



International Journal of Multi Disciplinary  
Research and Technology  
ISSN 2582- 7359 Peer Reviewed Journal  
Impact Factor 6.328  
www.ijmrtjournal.com

One Day Online International Conference on ENVISIONING A SUSTAINABLE FUTURE

75  
आज़ादी का  
अमृत महोत्सव



Smt. P.D. Hinduja Trust's  
**K.P.B. Hinduja College  
of Commerce**  
NAAC Re-Accredited with 'A+' Grade, CGPA : 3.59

Internal Quality Assurance Cell  
(IQAC) & Research Cell

In Collaboration with  
**INTERNATIONAL  
ASSOCIATION  
FOR THE PROMOTION OF  
ASIA-AFRICA RESEARCH**

Organizes  
**One Day Online  
International Conference  
on**

**ENVISIONING A  
SUSTAINABLE FUTURE**

25<sup>th</sup> April, 2022



# **Envisioning A Sustainable Future**

**International Journal of Multidisciplinary Research and Technology**

**ISSN 2582-7359**

**Peer Reviewed Journal**

**Impact Factor 6.328**

**Edition : 2022 (Special Issue)**

**MRP : 500/-**

**Publisher**

**Taran Publication**

**[www.Taranpublication.com](http://www.Taranpublication.com)**

**[www.ijmrtjournal.com](http://www.ijmrtjournal.com)**

## **Patron's Message**

It is an honour for the institution to host a One Day Online International Research Conference on 'Envisioning a Sustainable Future'.

Creating a sustainable future is the need of the hour for us and our future generations to exist. With the academic inputs and the deliberations offered by this conference, I am certain new avenues of thoughts about building a sustainable future can be explored and new ideas generated.

I take this opportunity to thank the Principal and the organizing committee for initiating this academic exercise and I convey my best wishes to the participants as well.

## Principal's Message

The task of creating an environment where not only the present, but the future of human beings can be taken care of, has been one of the prime focus of all studies and research – past and present. It is with this idea that KPB Hinduja College of Commerce along with The International Association for the Promotion of Asia –Africa Research has developed the idea of One Day Online International Research Conference on 'Envisioning a Sustainable Future'.

This conference will an opportunity for academia, research scholars and working professionals to explore, discuss and highlight their thoughts, research ideas and findings on the numerous sub themes offered under the conference . It is only when divergent ideas and new avenues are explored that the concept of sustainable future can become a reality.

I warmly welcome all the delegates whose active contributions to this conference have made the conference a success.

I also wish to thank the college organizing committee, staff and members, without whom this conference would not have been a success.

**Principal**

**Dr. Minu Madlani**

## **Editor's Desk**

The K.P.B. Hinduja college is conducting a One Day Online International Research Conference on 'Envisioning a Sustainable Future' on 25 April 2022. This conference is an example of how various sectors like Information and Technology, Tourism, Environmental Sustainability, Women's Empowerment, Startups and Entrepreneurship, CSR and others need to work in tandem to create a sustainable future. This conference provides a great opportunity to researchers, teacher educators, teachers, social scientists and industry professionals around the world for presenting, deliberating and exploring of research based knowledge, experiences, new advancements, research results and innovations in the respective fields.

