INTERNATIONAL JOURNAL OF RESEARCH IN MANAGEMENT & SOCIAL SCIENCE (ISSN: 2322-0899) IMPACT FACTOR: 6.45

> PEER REVIEWED International Journal

# SANKALPA

# Tilak Education Society's S.K. COLLEGE OF SCIENCE & COMMERCE

Seawoods, Nerul (E), Navi Mumbai - 400706

One Day

# NATIONAL MULTIDISCIPLINARY CONFERENCE

on

The Opportunities of crisis during Covid-19-Innovative trends & development in business world.

Organised by S.K.College of Science & Commerce Saturday. 20th March 2021



# One-Day National Conference On "The Opportunities of crisis during Covid-19-Innovative

# trends & development in business world"

ORGANIZED BY

S.K. College of Science & Commerce, Nerul Navi Mumbai, Maharashtra

Saturday, 20th March, 2021

In collaboration with



**Indian Academicians and Researcher's Association** 

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The college is fully equipment with the latest infrastructure and provides a library, computer lab, canteen, indoor gymkhana and audio visual room. Curriculum followed is as stipulated by Mumbai University with examination for the first two years is conducted by the college.

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## International Journal of Research in Management & Social Science

#### Volume 9, Issue 1 : January – March 2021

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## International Journal of Research in Management & Social Science

ISSN: 2322 - 0899

has been indexed in the IC Journal Master List in 2014.

ICV: 6.35

1 May 2014 Date

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## International Journal of Research in Management & Social Science

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#### ARTIFICAL INTELLIGENCE IN BATTLING AGAINST COVID -19

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#### ABSTRACT

Globalisation describes the way people of the world interact and Artificial Intelligence (AI) is an innovative technology which is helping us to fight this COVID-19 pandemic. Health care requires the support of new technologies to fight against all the odds, to monitor and control the spread of COVID-19. Artificial Intelligence is among the area of science that has found many applications in tackling the problem in many aspects. This technology is helpful for proper screening, diagnosis of the disease, monitoring patients. Here is an overview of applications of AI in different fields including diagnosis, monitoring, etc. In this paper we will have a look on the applications of AI which are used to battle against the problems in this outbreak.

Keywords— Artificial Intelligence, Covid-19, monitoring, detection, technology, Vaccine, technology, machine learning

#### I. INTRODUCTION

COVID-19 is a disease which is caused due to SARS-CoV-2 that can trigger a respiratory tract infection. SARS-CoV-2 was first reported to be observed in China, in Wuhan City in December 19. After that it is continuously spreading around the world. It has created great difficulties in all aspects of human life and newer problems are also emerging every day. To solve this, new technologies are being used and one of the technologies is Artificial Intelligence.

Health care needs the support of new technologies like Artificial Intelligence and machine learning. AI is one of the technologies which is helping the health care sector to easily track the spread, identify the patients, control the infection in real time.

In this we will see an overview of existing work.

#### II. PERSONAL IDENTIFYING, TRACKING AND FORECASTING THE VIRUS OUTBREAK

On January 9,2020 the WHO alerted the public about a flu-like outbreak in Wuhan, China. Ten days earlier, in Canada there is an AI start-up -BlueDot sent alerts to its client about the possibility of the outbreak in December. BlueDot website uses data analytics to track and predict the spread of dangerous infectious diseases.

Then by February, the officials were depending on an AI system known as the "HEALTHMAP" from Boston Children's Hospital, for tracking the spread of the virus. HealthMap was using the data available publicly on the internet to monitor, organize and detect the global public threats. And using this information World Health Organization was deciding which area needs an immediate focus. HealthMap website gets updated in real-time so that it provides the ability to animate the spread of coronavirus globally.

Contact Tracing is the most important and most promising solution for tracking. Contact tracing is basically to figure out who an infected person came in contact with and also trying to prevent them from infecting others.

Go. Data is an investigation tool for data collection during public health emergencies developed by WHO for Ebola epidemic in 2014.

In India on 2nd April 2020, Aarogya Setu mobile App was launched. The objective of the app was contact tracing using the Bluetooth and to map the hotspots nearby. The source code of Aarogya Setu App has been made open source. This App keeps a record of the people you came in contact with. If anyone tests positive for COVID19, then you will be immediately notified and proactive medical help will be arranged.



#### **III. DIAGNOSIS, TREATMENT**

One of the important areas of application of Artificial Intelligence is to find the treatment over this virus. AI can build an intelligent platform for the automatic monitoring and predicting the spread of the virus. It is very important to predict the recovery of a patient so it can help decision makers to take decisions and prioritize resources. Three machine learning techniques that is Support Vector Machine (SVM), Artificial Neural Network (ANN) and regression model are used to build an intelligent system to monitor and predict the patient's recovery. One problem for treating patients is the limitation of the equipment like ventilator systems. As coronavirus is progressing, AI has started manual repurposing of drugs to treat COVID19.

Indraprastha IIT has developed an AI model, which instead of going through entire process manually, it can repurpose medicines according to highest success probability against diseases.

TCS is also using Artificial Intelligence to develop highly effective molecules by crunching down the large molecules of drugs, thus reducing the process time.

In Kerala, delivering hand sanitizers and delivering public health messages at the office entrance buildings and in isolation wards Robots were used.

#### A. Generic Machine learning

To build a more accurate diagnosis model for covid19 based on symptoms of the patient and routine test results, machine learning algorithms are used with the data published. The result of this work says correlation between being male and higher levels of serum lymphocytes and neutrophils. Machine learning algorithms are used to process the clinical data to perform the diagnosis and to improve the accuracy of the diagnosis AI based general diagnosis index is proposed. Also, an AI algorithm is proposed which uses the CT images, clinical symptoms, exposure history and lab testing to diagnose COVID19.

#### B. Telehealth Algorithms

During this pandemic telehealth Algorithm system are very useful as people can receive different services require at home which in turn curbs the spread of virus. An AI based approach is proposed for risk assessment in virtual visits for coivid19 patients. This algorithm uses a natural language processing algorithm which is performed on the data collected through telehealth visits. The natural language processing algorithm provides free preliminary education and advise to COVID19 patients. The system also provides home remedies, preventive measures, health tip and counselling sessions as well.

#### C. Diagnosis through blood test

A machine learning algorithm is used to diagnose the disease through blood test. This algorithm uses 5 blood features, MCHC, eosinophil count, albumin, INR and prothrombin activity percentage. This machine learning method analyse the blood samples as inputs and find the suspected cases of covid19. A machine learning and an ANN with simple statistical test can identify covid19 patients based on full blood counts and also there is no need of knowing the history and symptoms of the person.

#### IV. AVOID DRUG & VACCINE

Artificial Intelligence is used for the research on drug by analysing the data available on COVID19. Standard testing of drugs by the human takes plenty of time and hence this AI technology is used in speeding up drug testing in real time. AI has become a powerful tool for diagnostic test designs and development of vaccination.

#### A. Discovering Potential Drugs

To find some potential drugs against this disease a library of 1670 compounds were proposed through deep learning. A DNN was used to find the host target which are acting to be antivirals and also some potential drugs against this virus. AI is used to perform transcriptional analysis for identifying antiviral drugs from natural

products or from the FDA approved drugs. To battle against this pandemic, SUMMIT the most powerful super computer has helped to fight against this virus. It identified small molecule pharmaceuticals which are effective against COVID19 virus.

#### B. Herbal drugs

It is said that some herbal drugs are helping out to treat this virus. To study this herbal compound and how effective it is, AI is using SVM, machine learning and random forest algorithm.

#### C. Vaccine studies

In the vaccine development, machine learning technology has been used. Vaxign reverse vaccinology tool and also Vaxign -ML i.e., machine learning tool is used for predicting the candidate for covid19.To study the mutation behavior of the virus for vaccine development, Artificial Intelligence is used. It is said that bacilli Calmette-Guerin (BCG) vaccination can lessen the severeness of COVID19. Machine learning algorithms are used for analyzing existence of correlation. K-mean clustering and stepwise linear regression is also used.

On 18 February 2021, seven different vaccines were out across three platforms. And also, at the same time 200 more vaccines are in development out of which 60 are in clinical development.

#### V. CONCLUSION

In conclusion we can say AI is of great help to identify early infections and monitoring the conditions of the patients. Different applications are based on AI and Machine learning which we have seen here, which are helping to fight against COVID19. However, AI has achieved satisfactory results but there is still room for development in new areas. As the vaccines are developed but there is still a point to investigate that for how long this vaccine will strongly protect.

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#### IMPACT OF COVID-19 OUTBREAK IN DIGITAL PAYMENTS

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#### ABSTRACT

The ongoing spread of COVID-19 has become one among the most important threats to the worldwide economy and financial markets. To contain the impact of the coronavirus outbreak, India, like many countries across the world, is taking several measures, including a nationwide lockdown; limiting movement of the whole population; shutting down public places and transport; and urging the overall public to stay indoors, maintain social distance, and work from home. The resulting economic disruption is large and therefore the short-term decline in activity for businesses, both large and little, considerable.

With process expected to be severely hit, the financial outlook of the digital payments sector isn't any different and may follow a uniform trajectory, a minimum of within the short term. But the industry's stability and potential for innovation will play a useful role in rebooting the economy within the new normal.

The covid-19 pandemic could move the planet sooner towards digital payments. Payment systems have demonstrated that they're dependable and sturdy, and still command a high level of confidence from the overall population. However, closure of companies and therefore the lockdown have resulted in lower transaction volumes overall. To aid the recovery and lead the emergence into this new normal, it's imperative for the digital payments ecosystem to evolve rapidly and help shape the post-covid era. In this report we describe the varied digital payment methods that are utilized in the pandemic situation.

#### **INTRODUCTION -**

The Digital India program could also be a flagship program of the Indian government whose vision is to transform India into a digital society and a knowledge economy. "Faceless, paperless, cashless" is one among the roles Digital India professes. As a neighbourhood of promoting cashless transactions and converting India to an organization with less cash, there are various digital payment methods available. Demonetization is probably going to be described as game changers of the Indian economy. On the opposite hand, Demonetization is resulting in boom cashless payments. In this futuristic world, all payments are going to be made by contactless cards, mobile applications and other electronic means while notes and coins will stand abolished. Denmark is reportedly within the forefront during this regard where, under a replacement proposal folding money transactions are going to be disallowed, apart from now in places like hospitals. The Danish financial institution will stop printing currency, and banks will stop carrying cash. In Sweden, it's common practice already for folks to pay pin money to their children electronically. An environment where everyone is paralyzed at home, Covid -19 is further increasing the need for Ecash transactions. Bought via video is currently being introduced. This will help to further increase electronic transactions. Digital transactions have increased during this time. According to the latest data from the Reserve Bank of India, the total value of transactions contracted by 46% in April compared to March, driven by the decline in various payment methods, apart from direct transfer payments of state benefits when using Aadhar platforms, which registered a jump of 138%. Transactions and payments through various banking channels (checks, NEFT and RTGS, and ATM withdrawal) fell between 26% and 71% in April compared to March. The sharpest contraction was observed within the value of transactions issued by the issuance of checks, which fell 71 percent in April to Rs.1.63 lakh crore in April against Rs 5.65 lakh crore in March.

#### STATEMENT OF THE PROBLEM -

We are an outsized cash economy: actually India is that the second largest producer and consumer of currency within the world, next only to china. Producing such an outsized amount of currency is dear. Both the govt and RBI are keep it up moving India towards a less cash economy by encouraging people to shift from cash to electronic payments for all transactions. Digital payments ensure accountability in all the transactions. Since everything is digitally recorded, there's always how to verify and track transactions. When using cash payments, it might be difficult to carry anyone liable for any additional expenses. While India must fully embrace cashless transactions to start the transition to an excellent economy within the coming years, there are still some hurdles to beat. With IoT and AI, it is also important to possess a sustainable and lucrative business model that caters to the new age digital ecosystem with a strong cyber security system. Although the challenges are many, a good start is halfway done and the government is already preparing for a safer and brighter future without money. Sectors which can boost digital payments include small grocery stores, online money transfer, OTT (over-the-top), online gaming, online education, ATM withdrawals and broadband usage.

#### LITERATURE REVIEW -

- Duvvuri Subbarao (2016) his book tell about the idea to take the step by the Government. Government and RBI wants to move India towards a less cash economy by asking people to change mode from cash to electronic payments for all transactions. This change from cash to electronic payments is a regular process and is happening all the time, but its execution will depend on the public's acceptance, which is in part an issue of creating it convenient for people to use electronic payments. In ultimate analysis though, facilitating the shift to a less cash economy may be a question of meaningful financial inclusion
- Dr.V.Sornaganesh and Dr.M.Chelladurai (2016) in his article shows about the condition at the time of demonetization. Researcher took an effort to review about the demonetization impact and financial technology company. FMCG have extended their credit cycle to address this liquidity situation. Some of the consumer's companies have extended some credit to the distributors through RTGS. Digital payment is that the largest bet within the mobile internet space from the technology point of view.
- G.Sudha and Dr.V.Sornaganesh (2019) article shows that after demonetization changes in purchasing behaviour are clearly explained. Post demonetization the major impact is to reduce the paper money and increase the digital transactions. Most of the purchasers used digital cash after the demonetization, used through the mobile applications, Internet banking, etc., for paying their bills.
- G.Sudha and M.Thangajesu Sathish (2020) article shows that post demonetization, retailers will adapt to the digital payment methods. The researcher analysed regarding the transaction methods between the period of demonetization. Many retailers made payments through using various applications.
- M.Thangajesu Sathish, R.Sermakani, and G.Sudha (2020) this study shows that the old system of cash transaction cannot be completely replaced by card or e-payment system. People can adopt and use their mobile wallets for the payment transaction, fund transfer, purchasing groceries and paying bills etc. The study has revealed that trust is the main factor impacting users' satisfaction and it affects on many users willingness to adopt mobile wallets.

#### **OBJECTIVE OF THE STUDY -**

- To seek out the effect of Covid-19 on Digital payments
- To compare the purchasing behaviour before and during the lockdown
- To analyse the mode of payment done by the respondents before lockdown and thru lockdown
- To seek out the web payment site employed by the respondents
- To analyse the issues faced by them while during online payment

#### HYPOTHESIS OF THE STUDY -

- 1. **H0** There is no serious difference between the payment mode during purchasing the product of the respondents before and during lockdown period.
- 2. **H0** There is no connecting relation between the demographic factors and issues faced by the respondents during their use of digital payments.
- 3. H0 there's no association relationship between the demographic factors and preference of online payment site by the respondents.
- 4. **H0** there's no association relationship between mode of payment and buying behaviour of the respondents.

#### **RESEARCH METHODOLOGY -**

The questionnaire was administrated with a sample size of 220 respondents selected by applying simple sampling method. In the present study, both the first data and secondary data are used. The study is largely based on primary data. Necessary secondary data even have been collected from various sources like newspaper, magazines and websites.

#### LIMITATIONS OF THE STUDY -

- The information given by the respondents could be biased because a number of them won't have an interest in providing correct information.
- Respondent tried to escape some statement. This was the most important restriction faced, as it was hard to analyse and reach to a right conclusion.

#### MODES USED FOR DIGITAL PAYMENTS -

#### Banking Cards (Debit/ Credit/ Cash/ Travel/ Others)

Bank cards give customers enhanced security, convenience and controlling feature than any other payment method. These cards including debit, prepaid and credit cards, gives a great convenience. These cards offer 2-factor authentication for secure e.g. secure PIN and OTP.

#### **UNIFIED PAYMENTS INTERFACE (UPI)**

Unified Payments Interface (UPI) is a system that powers multiple bank accounts into a single mobile application (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood. It also works for Peer to Peer collect request which can be scheduled and paid if needed.

#### **MOBILE WALLETS**

A mobile wallet may be a thanks to carry take advantage digital format. You can link your MasterCard or openend credit information in mobile device to mobile wallet application otherwise you can transfer money online to mobile wallet. Instead of using your physical plastic card to form purchases, you'll pay together with your smartphone, tablet, or smart watch. Most banks have their e-wallets and a few private companies. e.g. Paytm, Airtel Money, Freecharge, SBI Buddy, Mobikwik, Jio Money, itz Cash, Vodafone M-Pesa. Citrus Pay, etc.

#### **INTERNET BANKING**

Internet banking, also referred to as online banking, e-banking or virtual banking, is an electronic payment system that permits customers of a bank or other financial organization to conduct different financial transactions via financial institution's website.

#### **MOBILE BANKING**

Mobile banking is offered by a bank or other NBFC which allows its customers to make different types of financial transactions remotely through a mobile device. It uses software, usually called an app, provided by the banks or financial organization for the aim.

<b>Demographic Factor</b>	Options	Frequency	Percentage
¥ •	Below 30	94	42.7
Age	31 – 40 years	57	25.9
	41 – 50 years	34	15.5
	51 and Above	35	15.9
Gender	Male	85	38.6
	Female	135	61.4
Marital status	Married	130	59.1
	Un married	90	40.9
	School	14	6.4
	Degree/Diploma	49	22.3
Educational	Post Graduate	100	45.5
Qualification	Professional	46	20.9
	Other	11	5.0
	Home Makers	24	10.9
	Government employee	34	15.5
Occupation	Private employee	112	50.9
	Business	10	4.5
	Student	20	9.1
	Others	20	9.1
	Up to Rs 10,000	55	25.0
Monthly Income	Rs 10,000 – Rs 20,000	48	21.8
	Rs 20,000 - Rs 30,000	39	17.7
	Above Rs 30,000	78	35.5

#### ANALYSIS AND DISCUSSION -

**Table-1 Demographic profile of the respondents** 

Table 1 shows that majority (42.7 per cent) of the respondents belong to the age group of below 30 years, majority (61.4 per cent) of the respondents are male, majority (59.1 per cent) of the respondents are married,

majority (45.5 per cent) of the respondents are finished their Post Graduate degree, majority (50.9 per cent) of the respondents are private workers majorly (35.5 percent) of the respondents have income Above Rs 30,000.

Paired Samples Correlations								
	N Correlation Sig.							
Pair 1	Vegetables & Vegetables	220	.610	.000				
Pair 2	Groceries & Groceries	220	.705	.000				
Pair 3	Medicines & Medicines	220	.672	.000				
Pair 4	Recharge & Recharge	220	.656	.000				
Pair 5	Bill payments & Bill payments	220	.573	.000				
Pair 6	Hotels & Hotels	220	.644	.000				
Pair 7	Other & Other	220	.662	.000				

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Table 3 - T test on Mode of Payment – Changing behaviour before lockdown and during the lockdown

**H0** – There is no significant difference between the mode of payment while purchasing the product of the respondents before lockdown and during lockdown period.

		Pair	ed Differen	ces					
		Std.	Std. Error	95% Co	nfidence			Sig. (2-	
Factors	Mean	Deviati on	Mean	Interva	l of the	t	Df	tailed)	
				Difference					
				Lower	Upper				
Vegetables	114	.506	.034	181	046	-3.328	219	.001	
Groceries	145	.529	.036	216	075	-4.076	219	.000	
Medicines	232	.554	.037	305	158	-6.208	219	.000	
Recharge	173	.617	.042	255	091	-4.151	219	.000	
Bill payment	164	.656	.044	251	077	-3.703	219	.000	
Hotels	114	.612	.041	195	032	-2.752	219	.006	
Others	136	.596	.040	216	057	-3.391	219	.001	

Source: Primary Data

This table shows the relation between payment made before and during the lockdown period. For vegetables, groceries, medicines, recharge, bill payments, payment of hotels, others category of payments are less than the table value. As a result, null Hypothesis is rejected. So, Alternative Hypothesis is accepted. It concludes that there is a significant difference of mode of payment between before and during the lockdown period.

#### Table-4 Chi square test for demographic factors and problems faced while making payment

**H0-** There is no association relationship between the demographic factors and problems faced by the respondents while using the digital payments.

Pearson Chi-Square	Value	df	Asymptotic Significance (2- sided)
Age	23.442 <sup>a</sup>	18	.174
Gender	6.619 <sup>a</sup>	6	.358
Marital status	3.933 <sup>a</sup>	6	.686
Education qualification	34.050 <sup>a</sup>	24	.084
Occupation	58.682 <sup>a</sup>	30	.001
Monthly Income	19.917 <sup>a</sup>	18	.338

Source: Primary Data

From the above table, it shows the relationship between the demographic factors and problems faced by the respondents while using the digital payments. In Age, the calculated value (0.174) is higher than the significance level at 0.05. Gender wise, the calculated value (0.358) is greater than the significant level at 0.05. While considering marital status the calculated value (0.686) is higher than the significance level at 0.05. In Educational qualification calculated value (0.084) is higher than the significance level at 0.05. While considering monthly income the calculated value (0.338) is higher than the significance level at 0.05. It is stated null hypothesis is accepted. It shows that there is no important relationship exists between age, gender, monthly

income, marital status, educational qualification and issues faced by the respondents while using the digital payment options.

In employment, calculated value (0.001) is smaller than the significant level at 0.05. It shows that null hypothesis is rejected. It results that alternative hypothesis is accepted. So it shows that there is a significant relationship exists between occupation and the problems faced by the respondents while using the digital payment modes.

#### Table-5 Chi square test for demographic factor and online payment site preferred by the respondents

**H0-** There is no association relationship between the demographic factors and preference of online payment site by the respondents.

Pearson Chi-Square	Value	df	Asymptotic Significance (2- sided)
Age	53.274 <sup>a</sup>	15	.000
Gender	12.699 <sup>a</sup>	5	.026
Marital status	11.797 <sup>a</sup>	5	.038
Education qualification	26.652 <sup>a</sup>	20	.145
Occupation	56.545 <sup>a</sup>	25	.000
Monthly Income	21.444 <sup>a</sup>	15	.123

#### Source: Primary data

The above table shows relationship between the demographic factors and preference of online payment site by the respondents. As per age group, the calculated value (0.000) is smaller than the significance level at 0.05. In Occupation, calculated value (0.000) is lesser than the significant level at 0.05. It is stated null hypothesis is rejected. So alternative hypothesis is accepted. It concluded that there is a significant relationship between age, occupation and preference of online payment site.

