITIL)

The IT Infrastructure Library (ITIL) is a library of volumes describing a framework of best practices for delivering IT services. The ITIL, focuses on business and IT integration. ITIL's systematic approach to IT service management can help businesses manage risk, strengthen customer relations, establish cost-effective practices, and build a stable IT environment that allows for growth, scale and change.

In this era of technology, each business and industry rely on IT services partially or completely. There are thousands of companies worldwide, facilitating other organizations through their IT solutions. It enables organizations to use IT infrastructure in business change, transformation and growth of strategic assets. Such as capabilities, processes, technologies that plays a significant role in achieving company's objectives. Likewise, the goal of ITIL is to facilitate businesses by delivering value IT support. It is a technology process management framework which focuses efficient yet an effective improvement and upgrades.

ITIL Process Model

The ITIL process model has the following components as shown in the figure1

- Service Strategy: Service Strategy is about the selection of services a Service Provider will offer to customers. Service Strategy is also about establishment and management of the broadest policies and standards which govern the way a Service Provider operates.
- Service Design: The Service Design lifecycle phase is about the design of services and all supporting elements for introduction into the live environment
- Service Transition: Service Transition is concerned with management of change and, more specifically, with the introduction of new and changed services into the live environment.
- Service Operation: The Service Operation phase of the Service Lifecycle is concerned with ensuring that services operate within agreed parameters. When service interruptions do occur, Service Operation is charged with restoring service as quickly as possible and with minimizing the impact to the business.
- **Continual Service Improvement:** Continual Service Improvement is about the alignment and re-alignment of services, processes, functions, etc. with changing business needs. It is also concerned with the consistent application of quality management methods to the overall Service Management effort.



Figure 1 ITIL Process Model

Benefits of implementing ITIL practices include:

- Calibration between IT and the business process
- Improved service

- Cost effective by intelligent use of resources
- Accuracy in business management

IT service management system-

Based on user requirements, ITSM should program the service plane. Service programming has four parts, distinguish the service level, management of service stratagem, management of service budget, maintaining life cycle of service. (figure 2)

- Service strategy gives strategic view to the business and helps to deliver value to the customer. Service design process, creates blue print of service required by customers (end users) strategically converted into business objectives.
- Service Transition focuses on how to optimize change to IT service. It adds the process of transition planning and support, service testing and validation, knowledge management.
- Service operations represent day to day management of services.
- Help desk becomes only place of contact (single point of contact –SPOC) to all kind of users. Help desk will guarantee to give same service quality to same level of users.
- The continual Service Improvement (CSI) ensures that IT continually aligns and realign IT services to changing business needs.





Implementation of ITIL

From the list of NASSCOM and MCCIA directory, we have selected around 250 IT organizations in and around Pune who are using ITIL based framework. The results collected from the

1. ITIL Compliant Tool Utilization

Industries are now tending towards ITIL framework to smooth-out their day to day activities. As organizations are using ITIL framework, it was then asked that which ITIL compliant tool they are using. 27.1% respondents are using open source ITIL compliant tools, 23.8% are using in-house tools. 14.7% are using proprietary tools like Service Now, Helpdesk, Fresh service, SAASBMC remedy etc. And 24.5% respondents are not using any ITIL compliant tool.



Figure 3 ITIL Compliant Tool

2. Duration of ITIL Implementation

It is also important that how long organizations are using ITIL framework. 34.1% organizations are using ITIL framework form last three years. 29.3% organizations are using ITIL framework are utilizing ITIL framework from two years. Gradually organizations prefer ITIL framework.



Figure 4 Number of years of ITIL implementation

Reasons for ITIL Implementation

ITIL is implemented in various types of organizations. Accordingly there are different roles of the employees such as Main driver who leads the ITIL implementation activity and instructs how to follow the service lifecycle of ITIL implementation, Participants are the people involved in the

ITIL implementation process, Trainer/Consultants is the expert who delivers the training to all the participants, **Key stake holders** are suppliers, other internal and external departments or whoever is associated with the business and Along for the ride means the people who are not directly involved in the process. Role wise distribution is given in the figure below. Around 50% respondents are the Participants and 15% are Trainer/Consultants.