**Dr. Rashmi Maurya**

**Conference Secretary**

## INDEX

S. No.	Content	Page No.
1.	<b>IMPACT AND DEVELOPMENT OF ONLINE EDUCATION (E-LEARNING) IN INDIA.</b> <i>Bushra Qureshi</i>	6
2.	<b>BUILDING A SUSTAINABLE FUTURE INFORMATION TECHNOLOGY</b> <i>Prof. Shahid Pervez Iqbal Ahmed, Prof. Dr. Ansari Mohd. Nasir</i>	16
3.	<b>A STUDY ON THE MENTAL HEALTH IMPACT OF COVID-19 ON THE GENERAL PUBLIC AND HEALTHCARE WORKERS IN MUMBAI</b> <i>Mr. Jino Johnson, Prof. Dr. Mamatha D'Souza</i>	22
4.	<b>A STUDY ON SATISFACTION OF STUDENTS IN MUMBAI TOWARDS ONLINE MODE OF LECTURES CONDUCTED DURING THE COVID-19 PANDEMIC PERIOD.</b> <i>Dr. Megha Somani, Mrs. Shailashri Uchil</i>	35
5.	<b>ROLE OF WORK LIFE BALANCE IN WOMEN EMPOWERMENT</b> <i>Dr. Rashmi Maurya, Dr. Antara Sonawane, Dr. Jagruti Darji</i>	43
6.	<b>THE ROLE OF EMOTIONAL INTELLIGENCE AND ITS EFFECT ON STRESS MANAGEMENT – AN ASPECT OF MENTAL HEALTH AMONGST STUDENTS.</b> <i>Sadiya Fuggawala , Navnita Meghani</i>	51
7.	<b>START –UPS &amp; ENTREPRENEURIAL GROWTH AMID PANDEMIC</b> <i>Prof. Ritu Kashyap</i>	61
8.	<b>SUSTAINABLE FINANCE A KEY TO CLIMATE CHANGE</b> <i>Dr. Sheetal Mody</i>	67
9.	<b>WOMEN EMPOWERMENT: THE BOND BETWEEN THE PAST &amp; CURRENT SCENARIO</b> <i>Dr. Koyel Mukherjee</i>	71
10.	<b>DIGITALISATION OF HEALTHCARE DATA AND PRIVACY CONCERNS</b> <i>Dr. Rommani Sen Shitak</i>	79

# IMPACT AND DEVELOPMENT OF ONLINE EDUCATION (E-LEARNING) IN INDIA.

BUSHRA QURESHI

## ABSTRACT:

*Over a period of time it is found that different sectors of economy have changed including education sector. Unlike any other sector, education sector has seen many evolution and changes. Education system changed from Guru-Shishya Parampara to class room teaching, then teaching with the help of projectors or LED and now its online teaching classes or teaching through E-Learning portals or Web Based E-Learning (WBEL). It has been seen from the past several years that online education system or E-Learning system has emerged as a powerful contender for new education system. From the recent past it has been found that several online courses have been conducted to educate millions of people around the globe on various topics. In spite of difference in culture and language and diverse population E-Learning system has gained a lot of popularity increase in affordability and purchasing power of Indians. The only reason for growth in E-Learning system is drastic change in information technology and technological improvements. This article aimed at examining the impact of E-Learning or Web Based E-Learning (WBEL) in modern India Education System.*

**Keywords:** Education, E-Learning, Web Based E-Learning (WBEL), Information Technology, Purchasing Power, Education System.

## 1. INTRODUCTION :

India is a vast country having diversified culture, heritage, language, class of population and education system. We have various schools following Gurukul system to schools having world class infrastructure. We have some schools conducting in-house activity for physical and overall development of students where as some students are still struggling for basic educational facility such as books and stationary. Some schools and colleges have

international tie-ups sending students to different country for study or for orientation programme. There are great variations in quality education due to reasons like social background, poverty, difference in standard of living, lack of teacher training programme etc.

Indian education system is one of the largest education system in the world and holds key position in global education industry. There are 10,30,996 schools in India, out of which 8,53,184 are in urban and 1,77,812 are in rural area. there are total number of 907 universities in India in which, 399 are state universities, 126 deemed to be universities, 48 central universities and 334 private universities. Irrespective of such a large number of school, colleges and universities, there is still a ray of growth and development in education system. However there is still a lot of potential in Indian education system.

Journal of Contemporary Issues in Business and Government Vol. 27, No. 1, 2021

P-ISSN: 2204-1990; E-ISSN: 1323-6903

<https://cibg.org.au/3451>

online education market is forecasted to be USD 18 billion by 2022, growing at a CAGR of around 20% over a period of five year.

WBEL or online learning is paper less and electronic education system with the use of information and technology. It is a combination of learning service and technology. It is learning educational curriculum outside traditional class room with the use of electronic technology. As we are aware that that technology has almost taken every part of our life and is considered as path breaker.

### **Background Of The Research Study:**

As we are aware that Internet is having plenty of knowledge, therefore it is for the betterment of students to open the ocean of knowledge. This can be possible only by the use of Information Technology (IT) and World Wide Web (WWW) as a medium of delivery. E-Learning portals has a benefit of flexible place, time and medium of use. In a country like India, where basic or higher education is not possible due to many constrains like financial and social problems, online education system helps people to access to world class education system. As India is the second largest populated country in world, there is a huge requirement of E-Learning or online education system. With a view to complete the demand, India is a home of many E-Learning portals and WBEL system. Good bye teachers, class room and books, E-Learning is now a new trend in education system. E-Learning can be contemplate at two stages. 1<sup>st</sup> state is educator level where as 2<sup>nd</sup> stage is trainer level. Elementary and higher education falls under 1<sup>st</sup> stage where as 2<sup>nd</sup> stage is used by companies and business to train and develop their workers or employees.