According to the gender, the calculated value (0.026) is higher than the significant level at 0.05. While considering marital status the calculated p value (0.038) is higher than the significance level at 0.05. In Educational qualification calculated p value (0.145) is higher than the significance level at 0.05. For considering monthly income the calculated p value (0.123) is higher than the significance level at 0.05. As a result, null hypothesis is accepted. It concluded that there is no significant relationship between gender, marital status, educational qualification, monthly income and preference of online payment site.

#### Table – 6 ANOVA for mode payment and buying behavior of respondents

H0- There is no association relationship between mode of payment and buying behaviour of the respondents.

		Sum of	df	Mean	F	Sig.
		Squares		Square		C
	Between Groups	2.102	5	.420		
Vegetables	Within Groups	101.148	214	.473	.890	.489
	Total	103.250	219			
	Between Groups	.638	5	.128		
Groceries	Within Groups	123.889	214	.579	.220	.953
	Total	124.527	219			
	Between Groups	1.765	5	.353		
Transport	Within Groups	94.831	214	.443	.796	.553
	Total	96.595	219			
	Between Groups	1.537	5	.307		
Hotels	Within Groups	80.695	214	.377	.815	.540
	Total	82.232	219			
	Between Groups	.862	5	.172		
Others	Within Groups	92.315	214	.431	.400	.849
	Total	93.177	219			
		C	Dete			

Source: Primary Data

The table states that significant difference between payment mode and purchasing behaviour of the respondents. As per acceptance of null hypothesis (p > 0.05), purchasing and payment mode for Hotels, vegetables,

Transport, Groceries and others are not significant associate between payment mode and purchasing behaviour of the respondents during this lockdown period.

#### **CONCLUSION -**

It is too soon to conclude what the changes might look like in each context, but it is sure that covid-19 is already supporting existing trends towards increased digitization of payments. RBI, last year said it is targeting to increase digital transactions to 15% of GDP by 2021, from nearly 10% at the time. The government is targeting for a billion digital transactions per day as the world's fastest-growing smartphone market gives customers to transact at a single click. The government has asked banks to motivate their clients to use digital payment methods as a safety measure against the Coronavirus outbreak. Meanwhile, RBI has also asked everyone to use digital transactions during the Coronavirus outbreak.

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#### CHANGE IN IT INDUSTRY DURING COVID-19- AGILE METHODOLOGY

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#### ABSTRACT

The COVID-19 pandemic is creating havoc across the world and never before have we seen such a scenario where the world has come together to fight this crisis to save mankind. Such an evolution is witnessed in the IT industry which is known for being dynamic and constantly evolving, continuously unfolding some new pattern in their workplace. During lockdown, many industries came to stand still like manufacturing, food, airline, the only industry which was less affected and later on gained out of this pandemic was IT Industry. Companies like TCS, Capgemini, Deloitte came forward with Agile methodology and Secure Borderless workspaces (SBWS)- A guide for organizations to prioritize people's needs while maintaining business continuity during uncertain times. Under SBWS, a remote way of working was enabled, also changes in work practices, connecting with team thru virtual connects. This methodology was later on taken by various other sectors and industries.

Keywords: IT Industry, Agile methodology, COVID 19

#### **INTRODUCTION**

The novel coronavirus disease was first found in China in December and by April it had conquered the world putting halt to the life of people.

COVID -19 is unprecedented, uncertain and it is been compared to the second world war and the great depression which affected the world economy to its core. A lot of efforts were made to bring about moments in the various sectors of business at the same time keep in time the status quo, shifting work from offline to online. These any way brought about emerges of technological diffusion and development.

BBC pointed out that Unshaken, least affected, the Sector which helped in bringing back the economy is the IT sector. It was a smooth transaction of work from offline to online for this sector during the havoc situation of the pandemic. As they had placed the Agile methodology into their work structure. Companies like TCS, Deloitte, Accenture had placed this methodology

Agile is the software development methodology that helps in gradual software development with the changing business requirements.

#### LITERATURE REVIEW OF THE STUDY

Anupama Kaushik Assistant Professor, Department of IT, Maharaja Surajmal Institute of Technology, New Delhi, India, September 2016-in this his paper he has focused on gaining recognition of Agile methodology with changing environment.

Digital technology use during COVID-19 pandemic rapid review by Deedra Vargo, Lin Zhu, Briana Benwell-, December 2020- in their study they discuss the change in information technology and development of software and hardware which help in coping with the pandemic situation

**Enterprise Agile by TCS, April 2020**- which explains the detail about the Agile methodology and location independents (remote working) and how friendly and effective it is.

Forbes, Tracy Brower, April 2020- her study speaks about the effectiveness of Agile methodology during COVID 19

#### **OBJECTIVES OF THE STUDY**

- To understand the Agile methodology and it working.
- Why was Agile methodology effective during COVID 19?

#### **RESEARCH METHODOLOGY**

The research analysis is based on Secondary data. Secondary data was collected from scholarly books, News articles, published texts & the Internet.

#### ANALYSIS

Agile software development was developed when there was a crisis in application development, the crisis was 'delivery lag'. The industry realized it was not able to meet the client needs and requirements on estimated business time which led to the cancellation of the project halfway.

In 2001, in Utah, a group of professional software development experts came together and primarily focusing on future trends in the development of software as per changing business need. This discussion brought about the process called Agile Manifesto , meaning light and sufficient . This manifesto focuses on people, interaction, collaboration, change, and working software.

In today's uncertain, unpredicted environment Agile approach is the best approach. Under the Agile manifesto values and principles of Agile methodology were declared. Made up of 12 principles and 4 foundations.

#### VALUES ARE

- Individuals and interactions over Processes and tool
- Working software over comprehensive documentation
- Customer collaboration over Contract negotiation
- Responding to change over following a plan

#### **12 Principles**

- Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
- Welcome changing requirements, even late in development. Agile processes tackle change for the customer's competitive advantage.
- Deliver working software frequently, from a couple of weeks to a couple of months, with a preference for the shorter timescale.
- Business people and developers must work together daily throughout the project. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
- The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
- Working software is the primary measure of progress.
- Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
- Continuous attention to technical excellence and good design enhances agility.
- Simplicity--the art of maximizing the amount of work not done--is essential.
- The best architectures, requirements, and designs emerge from self-organizing teams. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

There various approaches to Agile Extreme Programming, Scrum, Dynamic System Development Method, Feature Driven Development, and Adaptive Software Development.

Under the COVID-19 scenario company like TCS which is the backbone of leading organizations globally implemented Location Independent agile tm methodology and Secure Borderless Workspaces (SBWSTM).

Under Agile sense team members start the day with daily sync up and time box meetings, connecting with the team without any distraction. Under this working model first step – Make it live -remote working is brought to life by team member " Always on" video stream and discussing the issue on a live basis, conducting a meeting. Changing the training technique from learn and do to do and learn giving the employee's location leverage independents.

The second step – build a hive – under this step teams have to log in remotely, daily goals are step out of bigger goal and then sub sprint with the team under this working method inspecting and learning. This approach helps with great rigor when the team is working remotely. Building a hive is independent enough which bring about speed and excellence.

The third step - Let them Drive- in this step let the team run the show collectively, the team decides on its bringing about accountability and increased productivity, which thereby reduces the delivery black log, transparency within the team, encouraging creativity which helps to managing the client requirement effectively and efficiently

During the COVID-19 pandemic, technologies are playing a crucial role in keeping our society functional in a time of lockdowns and quarantine. remote working is new normal or working from home or working offline or Agile approach.

Technological advancement from full contact-free payment and robotics delivery.

Agile is a systematic and sequential form of doing working, when things are confusing and arguable, it helps giving regularity, be it regular virtual team meetings.

Agile welcomes the quick shift. When an organization wants quick adjustments, the agile approach which is well suited. It helps in dividing or breaking down work into smaller units and accomplishing them. That is why the Agile approach was the most effective help in planning change within a short period.

Another hallmark for agile approach giving the team member to decide without asking permission with the mangers, which help in creating a sense of accountability and reducing work stress which is high during this COVID-19 period.

#### FINDINGS

- Remote working help in equalizing participation by removing the privilege of the conference room.
- Timeboxing the work, which is fixing a time for each task and help in ensuring no task is worked upon more than it required. It helps in bringing a sense of urgency around high-priority tasks.
- It helps in achieving a bigger goal in a systematic and simplest form without any stress or pressure within the team and brings about the best in the members.
- Agile transformation helps in upskilling the workforce for the pre and post COVID world.
- Agile emphasis on change in mindset than changes management. Which encourages customer-centricity thinking and helps in removing the delivery lag.
- The drawback of it is that it leads to longer working hours for the developers.
- This approach focuses on collaboration and interaction which leads to more of communication and which let to piling of job.
- During the pandemic, were other industries trying to work thru at that time IT employees were working around the clock.
- As the finding,80% said it helps improving team relationship, 43% suggested that face-timing help in developing a deeper relationship with the members.
- 52% feels they were not treated equal and 41% believed colleagues spoke behind their backs

The above finding is as per Harvard business review.

#### SUGGESTION

-Agile methodology requires a much more simplified approach so that other than the IT sector can implement it.

As it works on Kanban, it is a just-in-time scheduling system, which can make work complex.

The agile methodology should be included in the education curriculum so that commoner is aware of it

#### CONCLUSION

Agile is an approach that believes in empowering simple thinking for a complex problem. It believes in changing the mindset than the change in management for better customer satisfaction. Various Agile tools help in achieving various tasks more efficiently and bringing deeper relationships which are highly required during this pandemic.

Implementing Agile methodology is the best way to survive this pandemic period. Because of this methodology, the IT sector could and will survive the COVID period.

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#### INNOVATIVE TRENDS OF EDUCATION DURING & POST COVID 19: A NEW CHALLENGE

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#### ABSTRACT

A very famous saying by Winston Churchill reminds us that change is inevitable. He says we need to change to improve but to be perfect we have to keep changing very often.

Education play's a very important role in life. It is a fundamental right of every citizen. The spread of Covid19 has paused everyone's life for last one year. Many countries had to close their schools due to lockdown announced by their respective government. This impacted the life of nearly sixty billion students across the globe. The educational institution found it difficult to meet the challenges of giving protection and safe educational facilities to students. This made the education stakeholders to think out of the box to find an alternative to continue children's education. Soon online and e -leaning facilities were introduced and is widely accepted today as the situation is still not settled. This proved to be an unplanned and rapid shift in the education sector. This challenge was worked out to ensure a smooth and disrupted learning process for the students. This paper aims to highlight the impact of a pandemic on education during and post COVID19

Keywords: - education, shut down, challenges, unplanned, opportunities

#### I. INTRODUCTION

Education is a very important tool in everybody's life. It makes us stand apart from other living beings. Education helps a person to view life in a broader perspective. A person takes better decision when he is educated. It makes us independent increasing our self-confidence. These facts make it clear that education is very necessary development required in human life. The pandemic Covid 19 had affected this major development across the countries. Children who are the future of each country and the educational institutions which takes up the responsibility to build them were left stranded. Most government temporarily decided to close schools in order to control the spread of Covid.

With school closures across 188 countries many of them started exploring alternative ways to provide continuous education using technologies such as Internet, TV, and radio. All the countries have been executing various education programs so as to keep their children learning. Today the world has woken up to a new era of education with modern techniques and involvement of technology to its best.

#### II. NEW METHODS OPENED

Education changed dramatically with the acceptance of concept of e – learning. More than 90% of the countries adopted digital learning policies. Initially it was found difficult to use this method in pre-primary section. Online platforms were the most used during this time to impart education. It was found that the television had the potential to reach the greatest number of students globally. Some countries even adopted radio-based learning. Today's newly formed education system can be described using Philip Strong's model of epidemic psychology. It consists of three consecutive and overlapping epidemics: those of *fear*, *explanation*, and *action*. Here Strong uses "epidemic" as a metaphor representing all psychological reactions to the crisis. The first aspect opens fear of How will the Educational institutions and students cope with the present situation? In the second explanation stage people analyze the situation,government thinks about a solution,social media allows experts to share their views. Students, parents, institution are all affected. Many have realized the importance of educational structure in everyday life during this time. The third stage was the action. In this stage new methods were discussed and developed to continue the education even in this pandemic times.It was a quick and overnight transformation from working in classrooms and lecture halls to digital platforms. Free webinars, workshops, seminars, blog posts were all adopted to make it more effective. Thus, we found our education entering and accepting digital platforms widely.

#### **III DIGITAL CLASSES**

The new situation has given rise to online classes. There has been major developments which has become the new normal:

#### Vide Tutoring

This gave the students a feel of sitting in their class. They could see their classmates and listen to the lectures sitting at home. Face to face communication is very important in teaching which was fulfilled by this method.

#### **Online Classes**

Zoom or Microsoft Teams has provided the facility of online teaching. Learning, sharing notes, homework, assignments are all made possible today online. The teachers could also give their feedback to the students who have submitted their work.

#### **Group Chat**

The communication became very smooth between teachers and students with group chat in educational app. Parents could easily connect to teachers and ask any query regarding homework, assignment or holidays. Announcements can also be made by teachers to students.

#### **Educational Quiz**

Quiz makes education very interesting. Online platform has encouraged teachers to use this method of teaching often. Students are thrilled to learn more and learn better just for the sake of winning against the opponent in the quiz. This makes online learning interactive.

#### **Raise and Solve Doubts**

Students can raise any doubt in any subject that teachers have taught. Teachers can solve the doubts through the app and keep the studies continue. This helps the students to keep updated with studies

#### **Performance Report**

It is possible to keep a track of student's performance. This consists of feedback on performance of student in test and quiz, the attendance of the student in online class, suggestions for improvement

#### **IV EDUCATIONAL APPS**

In response to situational demand of online education many education apps emerged. Some of them even offered free access to their services. A very prominent name in everyone's mind today is the prime educational app Biju's. Their response to covid situation was much appreciated. Biju's made content on its learning app free for all students. It also introduced live classes to further student engagement. This quick and thoughtful act saw a remarkable rise in its number of users. The month of March and April there were nearly 13.5 million consumers of this app. Byju's in India offers learning programs for students in classes 11 and 12. Their app based programs also covers coaching for competitive exams like JEE, NEET and IAS. The online coding platform WhiteHat Jr. has witnessed a sudden surge in traction during Covid. It is India's online 1:1 platform for coding and math. It is an advanced learning platform where Kids were taught logic, structure, sequence, and algorithmic thinking. This method was believed to generate creative outcomes like animations and apps. All classes are taught live. Vedantu, Khan academy, Topper are some other apps in India. Tencent classroom, meanwhile, has been used extensively since mid-February in Wuhan according to Chinese government order for uninterrupted education. A company in Singapore named Lark provided many features like unlimited video conferencing time for students, auto translation facility, a method of real time co editing for project work and facility of smart calendar scheduling for teachers.

#### V NEW EXAM WAYS

Once the classes found its run smoothly through online next question that arouse was about the exams. How to conduct exams online ? This problem too found a solution soon. With the fast-technological development and researchers working for it there were new ways for conducting online exams. Artificial intelligence system with face recognition algorithms using integrated web camera provide immense opportunity for virtual evaluators where ever their candidates are. Today at a time when face to face contact is at a big risk online examination have been a great way to keep higher education process sailing without a halt.

#### VI E – LEARNING BENEFITS

This new wave of technological learning which was fast adopted due to covid has seen a lot of benefits. The young generation has taken it well. It has brought a collaborative learning environment regardless of wherever is the location. Dividing students to group for better accommodation has encouraged active participation. Those students who never respond in live classes have started speaking up due to less strength and no fear of crowd. Audio visual learning has made the virtual classroom very dynamic. Quick answerable quizzes has made learning more enthusiastic where the students wait eagerly to see their scores. New progressive educational technologies has made learning process much appealing.

#### VII CONCLUSION

Education was one of the sectors hardest hit by the COVID-19 lockdown with social distancing measures which meant that the schools could be closed for inevitable future. The string of education was to be broken but it was soon fastened by technology. This paper has touched upon all possible changes enveloped by the education

sector. Today we witness all country's continuing to support the students by adopting a new era in education. A time of crisis is also an opportunity for all education systems to look into the future, adjust to possible threats, and build their capacity. With all its challenges we have the new normal being accepted truly.

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# THE PANDEMIC, LIFE CHALLENGES AND EDUCATIONAL TRANSFORMATION – A NEW PERSPECTIVE

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#### ABSTRACT

The harshest experiences brings to us different experience and are a reality check of our preparedness towards life challenges. Every challenge and experience brings with it opportunities, and requires different coping skills and life skills. The pandemic was no different. It opened new arena in the field of education, pertinent to be reframed and revamped, with a changed perspective, enlarging its scope which time has been pressing for a long time. Today, the teaching fraternity turned out to be the most resilient and has the potential to transform education, prepare children for life challenges and meet the demands of the changing world at large..... be there be pandemic or no!!

#### 1. INTRODUCTION

It is well said by an unknown author,

"Only the harshest personal experiences open our eyes to immaculate possibilities and the splendor of our world".

Let's celebrate the resilience of every person who emerged victorious and is prepared to welcome the new normal!! A never seen before period was witnessed where people where gripped with fear, darkness and struggles! A sense of uncertainty prevailed in the minds of people. It was challenging to accept the changes and get accustomed. And the period pressed for the need to reconsider strategies in every sphere of life and redesign it from a different perspective.

My every article talks about 'Resilience' as I it consider it as the most profound skill to build one internally and face the life challenges with grit and determination, courage, accept failures and setbacks and handle situations smartly.

Resilience does not only allow fighting during adversity but also enhances your personal growth and empowers you with smart decision making techniques with specific skill sets and face the world courageously. In view of the same let us relate this to the pandemic and the challenges that were posed due to pandemic.

The century witnessed a profound impact of pandemic and all together a very different life time experience. It compelled the policy makers of every sector to reconsider life and its challenges from a different perspective. People from all strata and profession went thru' a difficult phase of life. It gave the greatest lesson to humanity.

The most important lesson that came thru' the pandemic was that, "Your life struggles are your own struggles, nobody would come to your rescue and you have to fight it by yourself". Remember that by pressing the value of life, it also left the Covid infected person to fight and face the struggles all alone! It is true that our life experiences shape us and prepare us for difficult times.

As we understand every coin has two sides, and has pros and cons, the same was witnessed during pandemic. It came with troubles and sufferings and also the life learning's and opportunities. For some it came in disguise as blessing and created endless opportunities. The times of adversity teaches us the most valuable lessons of life, brings one to real terms and teaches the lessons of life and wisdom that no book can teach.

#### 1. THE PANDEMIC, LIFE CHALLENGES AND EDUCATION

Challenges are indispensable part of life. The experiences gained from the challenges make one stronger and wiser. Let us park in our minds that these life challenges require different coping skills.

Challenges in life rekindle our thirst to understand what we are? The challenges are in almost every aspect of life. Challenges that one faced during pandemic and also that one faces irrespective of pandemic are-

- 1. Challenges in nurturing relationships
- 2. Social challenges
- 3. Economic Challenges/Financial Crisis
- 4. Health Challenges
- 5. Workplace challenges

- 6. Career Challenges
- 7. Facing failure and setbacks

Facing these challenges require different life skills which can be inculcated thru' education. These life skills allow us to reflect and ponder our actions, and allow finding new ways of thinking by building a strategic thought process by way of problem solving skills, decision making skills and critical thinking skills. Self-awareness, interpersonal skills and empathy are indispensable skills and at the core of the education. The pandemic strongly emphasized on changing the overall approach towards education and addressing these issues rather than focusing on the grading factor, ironically which presently is based only on the cognitive domain.

Let us understand the fact that life challenges us so that we become enlightened and in the period of struggle we recognize our intrinsic nature and instinct and unfold our potential to face challenges and transcend its beauty internally.

Acc. To Erik Pavernagie, "If our mind remains freeze-framed by inhibiting and hampering habits, in an ever changing world, we won't be able to get rid of that weird feeling of not belonging anywhere and not taking part in authentic life challenges".

One of the prime aims of education is the holistic development of a person. And education touches upon every domain of human personality – Cognitive, Psychomotor and the Affective domain, every trait of the personality and manifests its potential to its best.

The most affected, impacted and the most transformed sector due to pandemic was the education sector. It opened the educational arena with a wider scope, which ironically just remained as part of the ideology and theoretical part of discussion. Since education is at the core, its relevant impact is seen on all other spheres of life – whether Social, Economical or cultural. Every domain is influenced by the standard of education imparted.

The teaching fraternity today turned out to be the most resilient and accepted the new challenges posed by the pandemic. Let us relate this with the quote in words of Dr. Kathleen Hall – Preventive Medicine-

"The weather of our lives (Suffering, loss, disappointment and disease) helps to define our meaning and purpose. Instead of attempting to change the weather, or to run from storms we can chose to turn within and cultivate deep roots, a strong trunk and flexible branches. When we turn within, we create the opportunity to emerge transformed by the storm, creating a new sense of strength and balance".

The pandemic came as an opportunity for self-transformation and educational transformation. Inevitable changes, encountering challenges and overcoming these challenges redefined the ethos of education.

#### 2. TRANSFORMATION IN EDUCATION

During the pandemic very frequently we came across the phrase "Covid Appropriate Behavior". And now in the context of imparting education we have to consider and reframe the phrase as 'Situation Appropriate Behavior'. Any pandemic, any situation, hands on task requires appropriate behavior to handle the situation. Covid appropriate behavior in itself emphasizes on one's self-responsibilities, behavior, duties and rights.