Figure 5 Stake Holders Participation

- 1. **Internal compliance:** The main reason for ITIL framework implementation is internal compliance. This incorporates the procedures designed by an operational entity such as educational institute or corporation that specifies how user shall operate the instruments at their end. These principles are designed to ensure security and enhance the productivity.
- 2. External compliance: External compliance is a question of following the principles designed by an entity outside the internal network structure, like a government. Governmental rulebooks may need the retention of e-mails and other electronic documents for a specified time period, for example. External compliance may also necessitate the installation of supervisory controls or the compulsory presence of hidden back doors accessible only to law enforcement bodies. According to 53.5% respondents, ITIL external compliance is the most important factor for choosing ITIL framework.
- 3. **Quality of service:** IT services are available 24/7. At any point in time, if outage is there then immediate rectification is possible with ITIL tools. 53.5% respondents consider that quality of service is increased after implementation of ITIL framework.
- 4. **Overall service management:** Overall service management process is automated with ITIL tool. Single point of contact is there for all the queries. Hence effect on the productivity of organization there by reducing the investment cost.

Satisfaction Level on ITIL implementation process

1. **Service Strategy**: ITIL strategy means where, which and how ITIL service is to be stared. And this is based on the gathered requirements. 46.9% respondents are satisfied with ITIL strategy.

- Service Design: Service design is the steps or prototype generation. Once strategy is decided, it is quite easier to build a prototype based on the gathered requirements. According to 56% respondents' service design is the major factor while measuring the progress of ITIL implementation. Once prototype is ready, it is important to transform the design into action. 49.1% respondents are satisfied by service design.
- 3. Service Transition: Service Transition focuses on how to optimize change to IT service. For 57.51% respondents' service transition is an important progress factor and are satisfied with the existing service transitions
- 4. Service Operation: Service operation is the actual development and implementation of ITIL framework. For 53.8% respondents' service operation is an important progress factor and are satisfied with the existing service operations.
- 5. **Continual Service Improvement:** Continual service Improvement is applicable at any stage like in six-sigma. 50.9% respondents are satisfied by continual service improvement.

Conclusion

Information Technology Infrastructure Library (ITIL) framework is studied and discussed in this research paper. Based on the ITIL model implementation of ITSM life cycle is considered for surveying. Based on the primary data collected we have listed the reasons for ITIL implementation and analyzed overall level of satisfaction of ITIL implementation process on five broad areas.

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UNDERSTANDING IMPLEMENTATION OF E-LEARNING

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Abstract:

This study is to understand the implementation level of e-learning software's in the region of Pune, Mumbai and Nagpur. Using purposive sampling 273 organizations from education sector, IT firms and companies (manufacturing, finance & insurance) were selected. Research questionnaire was used to understand the implementation of e-learning software, identify reasons behind implementation and satisfaction level.

Keywords: E-learning, Learning Management Systems, Pune, Mumbai, Nagpur, Moodle Introduction

E-learning can be offered using different types of electronic media, but it is also an ideal supplement for a traditional education or training program. The technology is used to create and distribute personal, complete, and dynamic learning content that allows learning at anytime, anywhere as per user's convenience. The approach is innovative to communicate almost any kind of academic information. Online learning is focused on knowledge. User of student is attracted to gain or share knowledge. In this mode of learning, instructors and students are separated by time, distance, or both.

What is E-learning?

E-learning is a wide-ranging phrase that's used to describe learning by the use of a computer that's typically linked to a network. E-learning can also be referred to as online learning or education, distance learning or education and technology, web or computer-based training. E-learning has become popular. Due to this numerous educational facilities, businesses and organizations now offer accredited courses, degrees and training through their e-learning programs.