The benefit of E-Learning is not only restricted to schools and colleges but now a days it extends to corporates and companies also. Corporates also use E-Learning portals for training and development of their employee. As far as India is concerned, there are many constrains in education system like population, income and social backwardness, student teacher ratio,

WBEL prove to be the game changer. Web Based E-Learning portals are expected to grow much faster because it can be used with the help of basic electronic devices like computer,

mobile phones, tablets, smart phone etc. WBEL provides live interactive classes, recorded videos and different modules as per the requirement of client and students. Through WBEL participant can ask any query and questions online and gets answers and interactions with

other students online. In this research paper Web Based E-Learning (WBEL), E-Learning, Online Learning, Web Portal have been used interchangeably.

## **2. RESEARCH METHODOLOGY**

This research study is based in the secondary data. The said secondary data is collected from different sources such as reference books on E-Learning, Web Portals, Online Education, Distance Learning.

For this research study, the secondary data is also collected from various magazines and journals which are connected to E-Learning, Web Portals, Online Education, Distance Learning.

For the said research study the secondary data is also collected from various websites, search engine and online information providers.



**Objectives:**

The objective of E-Learning differs from person to person. These objective may be general or specific. General objective are common for every person but specific business vary from one person to other. Some of the most commonly objectives of this research paper are as follows:

1. To study the meaning and concept of E-Learning.

Journal of Contemporary Issues in Business and Government Vol. 27, No. 1, 2021

P-ISSN: 2204-1990; E-ISSN: 1323-6903

<https://cibg.org.au/3452>

2. To study the different E-Learning portals in India.

3. To study the impact of E-Learning in India

4. To study the benefits and objectives of E-Learning

5. To study the barriers, demerits and limitations of E-Learning

6. To study the growth prospects and future of E-Learning in India.

**Hypothesis Of The Research Study:**

WBEL or online learning is paper less and electronic education system with the use of information and technology. It is a combination of learning service and technology. E-Learning portals has a benefit of flexible place, time and medium of use. For the use of Web Based Learning System, we need not to have access to school and spend a lot of time and money, all we need is a good internet connection and computer system, mobile or laptop.

The research study was carried out with following hypothesis in view:-

1. E-Learning is very helpful for country like India which consists of large amount of youth.
2. It provides better utilization of Information Technology.
3. The impact of E-Learning in Indian Education System is positive.
4. With the increase in the use of internet day by day, the scope of E-Learning is wide.
5. There are many growth prospects of WBEL in India with some limitations

**Types Of E-Learning Models:**

There are basically 3 types of E-Learning i.e. **Synchronous, Asynchronous and Blended Learning.**

1. Synchronous means at the same time, so in Synchronous type of E-Learning, there is a interaction between participant and instructor via Web Bases Portal.
2. Asynchronous means not at the same time, so in Asynchronous system of E-Learning the portal allow the participant to complete the syllabus or training without interaction with the trainer or instructor.

3. Blended learning is a combination of E-Learning tool with traditional class room teaching. In Blended learning students can enjoy classroom experience with interaction with teachers and students via actual classroom. Blended E-Learning has benefits of face to face interaction with social benefits of classroom training and different teaching techniques

### **Some Of The Different E-Learning Portals:**

There are numerous E-Learning portals around the globe. Some of the famous E-Learning portals working in India are as follows:

1. Indiaeducation.net
2. Khan Academy
3. BYJU'S
4. VEDANTU
5. UNACADEMY

Journal of Contemporary Issues in Business and Government Vol. 27, No. 1, 2021

P-ISSN: 2204-1990; E-ISSN: 1323-6903

<https://cibg.org.au/3453>

#### **1. Indiaeducation.net:**

Is the largest virtual network of 45 educational portals covering more than 450 domains. It is one of the biggest and largest network with portals from 28 states, 6 union territories and 4 metros in India. This portal is basically designed to provide education at all levels. Some of the area of operation are school education, higher education and distance education.