The phrase talks about the type of education to be imparted at par with the bookish knowledge. The above discourse is comprehensive and suffices to understand the reasons behind dynamic transformation in education.

It compelled the policy makers to consider education from a new perspective, which time has been pressing for a long time. Unfortunately we have limited it to syllabus completion, passive and insatiable evaluation without productive output. Thus, a revamped and redefined approach needs to touch upon the different aspects of human life. Some of the areas where transformation in educational perspective was seen and which needs to be indispensable part of education system during schooling are-

- 1. Digital Education The most talked of transformation in education during pandemic
- 2. Health Education, Fitness And Nutrition
- 3. Financial Literacy
- 4. Skill Education and Upgradation Hard skills and Soft skills
- 5. Socialization from modern perspective
- 6. Cultural Transformation

- 7. Nurturing Relationships
- 8. Emotional Development
- 9. Inclusivity and Equity
- 10. International Collaboration
- 11. Mental Health Education
- 12. Changing Role of Teacher's
- 13. Utilization of Learning Resources
- 14. Civic Responsibilities
- 15. Cleanliness and Hygiene
- 16. Community Commitments

17. Education from Spiritual Aspect (Like Value of Life, Purpose of Life, Need to accept challenges and so on)

The above points are open to detailed discussion but a constraint in present article. The National Education Policy is on the floor and ready to be implemented. But before it could be rolled out, the nature had its own lessons for mankind. After the pandemic is over, these aspects are still required to be part of the educational process. Today there was pandemic, but tomorrow there may be some other situation. Are we prepared for such a situation again without having being transformed and redesigning the educational policies? The right education is not about completing the syllabus and grading with stale assessment strategies which leave behind the child far from reality. IT is time to bridge the chasm of education imparted today and the transformed education of tomorrow.

To sum up we can relate the pandemic, the life challenges and the educational transformation required from a different perspective, take it as a blessing and opportunity in disguise, and form the paradigm policies for a better tomorrow!!

Along with making oneself Safe, Let Other's Too Be Safe!! And let us face the life challenges that come to us with resilience and empathy!!

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#### **COVID-19: OPPORTUNITY FOR OTT PLATFORM**

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#### ABSTRACT

Change is hard. And in a crisis like COVID-19, it got very difficult for the people. Covid-19 led to a situation in which people were locked up in a house initially and led to slow down of the economy like never before, leading to business closures, rising unemployment, increasing death toll, isolation and overall slowing down of all things. But this strict lockdown boosted media consumption. Even though pandemic and the lockdown created havoc on film theatres, OTT platforms proved a boon for people working in entertainment industry and audiences. With the whole country people being locked inside their houses, the only relief for them were their smartphones, which possibly gave way to the next wave of growth for OTT companies. In India, Amazon Prime, Disney+ Hotstar, Eros Now, Netflix, Hungama Play and some 30-odd platforms have mushroomed and are being watched by majority households. The current study examines the rise of OTT Platform among Indian audiences and the future of OTT to fill the gap of previous likes of Indian audience in entertainment industry.

Keywords: Entertainment, OTT, Lockdown, Indian Audience.

#### **INTRODUCTION**

Digitalization globally has changed the pattern & way media is consumed. Increasing number of internet connections, availability of better networks, technological innovations and availability of smart phone devices have resulted in the rise of new OTT platform that offers services to viewers directly via the internet. By the end of fiscal 2023 India is likely to emerge as the second-biggest OTT market after US to reach a value of 138 billion with the 45% estimated growth. Report of the Federation of Indian Chambers of Commerce & Industry (FICCI, 2019) states that it projects 30–35 million OTT subscribers in India by 2021, there are high chances that OTT services will soon surpass the traditional media distribution channels.

(Deloitte,2019) states that with the audience focused on infotainment and increasing demand for global content, India is a thriving marketplace for OTT platforms. With a uncertain Situation like pandemic which forced the people to remain indoors and everything being shut, an unexpected rise in the demand of OTT content has been noticed.

Once considered a luxury, today good number of Indians are shifting towards cord-cutting or online streaming. While the figures show that the OTT Plaform is still at its initial stage, the entry of almost 40 OTT companies in a span of just three years indicates the massive potential of the industry. It is reported that out of five Smartphone users in India, four people at least are found watching OTT content in any one OTT app (New18.com, 2019). The OTT apps have become the most downloaded app then social networking and e-commerce apps. The streaming market will collectively account for 46% of the overall growth in the Indian entertainment and media industry from 2017 to 2022 (PwC India, 2018).

#### LITERATURE REVIEW OF THE STUDY

In a report by (Deloitte,2020) it is noted that the rise of internet- enabled digital devices capable of supporting digitized content has led to an increase in the use of digital content globally. In India, this trend is observed across variety of platforms such as audio, visual, news, music etc. Indian youth on an average is found spending 14% of their time and 17% of their monthly expenditures on entertainment. Indian internet consumer is found consuming an average of 6.2 hours of content on everyday basis out of which 21% of the time is spent on audio-visual entertainment. Due to easy access to vast library of OTT platform content at any time & place has led consumers to develop certain favoritism for specific content.

Similar observations can be seen in (PwC, 2020) India's report that slated a huge opportunity for OTT platforms in India. The report states that pricing of such contents can become obstacle to the growth and suggests a revised policy to foster the growth of OTT market in India.

(Paramveer Singh, 2019) stated that over-the-top applications are changing media consumption patterns in India. The study also states the future of OTT in India to be promising due to increasing smartphone penetration, economic convergence of media companies (take-overs/ mergers) at national or international level, and quality of reception of digital content. Also instrumental is the competitive internet data plans offered by telecom service providers in India.

#### **OBJECTIVES OF THE STUDY**

- The main aim of the paper is to study rise of OTT platform among Indian Audience.
- The study also tries to examine the future of OTT platform in India.

#### METHODOLOGY

The research analysis is based on Secondary data. Secondary data was collected from scholarly books, News articles, published texts & Internet. Observation of trends and reports available online is carefully conducted to discern important data

#### **DATA OBSERVATION:**

#### **Reasons for the rise of OTT Apps:**

Currently more than half of the world's population is using internet. Though India stands second to China in terms Internet users. India had 451 million monthly active Internet users at the end of 2019, which is projected to be at 666.4 million by 2023. (IAMAI, 2019).

However, a large segment of rural population in India is still not having Internet access. Therefore, there is a good opportunity for overall internet population growth. In a country where nearly 70% of the population resides in rural regions, no service meant for the masses over here can lead to great loss by overlooking this market.

Reliance Jio has been mainly responsible for the increase in demand of Internet and OTT platforms. Jio's network supports over 55% of India's overall OTT traffic and over 65% of OTT consumption on a Smartphone (Keshavdev, 2019).

Online video consumption is heavily reliant on the availability of devices that are compatible with online video viewing. The Smartphone is the preferred device for watching video streaming contents in India. In February 2019 it was observed that nearly 144 million people spent a total of 362 million hours on an OTT platform out of which, 87% of time spent took place in a Smartphone and 13% in a desktop (Gevers, 2019).

An important factor that led Indians to opt for the streaming services is the availability of personalized content. Research by IHS Markit reported that 76% & 74 % of them were of the opinion that availability of localized content and quality of dubbing & subtitles of international content are the critical decision-making factors (Begum, 2018).

According to a market study conducted by Brightcove in partnership with YouGov, 29% of consumers mentioned that they prefer to watch movies in the free online streaming sites. 23% of the consumers said that they would rather pay a lower amount and would watch one to three ads (Brightcove, 2018). Therefore, the most common type of monetization model used in OTT platforms is advertising, as it is considered to be successful, and also generate overwhelming revenue and subscribers (Jirakasem and Mitomo, 2019)

OTT Platforms	Usage Share (in %)
Hotstar	20
Amazon Prime Video	20
Netflix	15
SonyLIV	5
Zee5	5
ALTBalaji	5
Viu	5
Hungama Play	5
Eros Now	5
Others	15

## Table 01. Market share of OTT platforms in India

Source: Counterpoint Technology Market Research.

Table 02. User engagement among the OTT platforms						
OTT	0-3 Hours	3-9 Hours	9-21 Hours	More than 21 Hours		
Hotstar	40%	36%	17%	7%		
Amazon Prime Video	31%	<b>40%</b>	20%	8%		
Sony LIV	38%	37%	19%	7%		
Netflix	31%	39%	22%	7%		
Voot	37%	37%	18%	7%		
Zee5	23%	43%	26%	8%		
ALTBalaji	32%	38%	21%	8%		
Eros Now	30%	40%	21%	9%		

Source: Counterpoint Technology Market Research.

#### FUTURE OF OTT IN INDIA

The government of India has established a dedicated committee for creating an efficient pathway for the roll-out of 5G and develop the next generation of broadband infrastructure. As consumers are seen to be increasingly preferring high-definition and immersive content, the 5G is expected to create an opportunity for new product and services offerings in the media and entertainment industry (Deloitte, 2019).

Pro Kabaddi League, Indian Premier League (IPL), English Premier League (EPL), IndianSuper League (ISL), Formula One, German Bundesliga, and Grand Slams. Cricket also provided a significant push to SonyLIV in 2018, when they acquired the streaming rights for India's cricket tours to South Africa, England, and Australia. It is estimated that users spend an average of 30-35 minutes watching sports on OTT platforms (Ernst and Young, 2019).

Primary streaming services like Amazon Prime and Netflix are investing more on producing content besides Hindi and English, in eight major Indian languages. The demand for local language content development will give rise to new platforms and content creators that will work towards creating narratives that cater to each of the markets.

#### **RECCOMENDATION & SUGGESTION**

- Providers should focus on devoting attention on developing a 'fan-base' of customers who are emotionally • engaged with the firm and its offerings by making use of social networking sites and apps to engage users and encourage them to develop a user community where they can discuss the content with each other.
- Provide customers with a differential and improved service experience by reaggregating or re-bundling their content libraries to include a wide range of offerings, including video, music and gaming services.
- By delivering personalized content to each user based on the user's preference record. Steps should be taken to update data on customer satisfaction with the content so as to improve the chances of service recommendation.

#### CONCLUSION

On the basis of above facts, figures and discussion it can be concluded While OTT is looking forward to capture a new position in the entertainment industry, the habitual preference for TV media cannot be ruled out. The reason is that televisions are now extremely affordable, and people can get a basic cable connection for Rs. 150 to 500 a month. Though Web series emerges as another favorite program format. Lockdown, is not merely is social or political mandate, but also cues a looming economic crisis of global scale. The world as we knew will surely change for better hopefully, but how the media scenario plans out will very much depend on consumer attitudes & the economic situation post lockdown. Thus, OTT platform will have to go through many changes and advancements until they get the right business model that make them lead to their success over cable satellite and cable television.

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#### OPPORTUNITIES FOR FARMERS TO CONNECT DIGITALLY WITH CONSUMERS IN COVID -19 SCENARIO

#### Prof. Palak Tripathi

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#### I. ABSTRACT

As of late, the prominence of farmers' business sectors has expanded in metropolitan India. Alluded to as "Rythu Bazaar" in Andhra Pradesh and Telangana and "Apni Mandi" in Punjab, farmers' business sectors have filled in number and would now be able to be seen in practically all huge and medium-sized urban areas across India. Like the town haats in rustic India, the business sectors permit farmers from the peri-metropolitan regions to sell straightforwardly to metropolitan shoppers.

In certain states, the farmers' business sectors are overseen by the farmers and purchasers themselves, while in others, governments assume a job. These business sectors oblige shoppers relying upon neighborhood interests, inclinations, and tastes. Regularly they take into account a specialty fragment of the metropolitan populace by providing natural produce that is sold at a higher cost than normal.

Keywords: Farmers efficiency, cost efficient, purchasing behaviour.

#### **II. INTRODUCTION**

A few weeks ago, Dhananjay K.C. he was concerned that thousands of pounds of grapes grown on his family's farm would be wasted as the harvest was ready but its sale was no longer possible due to nationwide locks made to control the spread of coronavirus. However, like many farmers across India, he decided to turn this problem into an opportunity and reached out to online crop markets and groups to sell their product directly to consumers.

"I found an online platform, the Harvesting Farmer Network (HFN) that helped farmers sell their crops and get a good price for it. I contacted them, sent the details of the crop and soon we sold about half of our crop to a buyer in Bangalore, "said Dhananjay K.C. told Mongabay-India.

Dhananjay and his family live in the Gudihalli region on the outskirts of Bengaluru (the capital of Karnataka). He is a mechanical engineering student at an institute in Bengaluru and had come home to be with his family during the closing ceremony. The key to the whole of India began first on March 25 for a period of three weeks after which it was added twice, with the current extension reaching March,2021.

#### **III. LITERATURE REVIEW**

3.1: Kling (2005) investigated the effect on Indian farmers market by considering sample size of 100 consumers using research tools like descriptive statistics, regression analysis, and event study. The study found that at the end October and December average return is far higher and better as compared to pre-covid.

3.2: According to Dent B, Macharia J. 2017. 7 Steps to Connecting Farmers to New Markets: A Practical Guide. World Vegetable Center Publication no. 17-824. 16 p. The Australian Centre for Interational Agricutural Research (ACIAR) invests in applied research to improve agricultural productivity, sustainability and food system resilience in developing countries. It is an Australian Government statutory authority within the Foreign Affairs portfolio and works through bilateral and multilateral research partnerships. The beneficiaries of these programs include farmers, rural poor, consumers, researchers and policymakers.

3.3: Dr. Sarika Sharma (2020) has study on "Agromart" of Indian farmers post covid. She states that Farmers's In a city many people invest in shares sold by the companies, they buy shares in highest quoted price by the way of biding. In large stock markets such as BSE and NSE stocks are sold to the prospective shareholders on bid price from this the company gets profit through shares and acquire funds for various purposes. In this way companies get profits through shares which are sold through a highest bid price.

#### **IV. OBJECTIVES OF STUDY**

4.1: To study the impact of pandemic on Indian farmers market.

4.2: To study the effects of pandemics on Indian agricultural market.

## V. RESEARCH METHODOLOGY

#### 5.1: RESEARCH METHOD

• "Descriptive Research" has been adopted for this research.

ISSN 2322 - 0899

- The research is based on primary and secondary data.
- The Structured Questionnaire was used to collect primary data.
- The secondary data is collected from bulletin, journals, reports and various interne websites.
- Sample size of this study is 100 consumers across the Navi Mumbai.

#### VI. HYPOTHESISNOF THE STUDY

- 6.1: Ho: Pandemics has no impact on Indian farmers market.
- H1: Covid has impact on Indian farmers market
- 6.2: Ho: Pandemics have no effect on Indian farmers market.

H1:Covid have no effect product on Indian market.

#### VII. LIMITATION OF THE STUDY

- 1. The research location was limited to Mumbai and Navi Mumbai area. Thus the result is not applicable to the whole India.
- 2. The respondent might be biased and may not answer all the questions truthfully. Their misconception forms a limitation to the study.

#### VIII.DATA ANALYSIS AND INTERPRETATIONS

Demographic analysis is done to ensure that data collected is reliable and helpful to validate the results. Data was collected related to the variable like age, gender, occupation which is important for the analysis of research study undertaken.

#### ✤ Demographic analysis and interpretation

#### 8.1: Gender wise classification

Gender	No. of Respondents	% of respondents
Male	62	62%
Female	38	38%
Total	100	100%

#### **SOURCE:** Primary Data

Table 01 shows the gender wise classification of respondents. It is found that 38% of the respondents are females and 62% of the respondents are males.

#### 8.2: Age wise classification of respondents

Sr. No	Age Group	No. of Respondents	% of Respondents
1.	18 to 29	43	43%
2.	30 to 41	29	29%
3.	42 to 53	20	20%
4.	Above 53	08	8%
	Total	100	100%

#### **SOURCE: Primary Data**

Table 02 shows age wise classification of respondents. It is interpreted that majority of the respondents are in the 18-29 years of age group.

#### 8.3: Profession wise classification

Profession	No of respondent	% of respondents
Student	45	45%
Self- employed	25	25%
Housewife	12	12%
Business	18	18%
Total	100	100%

#### **SOURCE: Primary Data**

Table 03 show profession wise classification of respondents. It is found that of the total of 100, 45 are students, 25 are self-employed, and 12 are housewife and 18 from business.

8.4: Do you agree that farmers direct sale are far better than sale through intermediaries/APMC markets?

Sr. No	Responses	No. of Respondents	% of Respondents
1.	Yes	68	68%
2.	No	32	32%
	Total	100	100%

#### **SOURCE:** Primary Data



From the above table and graph it can be interpreted that majority (68) of the respondents agree that farm fresh vegetables are better than APMC vegetables.

8.5: What category of farm fresh products do you buy the most?

Sr. No	Options	No. of Respondents	% of Respondents
1.	Green Vegetables	15	15%
2.	Other vegetables	38	38%
3.	Seasonal fruits	30	30%
4.	All of the above	17	17%
	Total	100	100%

#### **SOURCE: Primary Data**



From the above table and bar chart shows that majority of the customers are buy other vegetables and lesser number of green vegetables and average number of customer seasonal fruits.

8.6:Do you agree that after pandemics we have preference for online purchase of agricultural products ?

Sr. No	Responses	No. of Respondents	% of Respondents
1.	Agree	74	74%
2.	Disagree	26	26%
	Total	100	100%
	Totai	100	100 /0

SOURCE: Primary Data
From the above table it can be interpreted that majority respondents are agree (74%) that after pandemics customers have preference for online purchases of farm products.

# **8.7:** Post pandemic would you prefer to buy vegetables online or would like to visit store/ vendors in the market?

Sr. No	Responses	No. of Respondents	% of Respondents
1.	vendor	70	70%
2.	Online	30	30%
	Total	100	100%

SOURCE: Primary Data

Table 07 interpreted that 70% of the respondents are like to place order directly to vendors and remaining customers are preferring to buy online.

8.8: Do you find Farmers product pricing reasonable as compared to store products?

Sr. No	Responses	No. of Respondents	% of Respondents
1.	Yes	75	75%
2.	No	25	25%
	Total	100	100%

SOURCE: Primary Data

From the above table 75 respondents are agree that Farmers product are reasonable as compare to store vegetables products.

## 8.9: What do you like most about farmers online market?

## (5 being highest and 1 being lowest)

Price	5	4	3	2	1	Total
Quantity	11	14	<b>48</b>	20	7	100
Freshness	8	12	51	21	6	100

The above figure illustrates respondent's preference of farmers online market and out of the parameters price was given highest preference, while freshness was gives lowest.



8.10: According to you is online farmers market more convenient way to purchase vegetables.

Sr. No	Responses	No. of Respondents	% of Respondents				
1.	Yes	67	75%				
2.	No	33	25%				
	Total	100	100%				

SOURCE: Primary Data

Table 10 shows that 67 respondents are agree and 33 respondents are disagree that online farmers market is more convenient way of purchasing farm products.

**8.11:** Do you think post pandemic you will prefer to have proper organised online farmers market application?

Sr. No	Responses	No. of Respondents	% of Respondents
1.	Yes	78	75%

27

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ISSN 2322 - 0899

Volume 9, Issue 1 : January - March, 2021

2.	No	22	25%
	Total	100	100%

SOURCE: Primary Data

From the above table it can be interpreted that majority respondents are say yes that they will prefer proper organised farmers market application.

## **IX. FINDINGS**

# Based on analysis and interpretation of the information these are the following finding were grouped or merged.

- Most of the respondents are male.
- > Majority of the respondent comes under the age 18 29.
- Most of the respondents are student and employed people and very less respondent is housewife.
- > Almost all respondent are agree that online farmers market are better.
- The majority of the customers are buy vegetables & seasonal fruits through online farmers market during pandemics and lesser number of consumer buy green vegetables.
- Approximate 74% respondents are agree that after pandemics customers have preference for online farmers product.
- > 70% respondent are purchase vegetables through vendors/stores.
- More than 67% respondent thinks that online vegetable purchased directly from farmers are reasonably priced than vendors in the market.

## **IX. SUGGESTION**

- Farmers must try to reach out to more organised way of online direct farm to kitchen market.
- Use information technology and decision support software to help eliminate the length of the selling cycle for different farm products.
- ➢ Use e-commerce in direct marketing.
- > Try to strongly connect with consumers, households and local existence in the market.
- > Farmers should provide better facilities with guaranteed deliver time frame and exchange policy.

## **XI. CONCLUSION**

Through the analysis of the above factors it has been concluded that consumers prefer vendor shopping for their vegetables .However, given pandemic situations many millennials and households do realise the pros of online purchase of vegetables directly from farm to their kitchen. If we buy farm products directly from farmers better price, locally available fresh vegetables as well as seasonal fruits are available at reasonable cost to consumer. Also, it will save a lot of packaging and transportation cost on suppliers end. Hence, it is a win-win situation for both customers, households & farmers to develop the spree of online market which ahs been initiated at the covid times to take it further and develop a fully organised systematic market for consumer to increase their market share.

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## CHANGING CONSUMER'S BEHAVIOUR TOWARDS ONLINE SHOPPING - AN IMPACT OF COVID-19

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## ABSTRACT

The coronavirus (COVID-19) outburst is first and prime human tragedy across the globe, affecting the lives of millions of people. It has greatly impacted the global economy. As a result, supermarkets have experienced panic buying behaviours, empty store shelves, out of stocks, and there was an increase in online sales. Markets, producers, marketers, and businesses have had to adapt to consumer's changed buying behaviour in food consumption. The goal of this paper is to review the literature on the impact of COVID-19 on Changing consumer behaviour towards Online Shopping. There are still more uncertainties to predict how the sale for the future few months are impacting the worldwide community, both personally and professionally. Although a number of the businesses managed to figure through social commerce that's marketing by using e-commerce and social media. Forty-six percent of users admitted that social networks are important for information sharing and for creating more product choices. But results are indicative of the particular fact that online marketing and shopping will return to normal but the losses and downshift brought by this pandemic aren't ignorable. This study aims to measure and study these factors using structured questionnaire. The survey was collected from 110 Consumers. Information has been collected using convenience sampling method. The study mainly used frequency, mean, SD, t test, One way ANOVA using SPSS.