It can be divided into two major delivery methods: (a) Synchronous learning (b) Asynchronous learning

Synchronous e-Learning or training happens in real time with an instructor facilitating the training. Most commonly this type of learning may take place over the Internet using a variety of

communication tools. The student logs in at a specific time and communicates directly with the instructor and/or other students. Synchronous e-Learning may also be accomplished through telephone, video conferencing, or two-way live television broadcasts between instructors and students in remote locations. In synchronous eLearning, student and trainer access the resources simultaneously.

Asynchronous e-Learning may be using CD, DVD-ROM, Intranet, or Internet based. Students generally work on an interactive self-paced program of study. This may include access to instructors or experts through online bulletin boards, discussion groups, and e-mail. Programs may also be completely self-contained with links to various reference materials in place of an instructor. Asynchronous e-Learning allows students to learn anywhere and usually at any time, as long as they have the proper equipment.

Historical Overview of E-Learning

Long before the internet was launched, distance courses were being offered to provide students with education on particular subjects or skills. In the 1840's Isaac Pitman taught his pupils shorthand via correspondence. This form of symbolic writing was designed to improve writing speed and was popular amongst secretaries, journalists, and other individuals who did a great deal of note taking or writing. Pitman, who was a qualified teacher, was sent completed assignments by mail and he would then send his students more work to be finished using the same system.

In 1924, the first testing machine was invented. This device allowed students to tests themselves. Then, in 1954, BF Skinner, a Harvard Professor, invented the "teaching machine", which enabled schools to administer programmed instruction to their students. It wasn't until 1960 however that the first computer-based training program was introduced to the world. This computer-based training program (or CBT program) was known as PLATO-Programmed Logic for Automated Teaching Operations. It was originally designed for students attending the University of Illinois, but ended up being used in schools throughout the area.

The first online learning systems were really only set up to deliver information to students but as we entered the 70s online learning started to become more interactive. In Britain the Open University was keen to take advantage of e-learning. Their system of education has always been primarily focused on learning at a distance. In the past, course materials were delivered by post and correspondence with tutors was via mail. With the internet the Open University began to offer a wider range of interactive educational experiences as well as faster correspondence with students via email etc.

edX website provide certificate courses of various well-known universities of globe. Which include MIT, Harvard, and University of California etc.

E-Learning scenario to Indian region

The e-learning, though reached India late of course, but it is being fast accepted in a big way. The e-learning does not seem to replace the conventional classrooms with black boards but it seems to coexist with the already existing system. This system rather promises to reach too far off rural areas in India where education is still a looming darkness. This objective was achieved by

> providing PCs at low cost with broadband connection and the chances of e-learning to strengthen the educational system in India were increased

> In 1982, India launched satellite INSAT-I. From Delhi Door darshan, educational programs were started. Jamia Milia Islamia University was telecasting learning programs on Door darshan. But these programs were of short duration and not in local language. Initially it had received good response but later it failed due to language barrier, inconvenient timing.

Later on, came the era of CDs and DVDs. Using multimedia learners enjoyed learning with the help of CDs and DVDs. Majority of printed books came along with the CD/DVD where soft copy of the book along with examples, problems and solutions installed. Even educational magazines like PC Quest, Reader's Digest and Competition success review provide a soft copy of their edition.

Now a day's application-based learning is also available. Users download required mobile application on smart phones, I-pods and other hand-held devices. With the help of this advanced technology, education is penetrating in rural areas of India as smart phones are available everywhere.

Some companies compel fresh recruits to follow six months e-Learning course as training from company. Out of box thinking is now promoted. Skill development programs are also available on smart phones.