Keywords:- Consumer behaviour, E- commerce, COVID-19.

## **INTRODUCTION**

With the emergence of economic process and conversion, people, places, and merchandise have started approaching, and the prices were reasonable (Cetrez & Van Dam, 2018; Fouberg & Murphy, 2020). Life was in no time, as everything from bathroom tissue to plane ticket was only 1 click away. All the business plans, meetings, visits came to halt with the introduction of COVID-19 to the world. matters of the COVID-19 irruption, created people assume, dynamically and timely designation of however families have adjusted their spending and on-line searching, and what area unit the characteristics of the households who have responded quickly and strongly. News media stated that customers collapsed market drops to stock-pile for durable goods (Barr, 2020). This was much unplanned and sudden set back from businessperson to the human. Each sector and individual have been affected badly by this epidemic. on-line promoting and searching trends among customers also are squeezed by this unsure epidemic. If matters continue for an extended amount, it'll not be doable for the large giants like Myntra, Flipkart, Amazon etc. to retain their workforces as they need large turnover that have come back to an entire hault. As per this standing, Coronavirus disease (COVID-19) has infected millions of people globally (World Health Organization, 2020 Initially, this has jumped the number of users of on-line searching, globally, however due to delay in delivery, this has come back to halt after a week. So its better to stay home and do online shopping in this pandemic.

#### LITERATURE REVIEW

Disasters clearly influence consumption behaviours (Ballantine et al., 2014; Larson and Shin, 2018; Pantano et al., 2020; Sheu and Kuo, 2020).

Where consumption happens (Spatial aspects): Restrictions to transfer and/or enforced physical distancing constrains buying to areas near to the consumer's residence (enforced localisation) and/or telephone/online orders (Pantano et al., 2020), supply and delivery chains stay obtainable.

Laato et al. (2020a) finland COVID-19 855 Protection-motivation theory, self-determination theory Individuals' acceptance of state measures for curb the pandemic and perceived severity of the pandemic correlate with adoption of counseled health behaviors.

In the month of dec 2019, the new coronavirus SARS-CoV-2 inflicting the COVID-19 disease that involves delicate to severe symptoms surfaced in city of wuhan, China (Xu et al., 2020). though COVID-19 is AN acute resolved disease, it is deadly, with current death rate estimates starting from 0.4% to 3% of those infected (Xu et al., 2020). Compared to the previous coronavirus-caused disease SARS, COVID-19 incorporates a considerably larger reproductive range (Liu et al., 2020).

## **OBJECTIVE**

This study is conducted to analyse:

- Consumers' perception about online shopping across different age groups and gender with regard to awareness, knowledge level and attitude.
- Changing Consumer's Behaviour towards Online Shopping An Impact of COVID-19

## METHODOLOGY

In order to investigate the research objectives, both primary data and secondary have been collected and analysed. The first stage of the study includes an extensive search of articles, research papers, reports regarding Changing Consumer's Behaviour towards Online Shopping - An Impact of COVID-19. The analysis of the secondary data developed the understanding about the analysis and interpretation of primary data. The primary data has been collected from 110 respondents with the help of well structured, closed ended questionnaire. Data has been collected using convenience sampling method. The study mainly used frequency, mean, t test, Chi Square Test and One way ANOVA using SPSS.

## DATA ANALYSIS & INTERPRETATION

#### 1. Demographic Profile of the Respondents

Table 1 -Demographic Profile of Respondents

	Gender			Age		Education		
Variable	Number	Percent	Variable	Number	Percent	Variable	Number	Percent
Male	49	44.5	15-25	55	50.0	Undergradua	41	37.3
						te		
Female	61	55.5	26-35	41	37.3	Graduate	18	16.4
Total	110	100	36-50	14	12.7	Postgraduate	47	42.7
			Total	110	100.0	Doctorate	4	3.6
	Monthly	Income				Total	110	100.0
Vari	iable	Numbe	Percent			Emple	oyment Sta	itus
		r						
Less that	n 10000	45	40.9			Variable	Numbe	Percent
							r	
10000-	-25000	18	16.4			Service	56	50.9
25000-	-50000	27	24.5			Business 6 5.5		5.5
50000-	-75000	10	9.1			Student 47 42.7		42.7
More that	an 75000	10	9.1			Homemaker 1 .9		.9
To	tal	110	100.0			Total	110	100.0

2. Awareness & Perception about Online Shopping among Respondents

I. Level of Awareness about Online Shopping among Respondents

Null Hypothesis - Opinion regarding level of awareness towards Online Shopping is equal to average level

Table 2 – T test for specified value (Average = 3) of statement regarding level of awareness

Level of Awareness towards Online Shopping	Frequency	Percent	T Value	P Value
Very low	6	5.5%	1.773	0.79
Low	6	5.5%		
Average	70	63.6%		
High	23	20.9%		
Very high	5	4.5%		
Total	110	100%		
Mean	3.14			
SD	0.80′	7		

**Interpretation** – Since p value is more than 0.05, the null hypothesis is accepted at 5% level of significance with regard to the awareness about Online Shopping. Hence, the opinion regarding awareness about Online Shopping is equal to average level. Mean score is also supporting this analysis.

#### II. Perception regarding Online Shopping among Respondents

Table 2	Engeneration	toot of	noncontion	about	Onling	Cham	
Table 5 –	r requeric y	iest of	perception	about	Omme	Shop	ping

	Frequency	Percent
Huge	67	60.9
Discounts/Offers		
Detailed	1	0.9%
information about		
product		
Variety/range	28	25.5%
Convenient	4	3.6%
Compare various	10	9.1%
models/brands		
Total	110	100.0%

**Interpretation** – Table 3 clearly indicates that 61% respondents perceive that Online Shopping are giving huge discounts where as 25% respondents think that Online Shopping gives variety of products.

#### III. Do you think because of covid-19 you switched to online shopping

Table 4

Do you think because of covid-19 you switched to online		
shopping	Frequency	Percent
Yes	69	62.72%
No	16	14.55%
Maybe	25	22.73%

**Interpretation-** Table 4 clearly states 63% respondent has switched to online shopping because of covid -19, 14% had answered no they had not switched to online shopping because of covid-19 and 23% had answered maybe because of covid-19 they had switched to online shopping.

## IV. Preference of online app which respondent used majorly while shopping

Table 5

Buying Frequency					
	Freq	Juency	Percent		
Ajio		5	4.5		
Amazon		49	44.5		
Flipkart		30	27.3		
Myntra	5		4.5		
Others		21	19.1		
Total	1	110	100.0		
	Ν	Mean	SD		
Male	49	3.14	1.258		
Female	61	2.69	1.119		
Total	110	2.89	1.199		

**Interpretation** – Table no 5 indicates 45% of the respondent are using amazon app for online shopping and 27% respondent are using flipkart app for online shopping because its all-in-one application.

## V. Frequency of shopping online

Table 6 – Frequency test of shopping online

Product	Always	Sometimes	Don't
Category	Use	Use	use

Groceries	23.6%	63.6%	12.7%
Clothes	27.3%	50%	22.7%
Cosmetics &	21.8%	58.2%	20%
Personal care			
product			
Electrical	23.6%	42.7%	33.6%
appliances			
Stationary &	13.6%	37.3%	49.1%
bags			

**Interpretation** – Table 6 reveals that majority of the respondents i.e., 64%, 50%, 43% and 59% sometimes use online shopping for Groceries, clothes, cosmetics & personal care products and electrical appliances respectively. In case of Stationary & bags, majority respondents don't use.

#### VI. Relationship between perception regarding Online Shopping across demographic variables

Null Hypothesis – There is no significance difference in perception regarding Online Shopping across demographic variables

Fable 7 –	T Test &	ANOVA	for relations	hip between	perceptions	across	demographic	variable
							<u> </u>	

			Ger	nder	A	ge	Educa Oualif	ntional ication	Mor Inc	nthly ome
	Perceptions	Overall Mean	F Value	P Value	F Value	P Value	F Value	P Value	F Value	P Value
1	People who are important to me support shopping online during the current situation.	1.52	.287	.593	.723	.488	.704	.552	1.579	.185
2	During the current situation, I enjoy shopping online.	2.00	1.344	.249	4.696	.011	1.566	.202	.795	.531
3	I intend to shop online during the current situation.	2.57	.101	.751	1.412	.248	.582	.628	1.746	.145
4	The latest news about the economy encourages me to shop online.	1.61	1.157	.285	.960	.386	.522	.668	2.551	.043
5	Online shopping helps in tracking the delivery	2.66	.420	.518	2.343	.101	1.051	.373	.375	.826
6	Buying online is currently a useful way to shop.	2.35	.054	.816	1.100	.337	.282	.838	.993	.415

**Interpretation** – Table 7 presents the respondents' perception about the green products which were asked on Likert scale of 1-5 from strongly agree to strongly disagree. Further T-test and ANOVA were used to see the significance difference between perceptions and demographic variable at 5% level of significance.

- The table 7 shows that majority of the respondents believed that online shopping is supported by family and friends during current situation and they also enjoy shopping online as well as the latest news about the economy encourage them to shop online.
- The table 7 also indicates that respondents are neutral that they intend to shop online during the current situation.
- F test across different demographic variable revealed there is no significance difference in perception regarding online shopping except for demographic variable age and income regarding the latest news about the economy encourage them to shop online and the enjoy shopping online.

#### FINDINGS

- Majority of the respondents have average level of awareness regarding online shopping.
- 61% respondents perceive that Online Shopping are giving huge discounts where as 25% respondents think that Online Shopping gives variety of products.
- 63% respondent has switched to online shopping because of COVID-19, 14% had answered no they had not switched to online shopping because of covid-19 and 23% had answered maybe because of covid-19 they had switched to online shopping.

- Perception about online shopping across various demographic variables i.e. gender, age, educational qualification and monthly income is not significantly different. All the respondents have similar opinion regarding online shopping.
- Females have more buying intentions to buy products online as compare to the male respondents.
- Majority of the respondents believed that online shopping is supported by family and friends during current situation and they also enjoy shopping online as well as the latest news about the economy encourage them to shop online.
- Majority of the Respondents' sometimes use online shopping for Groceries, clothes, cosmetics & personal care products and electrical appliances respectively.
- 45% of the respondent are using amazon app for online shopping and 27% respondent are using flipkart app for online shopping because its all-in-one application.

## CONCLUSION

The lockdown and social distancing to combat the covid-19 virus has generated vital disruptions in the mind of consumers. All consumption is time bound and area bound. With time flexibility however location rigidity, customers have learned to improvise in artistic and innovative ways. The work-life boundaries are currently blurred as people work at home, study reception, and relax reception. Since the buyer is unable to go to the shop, the shop has got to come back to the buyer.

As consumers adapt to the house arrest for a prolonged period of time, they're probably to adopt newer technologies that facilitate work, study and consumption in a very a lot of convenient manner. grasp digital technology is probably going to switch existing habits. Finally, public policy also will impose new consumption habits particularly in places like airports, concerts, and public parks.

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# EVOLUTION OF TRADITIONAL WORKSPACES AND REMOTE TEAMS –DIGITAL TRANSFORMATION POST COVID.

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## ABSTRACT

The outbreak of COVID-19 around the globe forced businesses to innovate and change the work practices. Mandatory work from home has diminished the importance of office in short run. This sudden disruption is driving the digital transformation of the workforce and the evolution of the work environment at an unprecedented speed. Mass adoption of telecommuting has become a vital business change since the outbreak of the Covid-19. This paper explores the unprecedented impact of Covid-19 pandemic on sudden demand for work from home and the subsequent push for the digital transformation of the workforce. Telework is considered as an substitute way to work. The purpose of this research is to explore the relationships between theoretically grounded telework factors and various individual and organizational outcomes of telework

Keywords: - Work from home, virtual teams, covid.

## INTRODUCTION

Since December 2019, the world is witnessing the emergence of a new corona virus in Wuhan, China which has transformed into a pandemic in a very short span of time (Bavel, et al). In the short span of three months, the virus had infected to more than 52,066,14 people across the globe and caused over 337,736 deaths in 216 countries and territories (WHO). This contagious virus has broken the backbone of work places i.e. working together in the given official area. Hence, organisations became worried about maintaining the productivity of employee (Giurge and Bohns). Since the immense impact on human life The World Health Organization (WHO) declared Covid-19 as a global pandemic on 11th March, 2020 (Ducharme). Keeping in mind the critical public health situation around the world, India declared complete nation-wide lockdown starting from 25th March 2020 (United Nations). The lockdown has an evident impact on Indian economy(Sharma). Overnight the new normal working situation for all those employees became 'Work from Home'. Now a day's employers prefers to hire a resource who can work at home using his/her own computer and arrangements to save cost (Stewart).

## SOCIAL AND BEHAVIOURAL CHANGE

The health authority and home ministry have issued several precautionary guidelines to control the spread of virus. This led to the significant change in cultural, social and the day-to-day ways of living behaviours. Physical distancing sometimes called as 'Social distancing', wearing masks in public places, frequent hand washing, avoiding visit to any mass gathering places like theatres, school/colleges, workplace, mall, religious places became integral part of life (Bavel, et al).. The new ways of living has disrupted our work, home and travel schedules momentarily but with high impact. Suddenly many people started working from home and it is expected that working from home will become a norm even after Covid-19 pandemic. It is anticipated to witness significant changes in how people work, shop, live, play, communicate and work across every organisation (Merriman).

#### TECHNOLOGY AND DIGITAL INFRASTRUCTURE

Across the world, Covid-19 has posed critical work challenges for the businesses and governments. Fortunately, the new edge technology is playing a major role here in combating this crisis, up to some extent by using Work From Home mantra. The Covid-19 pandemic has overnight made huge impact on behavioural changes towards work from home and it was a welcome move keeping in mind the wellbeing of everyone. This change forced organisations to quickly invest in developing robust digital infrastructure (Sharma). For this, there are plenty of tools available to enable an IT professional work from home and makes life much easier. Starting from Google Docs, MS Teams, Hangouts, Zoom and Skype for regular interaction. The industries might be technically ready to counter the sudden change, but it is furthermore important to be emotionally and culturally ready for the new world. But here, the potential gains are counterbalanced by cultural and social challenges associated with the present inclination towards enforced teleworking on a massive scale (Chadha)

#### **OBJECTIVES**

The objectives of this study were:

1. To examine employee' attitudes towards work from home with regards to gender and age

2. To study relation between work from home and job productivity.

## HYPOTHESIS

- 1. There is no significant difference between gender and employee attitude towards work from home
- 2. There is no significant difference between age and employee attitude towards work from home
- 3. There is no relation between work from home and job productivity.

#### METHODOLOGY

- 1. Research Design: The purpose of this study is to explore the impact of Covid-19 on work culture and emerging trends of work from home. A quantitative study with the help of a descriptive survey method was employed among 269 full time working professionals in India during 2020-21. An exploratory simple random sampling is considered most appropriate, as the numbers and percentages produced by it would provide empirical evidence. The Google forms survey was conducted by contacting working professionals' .To gain a detailed insight, professionals were interviewed with the help of a semi-structured questionnaire. A positive item weighed score of 5 for Strongly Agree (SA), 4 for Agree (A), 3 for Neutral (N), 2 for Disagree (D) and 1 for Strongly Disagree (SD).
- 2. Data collection: The sample population size is 269 professionals.
- 3. Study Design: The present study has adopted a mixed approach. Primary data has been sourced via quantitative and qualitative survey. There is significant focus on existing review of literature, industry reports, research papers, journals, case studies and newspaper articles. Extensive data analysis techniques have been used with the help of Statistical Package for the Social Sciences (SPSS) software
- 4. Data Analysis: The data were analysed via SPSS. Descriptive statistics were used to describe and summarize the properties of the mass of data collected from the respondents. Parametric statistics like ANOVA and t-test were conducted to analyse any differences between students' attitudes and other dependent variables. A level of 0.05 or 0.01 was established prior for determining statistical significance. The reliability of questionnaire has been checked by using cronbach alpha, where all the variables are 0.07.
- H0 There is no significant difference between gender and employee' attitude towards work from home

#### H1- There is significant difference between gender and employee' attitude towards work from home

Factors	FEMALE		MALE		T value	P value
	MEAN	SD	MEAN	SD		
Employee' attitude	12.38	2.57	11.50	3.03	2.341	0.020*

An independent sample t-test was conducted to compare the mean scores and overall employee attitude wrt gender (male vs. female employee).Since P value is less than 0.05, the null hypothesis is rejected at 5% level of significance. Hence there is significant difference between male and female with regards to work from home

#### H0 - There is no significant difference between age and employee' attitude towards work from home

#### H1- There is significant difference between age and employee' attitude towards work from home.

	Below 25	26-35	36-45	Above 45	F VALUE	P VALUE
Employee atttiude	6.95	8.94	39.49	44.16	4.472	.000**

A one-way ANOVA between-groups analysis of variance was conducted to explore the impact of age wrt work from home . Since P value is less than 0.01, which rejects the null hypothesis, it can be thus stated that there is significant difference between age and Employee' attitude.

#### H0 - There is no significant relation between work from home and job productivity

#### H1- There is significant relation between work from home and job productivity

	Work from home	Job Productivity
Work from home	1	.858**
Job Productivity		1

There is positive correlation of 85.8 % between work from home and job productivity.

## DISCUSSION

Post-Covid: expected transformation in work culture The Coronavirus has and will have significant impact on our ways of living, work, studies, and ways of socialisation, communication and overall culture (Huen). It's the time to welcome the new cultural change and adapt our ways of living as we are standing ahead of a replacement work culture (Gautam). Mini home-office: During and post Covid-19 era working professionals have entered into a new world where mini home office is a norm in most of the houses and organisations. This will promote such work from home culture (Sharma). Cost cutting and productivity: According to the findings of Global Research firm Gartner, 74 per cent of the Chief Financial Officers plan to permanently move their human resources to remote working/work from home positions to save lots of cost post Covid-19 pandemic (Parungao). Office administration cost (electricity, phone, and infrastructure maintenance) is significantly reduced due to strong emphasis on work from home (Gautam). This could also reduce requirements to have physical office spaces too. It is estimated that up to a 3rd of employees may still work from home post Covid-19, because it will save cost, time and add efficiency (Sharma).

Professional and private life boundaries: As stated by Laura and Vanessa in a piece of writing published in Harvard Business Review magazine, the boundaries between personal and professional time is blurring in new and weird way during the sudden transition to figure from home. Days are blending with night and weekdays are mixed with weekend. There is little or no sense of your time off and holidays remain. Many research recommends drawing lines between professional and private lives permanently psychological state (Giurge and Bohns). Right skill sets are necessary to cope with the new environment of prolonged work from home. This will help to establish right balance between work and home life, client visits, creating a mini-home office away from distractions, technological support etc (Nickson and Siddons).

Increased women in workforce: Work from home policies will greatly benefit those women workers, who have babies at their homes. This initiative may bring lots of good women talent into the workforce (Gautam). In a survey conducted by job search portal Flexi Jobs in 2019, it had been found that around 31 per cent of girls employees took unwanted career break after having kids (Reynolds).

Talent access: Geographical barriers can be overcome and the best possible human resource can be recruited and engaged anywhere in the world. The productivity and experience will be the same irrespective of geographical distance (Sharma).

Online social networking: Socialisation at workplace are now becoming more virtual, this might be online chats, Yammer and other social networks (Parungao).

Roster on work from office: There are chances that an outsized number of employees might not want to figure from home due lack of productive environment reception. An article published within the ny Times suggests to adopt hybrid approach. Group A employees will come to office for two weeks and Group B employees will be working from office for the next two weeks to maintain the balance (Parungao)

#### CONCLUSION

As the ripple of COVID-19 carries around the globe, we are being forced to be innovative and change the way we work and live. Offices became smaller and work from home has suddenly become mandatory. This sudden need for work from house is driving the digital transformation of the workforce and therefore the evolution of the work environment at an unprecedented speed. Mass adoption of telecommuting has become an important business change since the outbreak of the virus. And this change is here to stay. In a matter of days, organizations are required to enhance their capabilities for long distance collaboration. Video conferencing, online purchasing, special deliveries, telemedicine, e-learning, electronic trading, online marketing, video streaming, and lots of other IT enabled processes have undergone virtual transformation, replacing traditional work practices. Digital transformation covers a good spectrum, including maximizing the utilization of recent information technology. Because of COVID-19, it's gained importance and been widely known and accepted by both employers and employees. The recent transformation of the workforce may be a crucial breakthrough for digital transformation. Organizations that have enhanced their IT capabilities and remotely engaged their employees are during a far better position to not only survive these unprecedented circumstances, but to beat the short and future challenges which will inevitably follow. Total Words: 903

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## INTRODUCING BLOCKCHAIN FOR HEALTHCARE TO COMBAT COVID-19 PANDEMIC

#### Priyanka R. Kadam

#### ABSTRACT

In this globally connected world in various sector every country get impacted by the devastation caused by the pandemic. Due to the outbreak of this COVID-19 has caused the world to face an existential health crisis. Many hospitals, clinics and all mentioned of facing an unprecedented workload in maintaining the health records of every patient and many more. This problem arise because of the centralised approach of maintaining the health records which lead to data breaches. But the world is moving towards progress, to achieve the desired progress, to tackle some of the challenges with the COVID-19 pandemic and here we are with the change brings up because of the COVID-19 that is blockchain Technology which serves as a best solution to address all this problems and fulfill the needs. This paper is concerned with the use of Blockchain in managing and sharing electronic health and medical records to allow patients, hospitals, clinics, and other medical stakeholder to share data amongst themselves. To track the moments of residents, the government of many states have adopted various novel technologies. Even Connecting billions of sensors and devices over the Internet, the so-called Internet of Things (IoT), has been used for outbreak control. However, these technologies also pose serious privacy risks and security concerns with regards to data transmission and storage. In this paper, it has been propose a blockchain-based system to provide the secure management. It focus on challenges to satisfy security, efficient, maintaining the health records and many more by introducing blockchain for healthcare in the fight against COVID-19 and can be incorporated in future days making it more potential throughout.

Keywords: COVID-19, Healthcare, Blockchain, ERH, Health Records, Security, Medical data.

## I. INTRODUCTION

Before going into the main purpose of the blockchain for healthcare; let's look into the technology of the blockchain. Blockchain is the prime example of disruptive technology in multiple levels. This technology may be a distributed ledger that's essentially a peer-to-peer network that prioritizes decentralization, immutability, consensus, validation and verification, transparency and better level of security. This concept was originally introduced by Satoshi Nakamoto in a white paper in 2008[1]. In which it has been propose a solution to the double-spending problem using a peer-to-peer network.



Figure 1. Blockchain - Promising technology

In this pandemic, blockchain is emerging together of the foremost promising technology that captures attentions of several academic researches and industry. It is a promising technology to manage the transactions has been gaining popularity in the domain of healthcare. A problem facing healthcare record systems throughout the planet is the way to share the medical data with more stakeholders for various purposes without sacrificing data privacy and integrity. Blockchain technology has the potential of securely, privately, and comprehensively manage patient health records. In this paper here it has been discuss about the latest status of blockchain technology and how it could solve the current issues in healthcare systems that are beneficial to healthcare applications by introducing the blockchain technology from the multiple perspectives around healthcare records including privacy, security, control and storage.

As Patient's health record is an important part of information for the process of medical treatment of patients including personal data, personal medical profile, allergies, etc. Several hospitals adopt information communication and technology to manage patient medical records which are called Electronic Health Record System. These systems were used to store clinical notes and laboratory results in its multiple components [2]. They were proposed to enhance the safety aspect of the patients by preventing errors and increasing information

access.Moreover, many EHR systems are not designed to fulfill the needs and requirements of the patients and face the issues related to inefficiency and poor adaptation of these systems [3].

These problems make it reasonable to seek out a platform that might be helpful in transforming healthcare sector to be patient-centered.i.e.Blockchain..This paper proposes a framework that makes such a decentralized platform that would store patient's medical records and give access of those records to providers or concerned individuals.i.e.patient.

Today the best problem in healthcare sector defined by the critics is information asymmetry which refers to at least one party having better access to information than the opposite party. These benefits make it an inexpensive option to store patient's medical records there on, A number of researchers have also identified that using blockchain technology in healthcare would be a feasible solution. Data breaches in healthcare sector also involves the necessity of a far better platform. A blockchain has certain benefits like security, anonymity, and integrity of knowledge with no third party intervention. These benefits make it a reasonable choice to store patient's medical records on it, because the innovation of technology within the healthcare industry has made the safety of patient's medical data a top priority. A number of researchers have also identified that using blockchain technology in healthcare would be a feasible solution [4] [5][6].

## II. BACKGROUND

The world was invaded by the COVID-19 pandemic, which shook the whole world and only technology has made it possible to preserve the minimum subsistence of many areas, including the healthcare field. In developing countries, many have applied technology through centralized health systems. This paper examines the benefits and opportunities of applying blockchain in healthcare, specifically in developing countries, focusing on security privacy issues. According to the records of The World Health Organization (WHO) has recommended that countries worldwide draw up a "Pandemic Plan", due to the increased possibility of pandemic risk. A Pandemic Plan is typically developed according to the pandemic phases declared by the WHO and aims to achieve clear results in managing pandemics from the early stages[7].

The amount of laboratory-confirmed coronavirus cases has been increasing at an alarming rate throughout the planet, with reportedly quite 3 million confirmed cases as of 30 April 2020. The COVID-19 outbreak is demonstrating the vulnerability of worldwide people towards novel and highly contagious biological agents. During this landscape, several countries have considered the reinforcement of strategies of "risk management" as a priority. The most concern of timely risk management is said to data sharing among clinicians and mass media, as in most cases this may create panic in the general population. Recently, blockchain technology has been increasingly applied to healthcare, to strengthen the operative protocols and to make the right basis for an efficient and effective evidence-based decisional process.

The study of this pandemic revealed that there's lack of data breach occurring and increases risk of privacy and security. Accordingly, blockchain's potential in healthcare would require organizations to deal with significant challenges. Since its greatest benefits revolve around streamlining, the coordination among multiple providers, and patients, healthcare organizations will got to measure and study the present situation of EHRs .This what research tries to deal with.

The study questions that :

- 1. Analysis of the Covid-19 cases in healthcare
- 2. The way to make data compatible considering data model could potentially change over time?
- 3. Outbreak of the Covid-19 affecting the info records
- 4. Data loss from the systems

With all above issues considered, blockchain could potentially be one among the foremost promising solutions to them. Blockchain plays a strategic role in safely sharing data between groups of persons, independently of the reliability and the cross-checking of those groups.By 2018, several governments have acknowledged the likelihood of adapting it in their countries.Ever since its emergence, it has shown tremendous potential as a viable alternative across multiple domains like Finance, IoT, Supply Chain etc. Adequate containment measures, proportionate to the evolution of the epidemiological situation, supported the pandemic plans involved consistent with WHO directives, have prevented unpredictable health risk and have coordinated national response to the medical emergency [8]. Strategic data tells about the monotonic % of the COVID-19 cases.

To monitor this problem, blockchain study has been taken into the consideration for the healthcare to combat COVID-19 pandemic.

## **III. METHODOLOGY**

A. About Blockchain and it's concepts -

Bitcoin travel by Blockchain technology, first came into existence within the year 2008, and over subsequent few years steadily gained attention, from getting used to get two pizzas, to exceeding the market cap for \$1 billion by 2013 where Blockchain may be distributed ledger technology that enables users to share trusted and verified information during a decentralized manner.



Figure 2. – Working of Blockchain

Some basic concepts of blockchain technology can be understood in the following descriptions -

## i.. Block -

Blockchain are formed together by variety of blocks connected together during a peer-to-peer network thus making a decentralized application. The header of those blocks contains hashes of previous blocks in them. A block contains three things in it which are data, hash of current block and hash of previous block. The info could be anything as it depends on the type of blockchain. As just in case of bitcoin, the info consists of coins that are literally electronic cash [1].

#### ii. Consensus Algorithm -

The basic working of this algorithm is that there are number of nodes or participants on a blockchain network so when a transaction is requested to be added on the network by any participating node it needs to be calculated. This process is named mining and therefore the nodes that are performing these calculations are miners [9].

#### iii. Challenges faced by blockchain technology -

*Scalability and storage capacity:* Storage of data on the blockchain causes two main problems, i.e., confidentiality and scalability. The data on the blockchain is visible to everyone that is present on the chain this makes the data vulnerable which is not a desired outcome for a decentralized platform.

The data stored on the blockchain would contain patient medical history, records, lab results, X-rays reports, MRI results and much of other reports, all of this voluminous data is to be stored on the blockchain that might highly affect the storage capacity of blockchain [10].

Table 1 presents the most foremost opportunities and their challenges -

## TABLE 1

#### OPPURTUNITIES AND CHALLENGES OF BLOCKCHAIN

Opportunities of blockchain	Challenges of blockchain
Transparent	Scalability
Reduced Transaction time	Interoperability
Secure	Storage
Cost Efficient	Social Acceptance
Irreversible Transaction	Requires Standardization

The rest of the paper discusses a number of the studies made to integrate blockchain technology in handling medical and patient data in the most scalable, affordable and secure manner. The challenges and limitations along side the longer term of blockchain of blockchain as a prominent technology especially for the healthcare industry is studied during this pandemic.

## *B. BlockChain within the COVID-19 Pandemic* - Why BlockChain ?

It is another question that has got to be addressed first before going into the detail. Obviously, how blockchain is beneficial has been mentioned previously already but still one question comes up why only blockchain? How it's helpful within the COVID-19 Pandemic ? Yes, that due to tons of advantage over existing technologies. Here are some advantages of blockchain over existing systems of varied domains. Blockchain is:

- Decentralized and Distributed
- Secure and Faster
- Transparent and Immutable

As a foundational technology it promises to supply new solutions to old problems, blockchain technology is increasingly being applied in innovative ways in which are relevant to the challenges created by the COVID-19 pandemic.

The failure of existing systems to supply reliable and effective solutions to problems created by this global crisis has highlighted the potential of blockchain applications even more greatly [11]. The crisis has created a singular opportunity to check and develop blockchain-based solutions. It's difficult for health care organizations to implement blockchain technology and adopt its more open, transparent, patient-focused, and robust systems of transaction and information management without more evidence of its effectiveness; however, it's worth testing this technology to develop systems with levels of robustness that current information systems haven't been ready to achieve. Fortunately, there are already some use cases of blockchain technology which will significantly contribute more effectively to the fight against the COVID-19 pandemic.Here it's been discuss about two key examples or cases that relate to medical aid directly and where blockchain technology is currently being applied but should be adopted even more widely if proven effective.

## i. Supply Chains and Blockchain -

During the COVID-19 crisis, major supply chain failures are observed not just for house items like toilet tissue and hand-washing soaps [12] but, more importantly, for PPE and lifesaving ventilators in hospitals and clinics [13]. Blockchain technology provides immutable and distributed ledgers with auditable records, which are ideal for tracking each asset during a supply chain because every actor within the supply chain shares an equivalent information [14]. It's therefore easy to calculate the inventory and therefore the exact stage where assets within the chain; instant reconciliation can then be achieved with none additional audit or negotiation among the varied suppliers and end users. A joint Walmart-IBM project demonstrated how tracking sources of contamination in green vegetables, a task that previously took months, might be achieved within seconds using blockchain [15,16]. A number of the teachings learned from that system are now being applied at the US Food and Drug Agency for counterfeit pharmaceuticals [17] also designed Rapid Supplier hook up with medical supply chains during the COVID-19 pandemic and offered it to health systems and government agencies to assist find vendors for medical supplies and PPE [18]. An example of such a system is IBM's Trust Your Supplier solution, in which blockchain enables trusted sources of supplier information and digital identity management to scale back the danger of counterfeiting while facilitating onboarding of suppliers.

As shown in Figure 1, Trust Your Supplier is a permissioned network that limits access to the information on the blockchain, Cryptographic security ensures confidentiality of data on the chain, and the immutability of records guarantees.



Figure 3. Schematic of IBM Rapid Supplier Connect [19].

#### ii. Contact Tracing and Blockchain -

For a highly communicable disease such as COVID-19, the power to promptly trace individuals who are exposed to an infected person may be beneficial public health strategy which will limit the continuing spread of the infection. Because the number of COVID-19 cases continues to rise and surges are occurring worldwide, there is increased realization that social distancing and lockdown measures cannot be indefinitely extended. In many cases, compliance with lockdowns has been difficult to enforce, and coercion and significant resource allocation are needed to enforce it [20]. Scenes of police, army, and other government agencies roaming the streets to enforce closure of companies and lockdowns are ubiquitous on the web, with many samples of use of violence and threats against citizens [21].

Blockchain technologies that enable individuals to share their personal information during a secure manner with public health agencies without revealing their identity or contributing that information to a centralized government or corporate database may help identify people that inherit contact with a patient who has tested positive for COVID-19. This will achieved through public health agencies or through peer-to-peer notifications, where only the positive status can be shared without sharing other medical or personal data [22]. The potential to trace individuals who are positive for COVID-19 and to see their seropositive status for infection may be used as a key tool to enable skilled responsible reopening of the economy without causing a surge in cases.

As we develop vaccinations or develop herd immunity for the infection, blockchain technology can also be won't to issue health certifications which will be verified easily by employers public health agencies to validate the status of a private.

C. Blockchain in Healthcare Management -

Let's see more in detail how blockchain has been introduced in the field of Healthcare -

One of the fields where blockchain is considered to have great potential is healthcare. Healthcare industry is one of the most data intensive sectors that is confidential and is large in size, requiring tight security lest the data is leaked, corrupted or accessed by unauthorized personnel. This problem among others including, use of third-party services due to high cost of maintaining data leading to possible security breaches. Recently, the government's think tank NitiAayog launched a location-tracking app called Aarogya Setu, which has been developed through a public-private partnership (PPP) under the guidance of national informatics centre. The self-assessment app uses Bluetooth technology, algorithms and artificial intelligence where it helps people avoid the risk of coming into contact with infected patients and alert them to stay indoors.



Figure 4. - Uses of Aarogya Setu App

Aarogya Setu claims to follow a privacy-first approach, personal data collected by the app is encrypted using state-of-the-art technology and stays secure on phone until it is needed for facilitating medical intervention. Today, governments across the world are deploying such phone tracking, location-based monitoring applications; authorities plan quarantining and restrict the gathering of large groups of people. Therefore, the use of privacy-proof blockchain solution, combined with existing technologies can address privacy issues and preserve the data privacy needs of Covid-19 patients. Introducing Blockchain in healthcare play an important role in privacy issues associated with patient tracking to combat COVID -19 pandemic.

## **IV. RESULTS**

The [Table 3] lists the functions of the selected COVID-19 apps and maps these against the WHO guideline recommendations on digital health interventions for health systems strengthening. Dissemination of untargeted COVID-related information on preventative strategies was the function of 27 (54%) apps. Nineteen (38%) apps were developed to monitor the movements of quarantined individuals. On-demand information services through chatbots or telephonic helplines were available only in 19 (38%) apps. Fifteen apps (30%) provided users with a

self-risk assessment function based on a set of screening questions related to their symptoms, occupations, travel history, and contact history. Information on the availability of COVID-19 testing facilities was available in six (12%) apps. Four (8%) apps had a provision for booking teleconsultation or testing appointments. The availability of an electronic pass for movement during the lockdown was the only health workforce-specific function available in four (8%) apps. In terms of the data for health managers and policy decisions, nine (18%) apps provide aggregation and visualization of the State governments' data related to confirmed cases and deaths. Eight (16%) apps had a contact tracing.

## TABLE 3

Functionalities of the coronavirus disease-19 apps and their comparison with World Health Organization (WHO) recommendation for digital health interventions (n=50)

WHO recommendations17	COVID-19 related functions	n (%)
Clients		
Targeted client communication	Availability of testing services and protective equipment for high-risk population	6 (12.0)
Untargeted chient communication	Preventive measures and demystification	27 (54.0)
Client to client communication	Community forums for patients and family members	0 (0.0)
Personal health tracking	Symptom tracker	6 (12.0)
	Self-risk assessment	15 (30.0)
	Quarantine monitoring	19 (38.0)
Citizen based reporting	User feedback on services	2 (4.0)
On-demand information services to clients	Information provision through chatbots or helpline	19 (38.0)
Client financial transactions	Manage out of pocket payment by service users	0 (0.0)
Health workers		
Client identification and registration	Enrol user for health services/clinical care	0 (0.0)
Client health records	Longitudinal tracking of user's health status	0 (0.0)
Health worker decision support	Job-aid for frontline health workers	0 (0.0)
Telemedicine	Teleconsultation and testing appointments	4 (8.0)
Health worker communication	Provider to provider communication	1(2.0)
Referral coordination	Manage referrals between points of service within the health sector	0 (0.0)
Health worker activity planning and scheduling	Electronic pass for the movement of the health workers during the lockdown	4 (8.0)
Health worker training	Train new and existing healthcare staff	0 (0.0)
Prescription and medication management		
Laboratory and diagnostics imaging management	Testing for COVID-19	0 (0.0)
Health system managers		
Human resource management	Human resource monitoring for hospital staff	0 (0.0)
	Participation/volunteer recruitment	1(2.0)
Supply chain management	Monitor stock levels of health commodities	0 (0.0)
Public health event notification	Notification of confirmed cases	14 (28.0)
	Contact tracing	8 (16.0)
	Hotspot identification	8 (16.0)
Civil registration and vital statistic	Notification of deaths	13 (26.0)
Health financing	Accepting donations from contributors	4 (8.0)
Equipment and asset management	Monitor status of beds and ventilators	0(0.0)
Facility management	Priority checklists for facility management	0 (0.0)
Data services		
Data collection, management, and use	Data storage, aggregation and visualization	9 (18.0)
	Prediction on future trends of disease	0 (0.0)
Data coding		
Location mapping	Map location of health facilities	9 (18.0)
	Location data recording or Bluetooth handshakes	19 (38.0)
Data exchange and interoperability	Data exchange across systems	

By resulting data it comes to know the developing apps during this COVID-19 pandemic and also for this blockchain has been introduced in contributions for Blockchain for healthcare.

## V. CONCLUSIONS

In this paper it has been discussed about blockchain technology for healthcare sector and short innovation about electronic health records to combat COVID-19 later more about EHR will be introduce in PAPER 2.Atlast it concludes that the blockchain is increasingly applied to healthcare to create the proper basis for an efficient and effective evidence-based decisional process. Based on this, we can say that blockchain plays a strategic role in healthcare for COVID19-safe clinical practice. In fact, due to the exponential growth of this technology, blockchain has been applied in several use cases with the aim of enhancing the automation of medical services. It also indicates that the issue of maintaining the privacy and security of patient information. Furthermore, blockchain technology offers promising features in the healthcare sector which help during this pandemic crisis by providing improved solutions, outbreak tracking, user privacy protection, the performance of the medical supply chain and safe day-to-day operations.

In the future, blockchain technology with other emerging technologies, such as artificial intelligence (AI), big data, and Cloud computing, can provide a very effective way to overcome such challenges. It will be go on developing in the future direction of many works that leads severe risks in Healthcare sector later on and come up with solutions accordingly to improve it..

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# OPPORTUNITY DURING COVID 19 IN HEALTH AND SAFETY PRODUCTS (MASKS, SANITIZER, GLOVES ETC.)

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## I. ABSTRACT

As economies of the world are suffering from the COVID -19, businesses are experiencing losses, workers are without jobs, many problems and challenges are face in real lifestyle. However, health and safety products companies taking center stage in the Covid-19. Many industries are there in the society had in decline stage, but health care industries get positive opportunities to boost up their industry. In this pandemic situation health care industries are making more earning as compare to other industries. The pharmaceutical and healthcare operations persons need to take care to protect personnel. Every person used masks, sanitizer, Gloves etc. in the workplace and shopping center. So, demand of this product its rises and ultimately, it is a positive opportunity for the manufacturing this type of product industries. If we see that before 2019 hardly person can use this product but now its necessity products for all the citizens. Stepping out without mask nowadays is risky and not a good decision. The COVID-19 virus has forced everyone to focus on hygiene and health safety, now more than ever. It has become the highest priority for people. Health and safety merchandise are, therefore, now in huge demand. In fact, more than half-million customers viewed masks and gloves this year, with quiet and more than 9 lakh units already sold.

The constant need to disinfect hands or o Health & safety merchandise that have seen a spike in demand and can be relevant within the time to return include:

- Masks, Gloves, Sanitizers
- Wipes, Disinfectants
- Infrared thermometers
- Medical equipment
- Ayurveda and Vitamins, Immunity boosters
- Home gym & other fitness equipment

Keywords = Masks, Sanitizer, Gloves, Health and safety products, Hygiene and health safety. ther objects has increased the sale of sanitize.

## **II. INTRODUCTION**

The COVID-19 pandemic is that the result international health crisis that the full world is presently facing. The virus has effect whole world and each single day covid cases has increase and government additionally worked to block the cases. the world response to the evolution COVID-19 crisis saw countries provide efforts to extending throughout the state or partial lockdowns, the announcement of input packages and relief measures to tackle the tough economic impact of the pandemic. The virus additionally contains a sturdy emotional of all the world production capability of PPE, masks, sanitizers that is that the most important product to guard the front-line doctors and different responders. stormy demand for PPE kits together with interrupt international offer chain amid the Covid-19 pandemic was golf stroke lives in danger.

India raced and implementing a nationwide internment with the aim of become the curve and victimisation the time to arrange resource responses, adequately. The Prime Minister assured the country that they're reserve of PPE kits, food, medicines and different essential product.

India realised the important role of PPE in combating this pandemic as early as March, whereby the Ministry of Textiles stepped to guide the assessment of the supply of all protecting wears for our frontline doctors.

What followed this, may be a outstanding journey of collaboration between governments at the central and state levels, industries and employees to revamp existing production lines to manufacture a very unknown product, from scratch.

Health care industry in India includes of hospitals, medical devices, medical trials, subcontracting, telemedicine, medical travel, health insurance and medical kit. The industry is growing at a incredible pace owing to its establishment coverage, services and increasing expenditure by public as well as private players.

## **III. LITERATURE REVIEW**

3.1: According to Carlsson-Szlezak et al. (2020a) and Carlsson-Szlezak et al.(2020b), there are 3 main transmission channels. The primary is the direct impact of covid which is related to the reduced consumption of productions. Prolonged lengths of the pandemic and the social distancing might reduce the consumer confidence by keeping consumers at home, wary of discretionary spending and pessimistic about the long-term economic prospects.

3.2: According to Lu et al. (2020), social distancing or lockdown measures are likely to affect psychological well-being through lack of access to essential supplies, discrimination or exclusion by neighbours or other groups, financial loss, boredom, and frustration due to lack of information. They confirm that maintaining a positive perspective (in terms of severity perception, the credibility of real-time updates, and confidence in social distancing measures) can help reduce depression.

3.3: Fetzer et al. (2020) notice that there has been broad public support for COVID-19 containment measures. However, some of the respondents believe that the general public fail to adhere to health measures, and that the governmental response has been insufficient. These respondents have important correlation with lower mental health. If governments are seen to take decisive actions, then the respondents altered their perception about governments and other citizens, which in turn improved mental health.