Benefits of E-learning

There are several benefits of using e-learning as follows:

- It's cost effective and saves time: It reduces time taken away from the office, removing travel costs and doing away with printed materials, online learning helps you to save money and increase workplace productivity.
- Learning 24/7, anywhere: Classroom teaching face- to- face courses only operate within normal office hours. Student can be working professional. By availing on-line learning, student can undergo particular course as per his/her convenience.
- It is discreet: Everybody does not feel comfortable when learning in a large group, especially if they find something hard to understand. E-learning allows each individual to tackle the subject at their own pace, with interactive tasks being set in place to ensure a thorough understanding throughout each module.
- **E-Learning is student centered:** The learner is the core of any e-Learning system. Materials and activities are designed with the needs and interests of the learner in mind. Students assume control of their learning experience and use it to suit their specific needs.
- E-Learning is self-directed and self-paced: Students control the amount of time spent on a particular topic. This allows learners to skip material they already understand or to spend additional time on difficult areas. This individualized approach usually allows learners to complete their education and training faster than in traditional courses.
- **E-Learning is interactive and hands-on:** The use of a variety of multimedia increases student involvement and reinforces the learning experience. This leads to increased retention and a stronger grasp of the subject at hand.

• **E-Learning is flexible:** Learning can take place anytime and anywhere, as long as the necessary equipment is available. The logistics and expense of face-to-face education and training can be extremely limiting when students are separated by distance.

Implementation Challenges in E-Learning

There are many advantages to online and computer-based learning when compared to traditional face-to-face courses and lectures. There are a few challenges as well.

- Computer literacy and access to equipment. Any e-Learning system involves basic equipment and a minimum level of computer knowledge in order to perform the tasks required by the system.
- Some topics are not appropriate for e-Learning. Certain subjects that require physical activity and practice, such as sports and public speaking, are not good candidates for e-Learning. However, e-Learning can be a useful companion to traditional education for teaching background and technical information.
- The flexibility and student-centered nature of e-Learning requires a high level of student responsibility. A successful e-Learning student must be well organized, self-motivated, and possess good time management skills.
- Learners with low motivation or bad study habits may fall behind. Without the routine structures of a traditional class, students may get lost or confused about course activities and deadlines
- Students may feel isolated from the instructor and classmates. Instructor may not always be available when students are studying or need help
- Slow Internet connections or older computers may make accessing course materials frustrating
- Managing computer files and online learning software can sometimes seem complex for students with beginner-level computer skills
- Hands-on or lab work is difficult to simulate in a virtual classroom

Research Methodology

This research paper focused to understand different E-learning systems and their implementation. A detailed questionnaire was designed for primary data collection. The detail list of organizations in the area of Pune, Mumbai and Nagpur were searched where E-learning has been previously implemented and is functioning.

The researcher's focus was on Educational Institutes, IT firms & business services and Finance / Insurance / Manufacturing companies. Out of 273 questionnaires 127 were from educational institutes, 83 were IT firms and business services and rest were from finance /insurance/ manufacturing firms.

Organization wise distribution of the respondent is 46.5% from Educational institutes, 10.3% from Finance and insurance, 30.4% from IT firms and business services and 12.8% from Manufacturing as shown in the figure 1 below.



Figure 1 Sector Distribution

Below figure 2 shows the geographical region wise distribution of the respondents. 27.5% respondents were from Mumbai city. 12.1% respondents were from Nagpur city and 60.4% respondents were from Pune city.



Figure 2 Region Distribution

As per the type of the organization different roles were identified. Responses from these were collected. 39.2% respondents were Consultant or trainer or teacher. 16.8% respondents were developer or programmer. 16.1% were manager or IT manager. 7.7% respondents were from service desk or help desk. 9.2% respondents were students and 11% respondents were system admin as shown in the figure 3 below.



Figure 3 Organizational Role Distribution

As we obtained the results that organizations were utilizing e-learning software, we also collected the data showing the popular e-learning software. As shown in the figure 4 below, we can see that Moodle was used by 34.8% organizations, Docebo was used by 24.2% organizations, Adobe was used by 15.4% organizations and Swayam by 10.3% organizations.