## **IV. OBJECTIVES OF STUDY**

4.1: To understand the impact of safety and health products

4.2: To study opportunity of safety and heathy product during COVID -19.

## V. RESEARCH METHODOLOGY

## **5.1: RESEARCH METHOD**

- "Descriptive Research" has been adopted for this research.
- The research is based on primary and secondary data.
- The Structured Questionnaire was used to collect primary data.
- The secondary data is collected from bulletin, journals, reports and various interne websites.
- Sample size of this study is 120 peoples across the Navi Mumbai.

#### VI. HYPOTHESISNOF THE STUDY

6.1: Ho: COVID -19 has no impact on safety and health products

- H1: COVID -19 has impact on safety and health products
- 6.2: Ho: Safety and health product has no opportunity during COVID
- H1: Safety and health product have an opportunity during COVID.

#### **VII. LIMITATION OF THE STUDY**

- 3. The research location was limited to Mumbai and Navi Mumbai area. Thus, the result is not applicable to the whole India.
- 4. The respondent might be biased and may not answer all the questions truthfully. Their misconception forms a limitation to the study.

#### VIII.DATA ANALYSIS AND INTERPRETATIONS

Demographic analysis is done to ensure that data collected is reliable and helpful to validate the results. Data was collected related to the variable like age, gender, occupation which is important for the analysis of research study undertaken.

#### ✤ Demographic analysis and interpretation

## 8.1: Gender wise classification

Gender	No. of Respondents	% of respondents
Male	50	41.67%
Female	70	58.33%
Total	120	100%

SOURCE: Primary Data

Table 01 shows the gender wise classification of respondents. It is found that **58.33%** of the respondents are females and **41.67%** of the respondents are males.

#### 8.2: Age wise classification of respondents

Sr. No	Age Group	No. of Respondents	% of Respondents
1.	18 to 25	80	66.67%
2.	25 to 35	18	15%
3.	35 to 45	12	10%
4.	Above 45	10	8.33%
	Total	120	100%

SOURCE: Primary Data

Table 02 shows age wise classification of respondents. It is interpreted that majority of the respondents are in the 18-25 years of age group that is 66.67 %.

#### 8.3: Profession wise classification

Profession	No of respondent	% of respondents
Student	85	70.83%
Self- employed	25	20.83%
Housewife	5	4.17%
Business	5	4.17%
Total	120	100%

#### SOURCE: Primary Data

Table 03 show profession wise classification of respondents. It is found that of the total of 120, 85 are students, 25 are self-employed, and 5 are housewife and 5 from business.

8.4: What kind of responsibility should be taken by the society during COVID ?

Sr. No	Responses	No. of Respondents	% of Respondents
1.	Use safety product	25	20.83%
2.	Stop outing	12	10%
3.	Stay at home	15	12.5%
4.	All of the above	68	56.67%
	Total	120	100%

SOURCE: Primary Data



From the above table and graph it can be interpreted that majority (68) of the respondent are agree that used all the safety product during covid.

8.5: Have you ever got a rash or other reaction after using hand sanitizers ?

Sr. No	Options	No. of Respondents	% of Respondents
1.	Strongly agree	10	8.33%
2.	Agree	12	10%
3.	Neutral	20	16.67%
4.	Disagree	66	55%
5.	Strongly disagree	12	10%
	Total	120	100%
		SOURCE: Primary Data	



From the above table and bar chart shows that majority of the customers are disagree with the statement.

#### 8.6: Do you think that masks and sanitizers are effective against COVID 19?

Sr. No	Responses	No. of Respondents	% of Respondents
1.	Agree	66	55%
2.	Disagree	8	6.67%
3.	Neutral	46	38.33%
	Total	120	100%

SOURCE: Primary Data

From the above table it can be interpreted that majority respondents are agree (55%) that customers thinks that masks and sanitizers are protect against COVID-19.

#### 8.7: What type of sanitizers do you prefer?

Sr.	Responses	No. of	% of
No		Respondents	Respondents
1.	Dettol	66	55%
2.	Lifebuoy	28	23.33%
3.	Savlon	14	11.67%
4.	Sterillium	12	10%
	Total	120	100%

SOURCE: Primary Data

Table 07 interpreted that 55% of the respondents are like to use Dettol sanitizers and very less number of users can use sterillium sanitizers.

#### 8.8: Do you agree that by wearing mask we can avoid close contact with other person?

Sr.	Responses	No. of	% of		
No		Respondents	Respondents		
1.	Yes	92	76.67%		
2.	No	28	23.33%		
	Total	120	100%		

SOURCE: Primary Data

From the above table 92 respondents are agree that by wearing mask we can avoid close contact with other person.

#### 8.9: What do you like most about lifebuoy sanitizers?

#### (5 being highest and 1 being lowest)

	5	4	3	2	1	Total
Price	45	15	20	15	25	120
Quality	13	16	52	29	10	120
Durability	8	12	65	21	12	120

ISSN 2322 - 0899

The above figure illustrates respondent's preference of lifebuoy products and out of the parameters price was given highest preference, while durability was gives lowest.



## 8.10: Do you think that the safety products have boost up the market size during COVID ?

Sr. No	Responses	No. of Respondents	% of Respondents
1.	Agree	84	70%
2.	Disagree	36	30%
	Total	120	100%

SOURCE: Primary Data

Table 10 shows that 84 respondents are agree and 36 respondents are disagree that safety products have boost up the market size.

# **8.11:** Do you think the health products brand have done enough to launch new products to keep immunity stronger during the COVID 19 pandemic?

Sr.	Responses	No. of	% of		
No		Respondents	Respondents		
1.	Yes	98	81.67%		
2.	no	22	18.33%		
	Total	120	100%		

SOURCE: Primary Data

From the above table it can be interpreted that majority respondents are say yes that launch a new brand product to keep immunity stronger due to this pandemic situation.

#### 8.12 If you use reusable clothing how often do you keep it clean

Sr.	Responses	No. of	% of
No		Respondents	Respondents
1.	Once in a week	10	8.33%
2.	After every use	90	75%
3.	Multiple time in a week	20	16.67%
4.	Once in a month	0	0
	Total	120	100%

SOURCE: Primary Data

From the above table 90 respondents are agree that clean clothing after every use and no one can choose that clean clothing once in a month during the COVID 19.

**8.13** Do you think the efforts taken by the company's manufacturing the health and safety has had its impact on the general public at large ?

Sr.	Responses	No. of	% of
No		Respondents	Respondents
1.	Yes, I think	82	68.33%
2.	No	4	3.33%
3.	May be	28	23.33%
4.	Don't	6	5%
	KIIOW		
	Total	120	100%

SOURCE: Primary Data

Table 13 show that 68.33% of respondents says yes and a smaller number of respondents says no that companies manufacturing the health and safety has had its impact on the general public at large.



#### **IX. FINDINGS**

Based on analysis and interpretation of the information these are the following finding were classified:

- Out of total sampling, majority of respondents are female.
- Majority of the respondent comes under the age of 18 to 25 group.
- Most of the respondents are students and used individuals and extremely less respondent is household.
- 55 % respondents are disagree with the statement that got a rashes from the sanitizers and 8.33% are strongly agree.
- 66 respondents are agree that mask and sanitizers effects against covid and 8 are disagree.
- Out of 120 respondents 55 % of the people used Dettol sanitizers, 23.33 % used lifebuoy and least of the respondent used sterillium.
- Majority of the individuals agree that safety product maximize the market level throughout covid.
- 90 respondents are says that clean the cloth after every use and no one can say that clean once in a month.

#### **IX. SUGGESTION**

- Wash your hands throughout with soap and water for a minimum of twenty seconds.
- Use an alcohol-based hand rub, immediately afterwards.
- Avoid touching your eyes, nose, and mouth with unwashed hands.
- Eat a healthy and nutritious diet, which helps your immune system to function properly.
- Maintain physical distance to other people.
- Wear disposable gloves and mask.
- Do some exercise and meditation.
- Avoid close contact with someone who is suffering from cough, fever and cold.

- Stay home as much as possible and avoid non-essential travelling and outing.
- Practice social distancing by keeping at least 6 feet.

## XI. CONCLUSION

Through the analysis of the higher than factors, it's been complete that we've got to try and do our protection. This pandemic scenario earning power capability of the worker goes down. Restaurants, bars, moving-picture show theatres, and gymnasiums in many major cities unit movement down. meanwhile many work employees face new challenges of operational remotely full time. They bought out medical provides like hand sanitizer and masks and unit requirements like bathroom tissue and bread.

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## CONVERT ECONOMIC THREAT TO AN OPPORTUNITY IN COVID-19 ERA

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#### ABSTRACT

The rising of COVID-19 cases worldwide is unprecedented. the global economy is expected to shrink sharply by 3 percent in 2020. This was no longer just a virus but has turned into an economic war, sparking a debate as to what will be the future and how will the consumer react. Demand had declined due to lack of purchasing power and supply of services was hit as production was hampered.

Many countries overdependent on trade are already facing the negative impact of globalization and thus will like to switch import with domestic production. Every country wants to protect its own citizens and economies, but this can have a huge impact on developing nation

Though the recovery of the underlying economy will be slow, but now most sector have accepted this to be the new normal. Some sector has converted the threat in to an opportunity and set to see immense growth in the prost covid era.

## **INTRODUCTION**

Covid-19 has not only had an impact on the health of people at large, it has also done economic damage that it has rendered and will continue to render. It may be more damaging than the disease itself. During the this pandemic, business continue to be impacted significantly, liquidity remains tight and so the scale of operations will be low. New strategic al or business partnerships are having slow growth rate during the period. Covid -19 has impacted the Indian economy to a great extent. The Government is focusing on meeting hyper demand for essential items like healthcare infrastructure and facilities while non-essential items has sown a steep decline. The restrictions on movement imposed by the Government for the purpose of containing the virus have forced many sectors to stop their business for uncertain period

#### **OBJECTIVES OF STUDY**

- > To study the economic opportunities from some sector in the economy during covid-19 period
- > To study the sales and revenue growth of some company product due to COVID-19.
- To bring out the comparison of revenue of these company product sale during covid-19 and their previous revenue

#### **RESEARCH METHODOLOGY**

This research paper is based on information collected from secondary sources from various published data like internet, newspaper, magazine, company website and company report etc.

As per current scenario, China is the major hub of manufacturing and amid the silent retaliation of various countries against china, there was a golden opportunity for India to increase the manufacturing capacity harnessing campaigns like 'Make in India' and 'Vocal for local' at the global level. India is blessed with immense resources and manpower that need to be channelized in the right direction with considering the prevailing global situation.

Even though the recovery of the underlying economy will be sluggish, but later most sector have accepted this to be the new normal. while the overall economy has taken a hit because of the lockdown, some sector has converted this threat in to an opportunity and are set to see immense growth in the post -COVID era.

ISSN 2322 - 0899



in four years (Number of subscribers, in millions)



The world has seen something like never before. The Covid-19 crisis has ultimately led to an emergence of new FMCG products, a change in consumer behavior and a shift in the market's focus on health protection and hygiene. In order to get the business and economy back on track, the companies were moving forward by taking the situation of the pandemic as an opportunity. Some was coming up with an innovative idea and resultantly getting the first mover advantage, whose impact will entertain a long-lasting impact on the market.

**Digital and internet economy:** During the course of the pandemic, people have started using digital medium for work commitments, education, and entertainment. Online platforms for work meetings have shown a massive rise in popularity. Various meeting and video calling applications have come up with innovative features making it conductive for professionals to work from home. This has also compelled schools and universities to start online education and assessments. The lockdown has restricted events which require a massive gathering of people like sports, music festivals, theatre, movies etc.. Due COVID -19 pandemic the online platforms for digital content has become a huge hit with many movies and shows released on digital platform release instead of theatrical release. Due to lockdown, this sector has really seen a boom like situation that has never been before. In this pandemic company like Reliance Jio emerged India's top telecom operator in last four year. As per the bellow data. The number of subscribers was highest as compared to others like Vodafone, BSNL, Bharti Airtel in the year 2020. In February



• FMCG & Retail: This sector has seen a growth in this tough time. With continued fear of complete lockdown, food-based retail chains and essential commodity providers have emerged as highest gainer during this period. with the increasing need of healthy food and immunity-boosting products among consumers. It further broadened the scope for the companies in the product segment. These companies are renovating their growth strategies with a focus on providing a value proposition to consumers in existing

categories, launching new products in the food and health categories, enhancing the direct distribution of goods in the rural market, door to door services, etc. which help them to achieve the growth. By this, companies have been trying to widen their product portfolio. The leading brands like Dabur, Patanjali, Zandu, and other organic brands have launched more products item and variants in the health food segment. The market of Chyawanprash has seen a sharp rise of 30-40 percent in the mid of rising cases of coronavirus pandemic. A sharp rise in sales has been seen by almost all the major companies including Dabur, Emami, Badiyanath, Patanjali, among others that produce Chyawanprash. According to a report in the Times of India, between march 6 and April 6, Patanjali Ayurved saw a 400 percent rise in chyawanprash portfolio as mentioned by Patanjali Ayurved spokesperson. The above data of Patanjali Ayurveda's revenue and profit is showing highest revenue in the year 2020.



As per above data Reliance Retail's revenue growth was impressive performance in the year 2020.

- **Specialty chemicals**: Another sector which has increased the need for cleansing and sanitation has surged the demand for hand sanitizers, disinfectants and surface cleaners. India's largest fast-moving consumer goods (FMCG) companies have rolled out a variety of range of home cleaning, disinfectants, and personal hygiene products as they anticipate a surge in demand for such items amid the covid-19 crisis. Companies such as ITC Ltd and CavinCare have rolled out surface disinfectants. ITC has launched a Savalon-branded surface disinfectant spray, after a hand sanitizing liquid, Salon hexa, Marico LTD announced to launch of 'veggie clean', a fruit and vegetable wash.The increased demand for the disinfectants, drugs, and medicines due to the pandemic, has given an opportunity to the organizations manufacturing these. Hence organizations manufacturing in chemicals are expected to see a spike in demand owing to increase demand for disinfectants, drugs and medicines by the customers.
- Healthcare sector: the world was realized that the threat of a pandemic is very real and investment in the sector will be safeguard in near future. Demand for certain medical device like Oximeter, personal protection equipment PPE kits and mask had seen rise as infected patient with mild symptoms under self-care and isolation need these basic devices for self-monitoring. As per following data the sales growth rate of respiratory medicine
- Education The ongoing coronavirus (COVID-19) pandemic and lockdown may have devasted many sectors but it has clearly fast-tracked growth of the online education space. Edutech firm Vedantu which provide live online tutorial services to school students and those preparing for entrance and competitive examination

COVID-19 has also induced some long term changes in consumption pattern that has given opportunity for expansion and diversification of various digital business channels. The need to practice social distancing and stay at home to avoid public places. This was boon for e-retailer who has ensure contactless delivery of essentials at the consumer' doorsteps. Remote working has increased demand for home broadband and virtual private network (VPN) services benefitting telecoms. Entertainment also has gone digital and thus creating opportunities for the top player.

As the country stayed indoor the economy was dealt a crushing blow. While both central government and Reserve Bank of India (RBI) have announced mega stimulus package to revitalize the economy, like any other crisis, this will also create opportunities and open new horizons which will help to strengthen our economy. Govt hve started various economic policy and programme to revive the economy.

1. The prime Minister calls for Atmanirbhar Bharat (self-reliant India) to give impetus to our domestic manufacturer. India currently overdependent on Chine for raw material and now it is time to challenge this dependency and try look for alternative .Govt realized that India could be a manufacturing hub and destination of choice for many company as it can offer a conducive business environment .A conducive business climate with better infrastructure, simplified land and labour low , singe window clearance can enable India to develop a robust manufacturing ecosystem.

2. The current crisis underline the tremendous utility of social security programmes such as Jan Dhan account, Ayushman Bharat and Pradhan Mantri Surakcha Jeevan Jyoti Beema Yojana. The Jan dhan scheme enable the poor and marginalized to get cash directly from the Govt and empower specially the women and senior citizen.

3. This pandemic has highlighted the pressing need to expand our healthcare infrastructure and need to improved coordination between center and state to give accessible and affordable healthcare

4.It was time to introduce new digitizes lending model using artificial intelligence (AI). It disburse credit basis business flow such as invoice of Goods and Service Tax (GST)and not assets. This will be boon for many startup and small enterprises those do not get fund due to lack of collateral.

5. The government took recent steps in this direction with the introduction of incentives worth Rs. 48,000 crores to boost mobile phone manufacturing in the country, with production-linked incentive (PLI) scheme, contributing, close to Rs 41, 000 crore. The aim is to attract top smartphone players like Apple, Samsung, Oppo and vivo to set up their entire value chain in India under the approval route.

## CONCLUSION

COVID-19 has an impact on health and economy at large. Economy impacted significantly. Govt trying to revive the economy through expansionary budgetary policy give cusion to small and medium scale enterprise though massive expenditure in this sector. The sector which has turned the challenge in to opportunity has long term business perspective but the sector which are facing decreasing demand and low investment need to give them govt support during this crisis period. Even though the recovery is slow some sector has accepted this with new normal. Govt has taken effort to contain the virus and trying to bring the economy back on track.

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## OPPORTUNITY OF CRISIS DURING COVID-19 – IMPACT ON COUNSELLING SERVICES DURING PANDEMIC SITUATION

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## ABSTRACT

With the advent of year 2020 our economy was showing positive signs of growth in business and economy as indicated by the GDP of the country for year ending 2019. But after mid of March 2020, with a sudden outbreak of novel corona virus in the world and complete lockdown in India resulted in disastrous effect on every sector of the society, business or any organization not only materialistically but psychologically also. It has also hampered both the physical well- being and mental stability of the children, adult and old people in their day to day life. Many research studies has indicated the sudden rise in number of students, children, adult and old people seeking the services of the counselling centres and nutritionists across the countries to diagnose and manage their anxiety and stress level and to maintain their physical health in this pandemic situation.

In this context, my research study is aimed to discuss in detail the need of the nutritionists and counselling centres and their role in maintaining the psychological and physical health of the people of different age groups and to offer suggestions to mass population to overcome and manage their anxiety and stress level and thus maintain their psychological and physical health effectively.

Keywords: physical health, mental instability, counsellors, anxiety and stress

## I. INTRODUCTION

A sudden outbreak of a new wave of novel corona virus has not only touched the national geography of a particular country but also touched each and every part of the world, and among them India also does not remain isolated. All the business organizations may be private and public sector, multinational companies got adversely affected by this strong wave of uncertainties. Complete lockdown in our country resulted in many adversities for many business organizations may be small or big. Many businesses could not survive this unforeseen circumstances and collapsed and some suffered huge losses in terms of profit and revenue. Not only the business sector but society and people also suffered a lot considering the physical well -being and mental instability

In this context my research study is focused to cover details and discussion related to the present status of physical health and mental health of the people as an individual, as a part of society as well as of the business organizations. This research paper has highlighted the importance of counselling services (counsellors, psychiatrists, helpers) offered by various organizations and individuals to tackle this uncertain situation and thereby enhancing their well- being and mental stability.

#### **II. OBJECTIVES**

- 1. To study the services offered by counselling centres.
- 2. To study the impact of counselling services on the physical and mental health of individuals as an employee, a member of family.
- 3. To study the efforts made by companies, Government authorities and NGO's for maintaining health of employees and public in general.

#### **III. LITERATURE REVIEW**

1. There are more than 5,000 people who has taken help from the specialists –psychologists which were appointed by the administrative authorities of the district to provide counselling services whosoever need it the most and fighting against different turmoil such as fear, uncertainty, anxiety, stress and depression originating from the pandemic situation. Out of total 5,000 it has been identified officially that around 1200 people contacted these services through telephone or mobile. Dr TS Rao, Andhra Pradesh Psychologists' Association president told that for this purpose the district administration has appointed five psychologists on June 22 and till so far approximately 5,500 people have approached the psychologists, of which 1,200 approached for tele counselling, 3,800 for group counselling and 445 for individual counselling," Further he told that each psychologist receives 30 calls per day on an average basis. Maximum people took suggestions to resolve various issues such as fear, stress and anxiety. Apart from tele counselling, individual and group counselling are also being conducted to sensitise people living in red zones and quarantine centres every Friday and Saturday. People also have some

misconception about common cold, flu, viral fevers and the coronavirus which also got clarified using brochures and pamphlets. The rehabilitation psychologist also observed that many who do not show any symptoms for the coronavirus also approached those seeking help.

2. There are many companies approaching counsellors and psychiatrists to help their stressed employees who are working from home for extended hours due to the lockdown period and hence feeling emotionally unstable.

Just to name few companies like **Microsoft**, **P&G and Deloitte** that have sought professional assistance to help employees manage the turmoil due to social distancing and lockdown situation. Microsoft has approached different experts who will organize and conduct meetings with both managers and employees for approximately 45-60 minutes on the importance of "mental health and wellbeing on a global basis". Furthermore to create awareness about Covid-19 pandemic situation and offer assistance and guidance on self-care and managing working in a virtual world, Ira Gupta, Head- HR told that employees are hardwired for connection and in a world where most of the work is being performed remotely, the technology has to be advanced to reduce the gap between physical world and digital. On the other hand, Deloitte has started a counselling helpline where HR executives call employees who face any stress or anxiety most often. The company provides expert as per the requirement of the employees. P&G has been conducting webinars and inviting experts to help employees manage their mental and emotional wellbeing. They consider restoring the mental health of their employees as a part of their overall well- being and hence give it as the topmost priority especially during the turmoil situation.

They have started 24x7 helpline not only for their own employees but also for their families facing this adverse situation as informed by Srinivas PM, Head – Human Resources, P&G Indian Subcontinent.

Most of the companies are afraid that huge population working from home are not used to social distancing and may end up depressed or may show psychological side-effects. In such cases, professionals are providing guidance and assistance to avoid this phase and concentrate on work while being away from the workplace. 3. Counselling hotlines to counter anxiety over COVID-19. A majority of them are temporary services aimed at helping those facing mental health issues stemming from the current crisis. Many people miles away from their families in another metro and working from their home had a severe time due to lockdown situation went into depression. They have taken cautious effort by expressing and sharing their inner struggle on a counselling hotline. There are large number of callers contacting counselling hotlines now to discuss their anxiety and fear related to businesses and careers and uncertainty about Coronavirus infection and even fight for reducing the alcohol consumption during this pandemic situation. As per the situation, World Health Organisation made it clear that it is normal to feel unhappy, stressed, scared, irritated or angry during a crisis and suggested sharing with people you trust can help you out. A Chennai based psychologists working currently with Mastermind Foundation has also clarified that many people are habitual of a particular day routine and any deviation from that can be stressful for them as seen in lockdown situation. They have started many counselling services to help people clarify their misconceptions originated from COVID-19 situation:

- \* To offer counselling in Tamil and English, sixty psychologists have joined hands to; the initiative is facilitated by the Tamil Nadu Psychology Association. The service is available between specific time slots.
- \* A centre for mental health based in Chennai Mastermind Foundation, had brought together more than 60 psychologists from across India to offer counselling support, round-the-clock in 11 languages.
- \* To offer helpline support and assistance on various mental health related issues National Institute of Mental Health and Neuro Sciences (NIMHANS), Bengaluru has constituted a team of psychologists, psychiatrists and social workers.
- \* Arpan a Mumbai-based NGO is offering counselling through multiple modes chat-based counselling support via direct messaging on Facebook, Instagram, Twitter and through a live chat function on https://www.arpanelearn.com/.

## 4. Bengaluru psychologists team up with NGO to offer counselling for those impacted by COVID-19.

This project was initiated just fifteen days earlier and received calls from 35 individuals initially. The psychologists have knowledge of various languages including Tamil, Telugu, Kannada, Marathi, Hindi, English, Tulu, Bengali and Malayalam etc.

An initiative was taken up to provide service to those impacted by the coronavirus and their families by citybased NGO 'Sochara' including a group of 17 psychologists. This timely cost free service was offered in different languages and also volunteered by 18 counsellors.

Through social media and word of mouth publicity, the 30-year-old NGO has plans to approach the Karnataka government so that it can be availed by a wider section of the public.

Psychologists said that they deal with the trauma and depression of three specific sections who will require assistance immediately, those who have been diagnosed with the virus and been quarantined, their families and again during the post-quarantine period.

Sochara Secretary M Gurumoorthy told that they want to approach different sections of the society including distressed migrants or those with any form of worry in the present situation. The counsellors are given training by veterans like S P Takur who have counselled people during disasters and epidemics in the past and Dr Mani Kalliath of Basic Needs India."

Asked about further continuation of this service facility after the COVID-19 crisis, Gurumoorthy said that the number of people suffering from mental health issues are on rise in India and they would like to continue it even after the present problems gets over in near future.

## IV. ANALYSIS AND INTERPRETATION

- 1. Covid-19 pandemic situation was totally unpredictable for everyone may be an individual, society, business, company or a nation and hence affected the mental and physical health of everyone.
- 2. Many people staying in metros away from their families faced it severely due to work from home situation and social distancing as they could not share their deep feelings of turmoil and got depression.
- 3. People at home and working have been made aware by initiative of various counselling centres, psychiatrists and counsellors about the new reality of life, workplace, society and nation.
- 4. Mostly young kids, children, teenagers and adult faced bigger issues and mental instability due to Covid-19 situation.
- 5. Studies have indicated that many executives below 30 years of age who were among the top performers are now stranded at home and facing more emotional issues.
- 6. Many companies initiated counselling their employees by approaching the counselling centres seeking the help of professionals, experts (psychiatrists) and set up counselling helpline to conduct sessions and advice the employees to tackle this unforeseen situation.
- 7. NGOs have started many counselling services including programmes, helpline services, hotlines, hiring the psychologists who are multilingual to understand the problems of the stressed people and could offer suggestions or solutions to manage the same.
- 8. Many companies have conducted webinars and invited experts to offer suggestions related the maintenance of physical and mental health by focusing on nutrition, healthy diet, and physical fitness.
- 9. Many companies such as Google company extended many facilities such as reduced working hours, flexible working hours and reduced working days in a week for maintaining social distancing, less spread of infection, reducing the anxiety and tension among the employees.
- 9. Many studies have indicated the importance of meditation, yoga, physical activity and spiritual activity to get relief from uncertainties in life and reduce the stress, anxiety and depression of an individual during that period.
- 10. Government also took initiatives by setting up many counselling centres across the country and emphasised on the necessary precautions and guidelines for maintaining physical well-being and emotional set up of the people of the country.

#### V. SUGGESTIONS AND RECOMMENDATIONS

1. Human being is the most valuable asset among all and hence should be taken care at the most being an important part of a society, a culture or a nation.

- 2. More training and professional institutes should be established for providing professional courses in counselling, self-care, self-motivation, positive attitude development and emergency management like Covid-19 situation.
- 3. In every company there should be special positions for counsellors, psychiatrists etc. who can talk to employees on monthly basis and find out their mental set-up to observe their way of dealing with the normal and critical situations and any kind of adversities could be avoided due to mental tension or fear.
- 4. In this pandemic situation some initiatives at the family and society level like peaceful talks, meetings, conversation, fun activities, sharing and caring attitude development should be focused more so that people feel comfortable to talk to each other (even to neighbours and other social circle group members, if not nearer to their immediate family) and vent out their bad feelings, fear, anxiety and tension etc.
- 5. Follow a disciplined lifestyle covering various aspects like physical activity, yoga, meditation, balanced diet and spiritual discourses etc.
- 6. Be informative about advice and recommendations given by the national and local authorities, follow it strictly and watch only trusted news channels.
- 7. Maintain social contact with family members, friends, relatives and other social circles using different social media, mobiles and apps.
- 8. Reduce the intake of alcohol and drug use as these are short term remedies but causing huge losses in future.
- 9. Be positive in outlook and develop positive attitude towards others irrespective of caste, creed, region, religion, country and help and support each other so that everyone get out of it quickly and safely.
- 10. Think about other people engaged in social welfare activities and providing us ample comfort and convenience and be thankful to them who has risked their life for serving us well like health-workers, nurses, doctors, police officers, bankers, retailers, soliders and helpers such as milkman, washer-man, delivery boy etc.

## **VI. CONCLUSION**

Covid-19 pandemic situation has changed the scenario of the all the countries covering business sectors, institutions, societies and of course an individual. After the discussion on impact on counselling services, it can be concluded that the counselling sector which was bleak earlier has come up in a big way as everyone (family, employer and Government authorities) is approaching and seeking its advice for the betterment of its family members, employees, social groups and citizens of a nation. Many people and employees got satisfactory services provided by these counselling centres, companies, Government authorities, professionals and thereby managed their physical well- being and mental health which is vital for maintaining a healthy and happy nation like India. So we must salute them along-with helpers, volunteers, health workers, nurses, doctors, bankers, police officers, soldiers etc. for restoring our belief in life and keeping it alive.

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## A STUDY ON APPLICATION OF TECHNOLOGY ACCEPTANCE MODEL (TAM) ON ONLINE TEACHING IN HIGHER EDUCATION INSTITUTIONS ACROSS MUMBAI DURING COVID 19 PANDEMIC

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## ABSTRACT

Online teaching became the need of the hour in light of complete and frequent lockdowns during COVID19 Pandemic in India. Though use of technology in teaching has been a very prevalent factor in western countries since many years. In case of country like India which has witnessed technological shift in many of its sectors in a big way since past few years, online learning and teaching was still at a nascent stage before outbreak of the pandemic. The idea behind this research is to find out the factors that determine faculty's level of acceptance of online teaching and further to evaluate how will these factors play a significant role in shaping teacher's intention to actually use online teaching systems in the most effective manner. The study involves four important variables which is adopted from original Technology Acceptance Model, the first one being a faculties perception towards ease of using the online teaching system, faculties perception towards how useful they find

online teaching system and their attitude towards online teaching which finally predicts their behavioral intention towards using the online teaching system. For this study data collection was done through well-defined structured questionnaire and data from 210 academicians teaching in various educational institutions in Mumbai was collected and analyzed to interpret the findings. The final analysis of the results obtained through structural equation modelling method with the help of IBM AMOS package concluded that Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude Towards Using (ATU) have positive impact on Behavioral Intention to Use (BITU) for online teaching in Higher education institutions in India. This research aims to enlighten higher education faculties, management, authorities and policy makers to understand and bring about necessary guidelines to make online teaching more enjoyable, smooth and effective in long run by using TAM framework under special COVID 19 circumstances

Keywords: Technology Acceptance Model (TAM), Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude Towards Using (ATU), Behavioral Intention to Use (BITU) Online Teaching, COVID19 pandemic.

## **INTRODUCTION**

There are several pandemics in the history of mankind which has affected its physical, economic and social wellbeing, to cite a few flu pandemic in 1918 and 1968, influenza in 1957 and H1N1 and swine flu in 2009 but none could create the deep rooted impact on every aspect of human life the way COVID 19 pandemic created which started in late 2019 and is still in existence (Wikipedia, 2020). When it comes to education sector, it has been estimated that more than 290 million college students have been directly affected across globe and in India alone 32 crore college going students have been impacted by serial closures of educational institutions (Indialegallive, 2020). While education is not only about learners but also about teachers and hence the consequences of complete transformation in teaching learning framework has created a paradigm shift for academic fraternity in higher education institutes across India. While online teaching and learning is not a new concept but it did not really take off in India until the shutdown of colleges and universities which forced faculties to move from conventional and traditional chalk duster teaching to adoption of newer and modern methods of online teaching. Like any change or transformation process even this path was and is not easier for teaching fraternity. While academic institutions explored and implemented various technologies for teaching and learning like zoom, google class rooms, google meet, webinars, skype, you tube etc. but still faculties found it difficult to adopt and adapt to newer technologies considering the fact that many have been in this sector since more than 15 years and never felt the need or inclination to do so earlier (Jena, 2020). The success or failure of implementation of any technology largely depends on the ultimate user whose perception and attitude towards it really affects the end result (Farahat, 2012). Davis, Bagozzi and Warshaw (1989), introduced the technology acceptance model to explain users perception and attitude about the adoption of computer technology. This model has been widely used by researchers across the globe to study user acceptance of various technologies introduced in past in various sectors but this research paper tries to implement and analyze the results of this model on online teaching perception, use, attitude and behavior of academicians in Higher education institutions in India especially under COVID 19 pandemic.

# LITERATURE REVIEW AND HYPOTHESIS FORMULATION. THEORETICAL BACKGROUND:

Fishbein and Ajzen (1975) in their pioneering study on theory of reasoned action (TRA) found that an individual's behavior towards something or someone is influenced by their attitudes, perceptions and beliefs. Davis (1989) in the original TAM model proposed that for adoption and use of technology there are external factors which have an impact on both Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), while PEOU is set to influence PU and in turn both have an impact on users attitude towards using the technology which further affects users behavior and his intention which is shown in figure1. In order to study perception, belief, attitude and behavior of faculties towards adoption and adaption of online teaching in Indian higher education during COVID 19 pandemic this model is being used with few modifications by narrowing down the scope to studying four factors of model which are Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude Towards Using (ATU) and Behavioral Intention to Use (BITU).



Figure1: Original TAM

## Perceived Usefulness (PU) and Perceived Ease of Use (PEOU).

Davis (1989) defined both PU and PEOU. According to him the perception of an employee regarding impact on his performance is Perceived Usefulness (PU) and how easily the employee is able to use technology in his day to day working is Perceived Ease of Use (PEOU). His findings have established the relationship between Perceived Usefulness (PU) and Perceived Ease of Use (PEOU).

## H1: Perceived ease of use has impact on the perceived usefulness of the system. Perceived Usefulness (PU) and Attitude Towards Using (ATU).

According to Davis, Bagozzi and Warshaw (1989) and important predictor of an users attitude towards using a particular technology is his belief about how useful the technology is in improving his performance.

## H2: Perceived usefulness has impact on attitude towards using

## Perceived Ease of Use (PEOU) and Attitude Towards Using (ATU)

Davis, Bagozzi and Warshaw (1989) said that an employee's opinion towards how effectively and smoothly he is able to use technology so as to meet his goals and objectives is an important influencer on his attitude towards using the said technology

## H3: Perceived ease of use has impact on attitude towards using

## Perceived Usefulness (PU) and Behavioral Intention to Use (BITU)

Davis, Bagozzi and Warshaw (1989) in their detailed empirical study of TAM model found that the intention to use the technology and user's behavior towards the same is influenced by his opinion towards usefulness of the technology in impacting the results of the employees.

# H4: Perceived usefulness has impact on and Behavioral Intention to Use Attitude Towards Using (ATU) and Behavioral Intention to Use (BITU)

Davis, Bagozzi and Warshaw (1989) found in their research that whenever any technology is implemented the end user attitude towards using that system finally determines the behavioral intention to use and lastly the actual usage of the system.

## H5: Attitude Towards Using (ATU) has impact on Behavioral Intention to Use (BITU)



Figure2: Proposed Research Model
# International Journal of Research in Management & Social Science

Volume 9, Issue 1 : January - March, 2021

#### **RESEARCH METHODOLOGY**

In order to test the proposed research, model a well-defined structured questionnaire as a tool for collecting data from respondents was used. After review of literature four constructs were finalized which were Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Attitude Towards Using (ATU), Behavioral Intention to Use (BITU). A five point Likert rating scale was used to collect the responses from sample who gave ratings between "strongly disagree" (1) to "strongly agree" (5) on these constructs. Approx. 250 filled responses were received but out of them 210 were found to be complete and have been used in analysis. Data was collected from academicians teaching in various colleges in Mumbai area who have undertaken online teaching during pandemic COVID 19.

Variable	Category	Number	%
Gender	Male	94	44.8
	Female	116	55.2
Institute	Aided	120	57.1
	Unaided	90	42.9
Age	Upto 30	69	32.9
	31-40	53	25.2
	41-50	52	24.8
	50&	36	17.1
	Above		
Experience	Upto 5	67	31.9
	6-15	67	31.9
	16-25	44	21.0
	Above 25	32	15.2

Table	1:	<b>Demographic Description</b>
Lanc	1.	Demographic Description

Indices	Saturated	Suggested
	model	value
Chi-square	1.006	< 5.00 ( Hair et
value /df	1.000	al, 2013)
P voluo	161	> 0.05 ( Hair et
1 value	.+0+	al, 2013)
CEI	0.047	> 0.90 (Hu and
011	0.947	Bentler, 1999)
ACEI	0.026	> 0.90 ( Hair et
AGFI	0.920	al, 201s3)
NFI	0.045	> 0.90 (Hu and
INFI	0.945	Bentler, 1999)
CEI	1.000	> 0.90 (Daire et
CFI	1.000	al, 2008)
DMD	0.046	< 0.08 ( Hair et
KMK	0.040	al , 2013)
DMCEA	0.005	< 5.00 ( Hair et
KNISEA	0.005	al, 2013)

#### ANALYSIS AND RESULTS

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test was used so as to identify most relevant factors out of all the factors obtained and with reference to my study of TAM and online teaching Bartlett's test of sphericity is found to be significant and Kaiser-Meyer-Olkin measure of sampling adequacy (MSA) is 0.868. Four prominent variables were also identified after factor loading and Independent variables are Perceived Usefulness (PU) while dependent variables are Perceived Ease of Use (PEOU), Attitude Towards Using (ATU), Behavioral Intention to Use (BITU).

After Exploratory Factor Analysis (EFA) the next step is Confirmatory Factor Analysis (CFA) which helps to test the validity and reliability which are known as discriminant, construct and convergent respectively. Lastly, to analyses the association of latent variables and to check the acceptance or rejection of hypothesis Structural Equation Modelling using structural model was performed

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Table 2: Fitment indices of measurement model

Figure3: Measurement Model

Table3: Measurement Mod	lel (CFA)
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Factor & Items	Factor	Critical	Alpha	Average	Construct
	Loading	Ratio		Variance	Reliability
				Extracted	
Perceived Ease of Use (PEOU)			0.888	0.671	0.891
PEOU1	0.775	12.473			
PEOU2	0.871	14.501			
PEOU3	0.803	13.086			
PEOU4	0.824	Fixed			
Perceived Usefulness (PU)			0.875	0.640	0.877
PU1	0.816	12.247			
PU2	0.794	Fixed			
PU3	0.815	12.238			
PU4	0.774	11.558			
Attitude Towards Using (ATU)			0.885	0.665	0.888
ATU1	0.801	13.585			
ATU2	0.844	14.631			
ATU3	0.756	12.512			
ATU4	0.856	Fixed			
<b>Behavioral Intention To Use (BITU)</b>			0.807	0.514	0.809
BITU1	0.739	8.854			
BITU2	0.738	8.845			
BITU3	0.678	8.311			
BITU4	0.711	Fixed			

From assessment of Measurement model it can be seen that all the items have factor loadings more than 0.6.

According to Netemeyer, Bearden and Sharma (2003) items with above 0.6 factor loadings should be used in the

analysis and below ones should be deleted also loadings above 0.6 also exhibit a proper construct reliability (Field,

2013). Further in the table we can also see that average variance extracted (AVE ) values are well above  $0.5\,$  which

was suggested by (Fornell, Larcker, 1981). Lastly assessment of measured model shows that convergent validity of the constructs is also proper since Cronbach alpha values in the table are above 0.8

			v			
Factors	AVE	Squared Interconstruct Correlation (SIC)				
		PEOU	PU	ATU	BITU	
PEOU	0.671	0.819*				
PU	0.640	0.210	0.800*			
ATU	0.665	0.612	0.300	0.815*		
BITU	0.514	0.208	0.039	0.222	0.717*	

#### Table 4: Discriminant Validity

# NOTE: The values in \* indicate the square root of Average Variance Extracted (AVE) while others indicate correlation coefficients

In the above table there are two values one is AVE and other is Squared Interconstruct Correlation. It can be seen that AVE value are greater than Squared Interconstruct Correlation which proves the Discriminant validity too.

#### STRUCTURAL EQUATION MODEL ANALYSIS

The Variables used in structural equation model are:

#### **Observed**, endogenous variables

- 1. Perceived Ease of Use
- 2. Attitude Towards Using
- 3. Behavioral Intention To Use

#### **Observed**, exogenous variables

1. Perceived Usefulness

#### Unobserved, exogenous variables

- 1. e1: Behavioral Intention To Use
- 2. e2: Attitude Towards Using
- 3. e3: Perceived Ease of Use

#### Hence the number of variable in the SEM is

N	lumber	of	variable	es in	model	: : :	7

- Number of observed variables : 4
- Number of unobserved variables : 3
- Number of exogenous variables : 1

Number of endogenous variables:



3

#### **Figure 4: Structural Model Estimates**

#### Table5: Structural Model Estimates and Hypothesis

Variables	Unstandardize	S.E of	Standardiz	t	Р	Hypothesis
	d co-efficient	B	ed co-	value	value	
	<b>(B</b> )		efficient			
			(Beta)			
PU< PEOU	0.233	0.084	0.188	2.765	0.006	Accepted at 10%
ATU< PU	0.108	0.037	0.169	2.914	0.004	Accepted at 5%
ATU<	0.408	0.046	0.512	0 966	***	Accepted at 1%
PEOU	0.408	0.040	0.313	8.800		
BITU <pu< td=""><td>0.009</td><td>0.057</td><td>0.011</td><td>0.160</td><td>0.873</td><td>Rejected</td></pu<>	0.009	0.057	0.011	0.160	0.873	Rejected

# International Journal of Research in Management & Social Science

Volume 9, Issue 1 : January - March, 2021

ISSN 2322 - 0899

BITU< ATU	0.237	0.089	0.188	2.669	0.008	Accepted at 10%
Goodness of fit indices: P=0.135, CMIN/DF= 2.233; CFI=0.987 ; GFI=0.995 ; AGFI=0.947 ; NFI=0.977 ; IFI=0.987 ; TL I=0.920 : PMSEA = 0.077 SPMP= .0268						

#### DISCUSSIONS

The results of our analysis clearly was in congruence with Davis, Bagozzi and Warshaw (1989) who also in their study proved that perceived ease of use of a technology has a positive impact on perceived usefulness. Secondly Farahat (2012) in her research established a positive relationship between Perceived usefulness and attitude towards using of original TAM model which is exhibited in our findings too. Further our study is in consent with findings of (Masrom, 2014) who have also established positive impact of Perceived usefulness on attitude towards using. Fathema, Shannon and Ross (2015) found that Perceived ease of use has significant effect on attitude towards using a system which is supported by my research findings too. The results of analysis of my research differs with findings of (C & Mohan, 2019) who have proved the influence of Perceived usefulness on and Behavioral Intention to Use. Lastly Teeroovengadum, Heeraman and Jugurnath (2017) said that from the original TAM model Attitude Towards Using (ATU) has impact on Behavioral Intention to Use (BITU) which our analysis supports through evaluation of SEM model. **Recommendations** 

Many Studies have been conducted in past regarding TAM on eLearning from perspective of students and faculties but very few of them have studied the application of TAM on online teaching specifically in higher education sector. My study tries not only to apply TAM for online teaching on Indian higher education sector but also study it under circumstances of COVID 19 pandemic where adoption and adaptation to technology is not a choice but a necessity. Though there are many factors which influence the perception of faculties in using and implementing the technology in their teaching learning framework. The first and foremost implication is for faculties of higher education whose perception, belief, attitude and behavior towards the blended teaching and learning systems of modern not only has direct effect on their performance but also has an impact on perception, belief, attitude and behavior of learners. The question here is either adapt and thrive or perish and succumb to the circumstances, the choice is definitely of the individual faculty members who can either surpass all the personal and professional challenges and make the best use of the challenge to convert it into an opportunity to learn the technology and implement in their pedagogy forever. The second implication is for the higher education institutions, many of whom claim to be focusing of digital learning or blended learning. These colleges and institutions need to first identify the early adopters of technology and late adopters too and then provide necessary support and infrastructure to these faculties according to their pace and capacity of adopting the teaching learning systems. While I am writing this research paper and it's been almost a year since the colleges are completely physically shutdown for students and all teaching, learning an assessments are still happening online and looking the prevalent situation of pandemic it appears the same is bound to continue for more months ahead. Hence government, universities and policy makers need to focus on initiatives, incentives, guidance, workshops, training etc for faculties and higher education institutions so as to ensure acceptance of teaching, learning technology by all in long run serves the goals and policies of higher education in India.