Figure 4 E-learning Software Distribution

We have also collected the data related to time span of utilization of e-learning software in the organization. 35.9% organizations were effectively using e-learning software from last three years. 24.2% were using it for last two years and 16.8% organizations were using e-learning software for last four years. It can be seen that there was a significant growth in utilization of e-learning software in organization.



Figure 5 E-software Implementation in years

Reasons for Implementation of E-learning Software

There was a growing need of e-learning software in the organizations. The reasons implementation of e-learning software was measured based on the following four parameters.

- **Internal Compliance:** It was important to fulfil the internal compliance of organization. It helps employees to understand the industrial or government laws. Around 50% respondents agreed that internal compliance was the reason for implementation of e-learning software.
- Skill set improvement: After implementation of e-learning software, skill set of employees was enhanced. With the effective use of e-learning software, learning ability was increased. As trainings were readily available at any time, user can access them as per their convenience. Hence speed of learning was improved. 51.6% respondents were agreed that using e-learning software there was a significance improvement in skill set of respondents.
- **Cost reduction:** As e-learning software's are available to all at any point of time, speed of learning was increased. If a particular concept was not understood then users can go through the contents again and again. Hence repeated training cost can be reduced there by implementing e-learning software. 58.2% respondents were agreed that with the use of e-learning software cost reduction was possible.
- Monitory benefit: Monitory benefit was important for any business or organization. Reduction in the cost, earning through paid courses using E-learning software provided monitory benefits to the organizations. 58.6% respondents were agreed that because of implementation of e-learning software, there was a monitory benefit to the organization.

Effectiveness of E-learning software implementation

The effective implementation of E-learning software was studies on the following parameters

• Accessibility: Because of the technological advancement, e-learning software's are more accessible. Almost everyone is using internet on smartphones. Hence can access required

software through internet at any time anywhere. 61.5% respondents agreed that as e-learning software's were more accessible and hence effective.

- Session Management: While using e-learning software, session management is very much important factor that affected effectiveness. Session timeout creates disturbance in learning process. For 54.2% respondents learning was affected due to session management. Around 21% respondents learning was not affected by session management.
- **Time bound Activities**: Some activities are time bound activities in e-learning software. Assignment submission can be a time bound activity. If no time limit is given then nobody will submit the assignments. It directly effects on the user performance. According to 54.2% respondents, time bound activities were more effective for learning.
- **Customization:** Customization was the factor that makes you comfortable using e-learning software. Look and feel matters a lot when using anything. If we can customize the page then it creates more interest in using the software. For 59% respondents, customization was an important factor in using e-learning software.
- Flexibility: Flexibility is an important factor from teacher/instructor and student point of view. If teacher wants to conduct online examination then software must be flexible so that it can accommodate runtime changes. If teacher wants to increase the session time then it should accommodate the updated time. This is from teacher point of view. While appearing for the exam, if student wants to pause the exam for reason then this facility must be given to student. Students should also be able to resume the exam. This is the example of flexibility from student point of view. For around 60% respondents, flexibility is very important as factor in using elearning software.
- Interactive: E-learning software should be more interactive. Interactive e-learning software makes use of pre-defined themes, templates and interactions that can easily be integrated with your e-learning program. You can update your company's existing training material and other multimedia to flawlessly create new program. This significantly decreases the development time of the course and maximizes your company's resources. These e-learning software's allow you to quickly updates and revise your e-learning course design, help our training program to stay up-to-date in this fast-changing world. 61.2% respondents agree that more interactivity increase the effectiveness of E-learning software.

Conclusion

This research helped us to understand the implementation of E-learning in the region of Pune, Mumbai and Nagpur. Based on the importance and challenges of E-learning we designed questionnaire to reasons and effectiveness of implementation. E-learning has been mostly implemented by educational institute with the help of Moodle as learning management system. The important reasons for implementation are internal compliance, skill set improvement, cost reduction and monitory gain. Finally, we were able to list the effectiveness of implementation on

the parameters like accessibility, session management, time bound activities, customization, flexibility and interactive.

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