#### LIMITATIONS:

The first limitation is that similar study can be undertaken from learner's perspective in COVID19 pandemic. The sample size is considerable small due to limitations of time and hence a bigger sample would be able to provide more insight on the findings. The original TAM model can be completely studied because in this study only four factors were considered. The area of research is only Mumbai so the study can be extended to more geographical areas

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#### THE RESURRECTION OF INDIAN AUTOMOTIVE INDUSTRY

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#### ABSTRACT

The automotive industry plays a very crucial role in strengthening our nation's economy. It has been widely reported that the automotive sector in India has been going through a very rough phase from the past couple of years. The already struggling industry received a heavy blow when the lockdown kicked in. The blow was so heavy that the industry reported zero sales in the month of April 2020. It was one of the many firsts that we witnessed during the pandemic. The crippled industry struggled some more to get accustomed to the new normal. That's when the automobile manufacturers realized that they have to deploy some innovative measures to get things back on track.

Several measures were introduced to boost the sales and with the approaching festive season, almost all the manufacturers were geared up to sell their products. The new normal forced the manufacturers to take extra care of the consumers' safety and hence, it became just the job for the creative heads. All the measures which were introduced had a positive impact and the industry managed to stand back up on its feet. The festive season witnessed manufacturers selling their products in large numbers. This research paper encompasses the whole roller-coaster ride of the automotive industry in the past one year and all the innovative measures which were undertaken by the manufacturers. One of the major factors which contributed to the resurrection of the industry was the increased demand of personal mobility solutions. People became more cautious and started drifting away from using public transport. The manufacturers made sure to cash in on this trend and rolled out attractive offers and schemes to lure in more customers.

Now that 2021 is here and the pandemic still lurking at our doors, it is safe to assume that the industry will continue to attract potential customers with the help of innovative trends and developments.

Keyword—Automotive industry. Automotive sector, Pandemic, Lockdown, Automobile manufacturers

#### **INTRODUCTION:**

The term resurrection perfectly describes the current status of the Indian automotive industry. The past few years have witnessed several ups and downs in the Indian automotive scenario. The sales were dwindling even before the pandemic ensued and during the peak time of the lockdown, the automotive industry was as good as dead. Tough times call for tough measures and that is what automobile manufacturers did to get back up on their feet. The economy, even at the global level, suffered a huge blow because of the pandemic and needless to say, the automotive industry wasn't spared from it either. After things came back to being a little normal, people started realizing the importance of personal mobility solutions.

The governments around the world kept promoting the idea of social distancing to curb the spread of the coronavirus. Automobile manufacturers took the opportunity at hand and converted it into a gold mine. Several initiatives and campaigns are being rolled out during the pandemic to make the potential customers feel safe. Whether it be guaranteeing proper hygiene and safety during deliveries and test rides to rolling out heavy discounts to cash in on the opportunity, the manufacturers left no stones unturned in boosting the sales. This research paper tracks down the whole roller-coaster ride the Indian automotive industry went through in the past year and the measures undertaken by manufacturers to come out of the slump.

#### **OBJECTIVES OF THE STUDY:**

- 1. To study the slump before the pandemic
- 2. To analyse sales during the lockdown period
- 3. To explain the boost in sales
- 4. To examine the measures undertaken by manufacturers

#### **RESEARCH METHODOLOGY:**

This research is purely based on secondary data sourced from references mentioned below. All the figures and stats mentioned in the tables are picked up from credible sources and have been released by the manufacturers themselves. The research is conducted by deeply understanding the numbers and the trends witnessed in the past one year.

# International Journal of Research in Management & Social Science

Volume 9, Issue 1 : January - March, 2021

#### THE STRUGGLING AUTOMOTIVE SECTOR IN INDIA

As mentioned previously, the Indian automotive sector was going through a rough patch even before the lockdown ensued and the stats mentioned in the table below [1] reflect the same. The passenger vehicle segment noticed a Year-on-Year drop of -6.20 % in the month of January 2020, as compared to the same time last year. When we take commercial vehicle segment in consideration, the Year-on-Year drop was as much as -14.04%. The three-wheeler segment is the only one which experienced growth but even that wasn't enough to make a dent in the overall sales. The combined sales stood at 1,739,975 units in January 2020 as opposed to 2,019,253 units sold in January 2019, resulting in a Year-on-Year drop of -13.83%.

Segment	January 2019	January 2020	% Change
Passenger vehicles	2,80,091	2,62,714	-6.20%
Commercial vehicles	87,591	75,289	-14.04%
Three-wheeler	54,043	60,903	12.69%
Two-wheeler	1,597,528	1,341,005	-16.06%
Total	2,019,253	1,739,975	-13.83%

Table 01: January	2020	Automotive	Sales	data
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#### THE LOCKDOWN PERIOD:

As the Indian automotive sector was trying to get back up on its feet, the Indian government had to implicate a strict lockdown to curb the spread. All the retail outlets and workshops were remain completely shut in the month of April 2020. The lockdown period witnessed many firsts including the Indian automotive industry reporting zero sales. The sales data released by the manufacturers for the month of April 2020 [2] reflected zero sales figure in all the rows. This hasn't happened ever in the history of independent India and that goes on to show that the month of April in 2020 was the 'worst' for the Indian automotive sector.

Manufacturers	April 2020	April 2019	Growth
Maruti Suzuki	0	1,31,385	-100%
Hyundai	0	42,005	-100%
Mahindra	0	18,901	-100%
Tata	0	12,695	-100%
Honda	0	11,272	-100%

Table 02: April 2020 Automotive Sales data

#### THE RESURRECTION:

The lockdown was lifted in a phased manner with the government allowing the manufacturers to open their retail outlets once again. This was followed by manufacturers taking vigilant measures in assuring people with high-standards of hygiene and safety. The automotive sector witnessed a steady rise in demand as people started opting for personal mobility solutions rather than choosing public transport. The month of November in India is known for its festivities and this particular period often witnessed high sales number. The manufacturers took notice of all the things mentioned above and rolled out several attractive discounts and exchange offers to lure in more customers. This was accompanied by manufacturers launching new products with added features like air purifier. Another major takeaway from the whole fiasco was the shift in approach. All the things related to buying an automobile were given a virtual angle where potential customers could get a 360-degree augmented view of the vehicle, book a test ride and know other details.

Manufacturers	November 2020	November 2019	Growth
Maruti Suzuki	1,35,775	1,39,133	-2.4%
Hyundai	48,800	44,600	9.4%
Mahindra	18,212	14,635	24.4%
Tata	21,640	10,400	108.1%
Honda	9,990	6,459	54.7%

Table 03: November 2020 Automotive Sales data

As seen in the table above [3], major players of the game like Tata Motors, Hyundai, Kia and Mahindra reflected green in their ledgers.

#### **CONCLUSION:**

This research paper concludes that it is safe to say that the Indian automotive sector is back on track and the rising demand of personal mobility solutions has proven to be a trouble-shooter. Manufacturers too, are now more vigilant than ever before to keep the green streak going. The automotive industry might have hit a rough patch but the steady growth is a positive sign for the industry and the whole economy.

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#### **BLOOMING OPPORTUNITY IN THE TECHNOLOGY SECTOR IN CRISIS**

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#### ABSTRACT

It would have been almost impossible to foresee the rapid changes that have taken place as the COVID-19 outbreak was declared a global pandemic and governments around the world adopted drastic measures to help contain its spread. This Crisis has generated a lot of challenge, it has also created opportunities particularly in the technology sector. People around the world have moved to remote working and home schooling, All industries have been forced to innovate and adopt to digitally transform on an unprecedented basis to ensure continuity.

#### **INTRODUCTION**

As corona virus pandemic ravages the planet and has confined the general public to their homes, many companies are experimenting with technology to bridge over crisis. This research paper highlighted that how different opportunity come in the technology sector like rise of mobile applications and calling apps became particularly popular with individuals resorting to videoconferencing to schedule work meetings, home schooling or simply to catch up virtually with friends and relatives as they were forced to remain in their homes. Also AI tools were deployed across the country to enable the quick diagnosis of patients.

#### I. The rise of mobile applications

World was forced into lockdown since 2020, due to which time spend on mobile apps began to rise. Video Calling apps became particularly popular with individuals resorting to videoconferencing to schedule work meetings, home schooling or simply to catch up virtually with friends and relatives as they were forced to remain in their homes. Zoom Cloud Meetings app have topped download charts across the world while Microsoft Teams has seen a rise in users in following the outbreak of COVID-19

#### **II. Data Protection**

To help spread of the virus to others, employers began implementing precautionary measures, such as temperature checks on employees and restrictions on business and personal travel. Prior to the Crisis in normal day to day activity, such measures would have likely raised questions around individual liberty and privacy. A balance has got to be struck between an individual's right to data privacy and therefore the refore the obligation to guard the health and safety of other employees and the public at large.

#### .III. Artificial Intelligence

AI tools were deployed across the country to enable the quick diagnosis of patients, new algorithms designed to identify abnormal findings on chest x-rays and examine the lung infections within just three seconds.

#### IV. Cyber security

A noticeable spike in corona-virus themed attacks since a pandemic was declared .Many publications reported 2,500 infections of just two strains of malware delivered in COVID-19-themed emails in one day, in contrast with only tons of infections in the days before the World Health Organisation (WHO) can warned the rise of phishing emails appearing to be from the WHO. Cyber security threats, prompt organizations to reinforce their information security systems and eventually adopt advanced analytics platforms to proactively identify and resolve exploitable vulnerabilities in their systems.

#### V. Technology Contracts

The direct implications of the COVID-19 pandemic in the sector have been twofold: (a) a major disruption to the global tech supply chain across manufacturing, shipping and delivery, particularly for companies with a dependence on China for the raw materials and (b) need to leverage and adopt technologies as 5G, smart city solutions, AI and IoT to meet future global challenges e.g. to identify extraordinary requirement for remote interaction and the use of smart tools to identify virus hotspots.

A new detailed note on the issues should be thought about while drafting future IT contracts in a COVID-19 environment .We have been asked to undertake contract reviews for a significant number of high value regional tech clients. Even where a counter-party has failed to deliver the consignment or fulfil its obligations, we would encourage by the clients to look at collaborative rather than hostile contingencies in the first instance. A client's interests in protecting those companies that are turning to discussion and co-operative approaches are seeing quicker and more effective solutions.

#### VI. Innovation

Innovation often thrives in times of crisis and should be highly praised. For example, in many countries like chine food delivery service introduced robots that bring food from kitchens to delivery workers, and to customers waiting for takeout orders.

#### VII. Increased online media consumption

More than one fifth of the world's population locked home, it is known that online media consumption has spiked since the pandemic was declared. Due to the rush in demand, global media streaming platforms like Netflix and Amazon Prime Video have had to reduce traffic and definition to ease pressure on telecom network infrastructure.

#### VIII. E-gaming

The pandemic also put impact on the major sporting events from Wimbledon to the Olympic Games. Many sports fans have turned their attention to e-sports, with every e sports league accelerating its ability to host online-only matches. While e sports were already on the radar of major sponsors, the surge in viewers and consumption of online content is likely to generate a lasting interest in this burgeoning ecosystem even after the COVID-19 pandemic get over.

#### CONCLUSION

It may have seemed that everything about the COVID-19 outbreak is negative but there is always a silver lining in every cloud. As the outbreak is likely to last after some time but shifting to remote working and home schooling may lead to more permanent changes once the crisis is over. We may choose to scale back on business travel if virtual meetings worked during this crisis. These shifts will lead to cost saving benefits for businesses and an already noticeable positive impact on our environment. Most of these technologies motorized by the cloud, regulators may also be prompted to ease data localization requirements, which will enable more businesses to adopt cloud computing technologies. Besides creating opportunities for cloud service providers to benefit from this rise in demand, the increasing reliance on cloud computing will help small businesses scale and reduce their expenses on IT infrastructure.

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#### A STUDY ON THE IMPACT OF INNOVATIONS INTRODUCED BY THE E-COMMERCE COMPANIES IN INDIA DURING THE COVID-19 PANDEMIC

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#### ABSTRACT

This paper attempts to study the impact of the corona virus pandemic that brought about the adoption of the New Normal in the lives of the entire global population. There has been a sea-change in the buying habits of the customers. The basic purpose of this research paper was to survey customers' opinions about the growing trend of online buying during the Covid-19 pandemic. The principle motive of this study was to understand the attitudes of customers when it comes to adapting themselves to a new-normal alongwith the innovations introduced by the E-commerce companies. The opportunities caught by the E-commerce companies during this crisis is another major highlight of this paper. The interrelations between customers attitudes and their demographics based on the variables like Ease of buying, Product Delivery Speed, Safety Measures and Product & Service Quality were analysed. The study mainly focused on people belonging to all the age-groups. Therefore, related literature with reference to the opportunities for E-commerce companies during Covid-19 pandemic were reviewed as a basis for this research paper.

Keywords: E-Commerce, Covid-19 pandemic, customers, buying habits, products

#### **INTRODUCTION:**

Electronic commerce or E- COMMERCE is the method of buying and selling through information and communication technology networks. E-Commerce has led to the emergence of start-ups and new entrepreneurs due to the less investment involved. When it comes to products, 'You name it and we deliver it at your doorstep' has been the mantra of E-Commerce. All types of products and services ranging from personal care to home decor, from electronics to jewellery, from apparels to even vehicles, every imaginable product has been the hallmark of every E-commerce platform. Usually E-commerce takes place in four different manners: Business to Business (B2B), Business to Customer (B2C), Customer to Customer (C2C), Customer to Business (C2B). Amazon, Myntra, Flipkart, eBay, Quikr have been the top players in the E-Commerce arena. E-Commerce has been growing substantially at a rate of 23% annually and India is said to be world's third largest E-commerce hub. As per the Telecom Regulatory Authority of India, it is estimated that 40% of internet usage will be done by the Indian population by the conclusion of 2021.

Covid-19 global crisis has led to creation of new potentials and opportunities in bringing about a humongous change in the overall setup of E-commerce. It is estimated that with the advent of Covid 19 pandemic, the extensive reach of E-commerce companies have grown to 17% with a whopping increase of 133% in sales. The major players in this respect are fashion apparels and accessories, FMCG, pharmaceuticals and electronics.

#### LITERATURE REVIEW:

Hasanat et al. (2020) An analysis of E-Commerce in Malaysia was made in which it was inferred that Malayasian online business portals were severely affected due to the lockdown. Most of the Malaysian markets are heavily loaded with Chinese products. And due to a stoppage of import and export, it will be a huge loss for the Malaysian economy.

Tran and L.L.T. (2020)A comprehensive study was made based on the gratification theory in the context of the fear of pandemic. Using a sampling size of 617 online consumers, the relationship among sustainable consumption and economic benefits were researched upon. Thus this happens to be a examining the relationship between pandemic fear and the connected variables.

M. A. Salem and K. Md Nor, A 10 factor analysis to study the intention to adopt E-commerce during the Corona Virus pandemic in Saudi Arabia was done wherein data collection was done through snowball sampling technique. Lack of alternatives, government support, propensity related to risk , perceived external pressure and risks were supposedly the intentions of consumers to adopt E-commerce.

Bhatti et al. (2020) had inferred that there has been a tremendous rise in E-commerce because of the Covid 19 impact. It was considered to be a feasible option especially during the lockdown when there was complete restrictions on the movement of people. An indepth study has been made to understand the overall impact of the pandemic on E-Commerce in the context of cost versus connected actions.

**RESEARCH GAP :** It was found that very less studies have been undertaken based on the market surge post Covid-19 pandemic. The earlier studies have indicated that there is a very high demand for the every imaginable product and at the same time a very high growth too. This research paper attempts analyse the growth trends of E-Commerce from India's perspective.

#### **OBJECTIVES:**

- To study the impact of Covid-19 pandemic on E-Commerce companies
- To study the intensity with which people have adopted E-Commerce to fulfill their needs
- To know whether E-Commerce has become a substitute in the context of Covid-19 fear

#### SOURCE OF DATA:

- This research is based on secondary data.
- The data is retrieved from the IBEF (Indian brand equity foundation), UNCTAD and Netcom Suisse ecommerce association, unicommerce e- commerce report and U.S. department commerce data and many other authorized websites.

#### DATA ANALYSIS & INTERPRETATION:

It can be clearly interpreted from the above table the demographic fluctuations w.r.t. E-Commerce . There has been an increase in the population and the active internet and social media users. But on the other hand, there has been a slight decrease in the new mobile phone connections.

Factors	Users	% Growth from previous year		
Population	1.37 billion	+1.0%		
Mobile phone connections	1.06 billion	-1.4%		
Internet user	687.6 million	+23%		
Active Social media users	490.0 million	+48%		
(source: we are social, hootsuite)				
Table 1.1				

E-COMMERCE CATEGORY-VOLUME GROWTH		
Category	% GROWTH from Year 2019	
Fashion and accessories	20%	
Electronics and Home appliances	22%	
Eyewear and accessories	47%	
Beauty and wellness	130%	
Health and Pharma	38%	
FMCG and agriculture	55%	
Other	13%	
Overall	20%	
Table 1.2		

Due to the impact of the pandemic, there has been an increasing trend towards the demand for products related to personal care, that is, beauty and wellness tops the list with a whopping 130% growth as compared to 2019. FMCG and agriculture follows suite. And it is also to be noted that eyewear and accessories have been in considerable demand due to the high incidence of Work From Home. This table points out to the buying choices made by the Indian customers and it is quite unsurprising that the race to stay fit and healthy tops the list for nearly every Indian.

TOTAL RETURNS				
	2019	2020	Absolute increase/decrease in returns	
Total return per forward order	20%	17%	-3%	
Return on COD	27%	20%	-7%	
Return on Pre- paid	12%	22%	-1%	
Table 1.3				

It is quite startling to learn that there has been a decrease in the number of returns made. This indicates the thoughtful buying patterns of the people and also suggests that due the time of crisis, considerable amount of time is taken to decide about the right things to be purchased to avoid wastage of money.

MONTHLY TRAFFIC ON TOP 10 INDIAN E-COMMERCE WEBSITES		
Websites	Monthly Traffic (Millions)	
Amazon	200.0	
Flipkart	157.5	
India mart	52.2	
Myntra	14.2	
Snapdeal	12.9	
Firstery	12.55	
1 mg	9.05	
Book my show	7.2	
Nykaa	5.35	
2gud	4.05	
Table 1.4		

It quite surprising to analyse the traffic on the top 10 E-Commerce Companies which has been mainly due to the restriction of movement of people and closure of the shops, malls and hypermarkets. Amazon tops the list with a humongous traffic of 200 million followed by Flipkart and India mart. It is also to be noted that there have been lots of new startups and manufacturers who have had collaborations with these top E-Commerce companies to market their products. Alongwith that, less heard names like 1 mg, 2gud have also been able to be amongst the top ten E-commerce in India which is in itself a matter of great achievement especially in the context of the Covid-19 pandemic.

#### FINDINGS AND CONCLUSION:

When compared with the data pre-lockdown phase, there has been a 17 % rise in the volume of orders received during the Covid 19 pandemic as on June 202.

The much acclaimed popularity of E-Commerce has gained in the hearts and minds of the general public due to the efficiency in delivery and it wouldn't be surprising to state that the figures could go up in the upcoming times.

The FMCG (Fast Moving Consuming Goods) sector, beauty, health, pharma, fashion and accessories, appliances and electronic devices have been at the forefront as these have led to the growth at 133%. Further its also interesting to note that the states that had the highest incidence of Covid -19 cases, i.e., Delhi-NCR, Maharashtra and Karnataka have contributed to the highest E-commerce volumes by claiming a whopping 65% of the overall demand throughout the country.

Certain e-commerce platforms like Swiggy and Zomato had tie-ups with the local grocery shops to deliver goods at a faster rate based on a pre and post lockdown phase. These deliveries are titled hyperlocal due to the above mentioned collaboration.

The Electronics sector has seen a growth of 22%. Electronic items like smartphones, television, device accessories are the major items bought by the consumers on a very large scale due to the culture of Work from home, Online learning, Online tutoring, etc. The tier III cities have witnessed a swift growth at 53% whereas some of the metro cities have contributed to approximately 66% of the total sales volume.

It is also worth noting that the top five tier III cities have a sales volume of 22% whereas the top five metro cities have contributed to 90% of the sales order. Earlier the traditional metro cities were considered to be the focal points of sales but post Covid 19, there has been a reversing trend. All those areas in the Tier III cities apart from the above mentioned ones have seen a growth of 31%.

At present, with regards to the consumer demand, there has been a contribution of around 66% from tier II cities and will continue to grow in the coming years. As per the statistics, the sectors that showed phenomenal growth compared to the sales volume of previous year have been beauty and wellness with an surprisingly elaborate contribution of 130% followed by agriculture, FMCG, health and pharma.

Lack of availability of resources offline, fear of getting infected, challenges of financial instability post lockdown has led to a tremendous shift in the consumer behaviour and a rush of online customers leading to 66% of online demand for products.

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