Website: [www.indiaeducation.net](http://www.indiaeducation.net)

Subjects offered:

- i. Management
- ii. Engineering
- iii. Law
- iv. Medical
- v. Education
- vi. Mass communication
- vii. Science
- viii. Commerce
- ix. Finance
- x. Animation

## **2. Khan Academy:**

Formed as a non profit organization, Khan Academy is providing world class education to everyone on various subjects. Its lectures are produced in short videos in English and can be translated into 36 different languages. To provide specialized contents, they partnered with NASA, The Museum of Modern Art, MIT, The California Academy of Science. Started from one man tutorial, now it has grown into 150 people organization.

Website: [www.khanacademy.org](http://www.khanacademy.org)

Subjects offered:

- i. Math
- ii. Science
- iii. Engineering
- iv. Computing
- v. Arts
- vi. Humanities
- vii. Economics
- viii. Finance

## **3. BYJU's**

Founded in year 2011 as Think and Learn Pvt Ltd. At foundation stage, the main focus is on development of strong team of experts across media, contents .

develop world class learning contents. In year 2015, BYJU's launched an In the year 2016, it became 1<sup>ST</sup> Asian company to receive investment from Chan-Zuckerberg Initiative (CZI).

Website: [byjus.com](http://byjus.com)

Subject offered:

- i. CBSE
- ii. ICSE
- iii. NEET
- iv. JEE
- v. CAT
- vi. Commerce
- vii. Bank
- viii. NCERT
- ix. UPSC

---

## x. PHYSICS

### 4. VEDANTU

Vedantu is a LIVE online interactive platform that enables personalized learning. Vedantu uses technology to bring together teachers and students on a single platform to enable live learning between them. On Vedantu student can select from a huge pool of quality teachers. Vedantu has technology tools which enables teachers to provide LIVE teaching to students in an interactive manner using whiteboard, audio and video technology. The company is very focused on technology and has created in-house product which is very optimized for low bandwidth conditions.

It is a venture by three IITian friends - Vamsi Krishna, Pulkit Jain and Anand Prakash. These three friends turned entrepreneurs have an extremely deep domain expertise in education. They did their first venture in education, Lakshya, in 2006 which later got acquired by a listed company called MT Educare (Mahesh Tutorials) in 2012. As part of Lakshya the founders taught and mentored more than 10,000 students and trained more than 200 teachers between them.

### 5. UNACADEMY

Unacademy aims to build the world's largest online knowledge repository for multi-lingual education. We use technology to empower great educators and create a community of self-learners. Our vision is to partner with the brightest minds and democratise education for everyone looking to learn. Join us in our journey to change the future of education.

Visit us at [unacademy.com](http://unacademy.com)

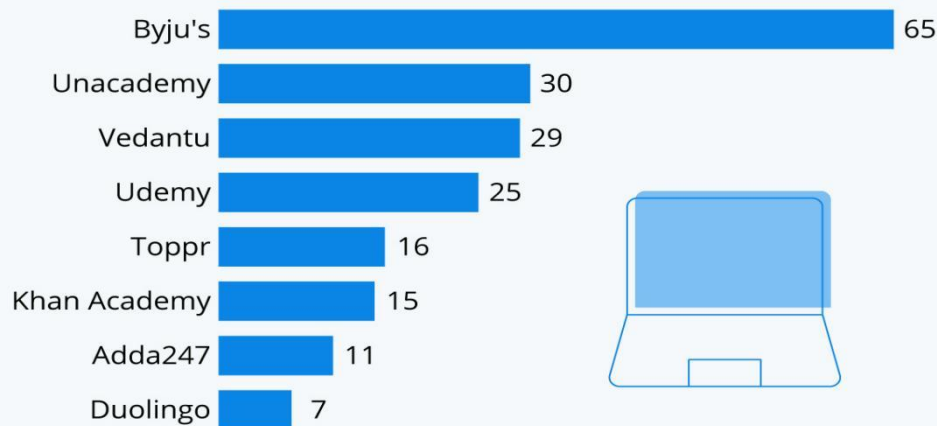
#### **advantages of e-learning:**

Out of the several advantages, one of the most important advantage is that with the use of E-Learning, user can access E-Learning portal at any time and according to their comfort. It can also be accessed from any browser or on any platform or device. Flexibility of time and place make E-Learning portal and services more popular amongst youth and professionals. One of platforms have been in heavy use as homeschooling continues in many states around India. According to a survey by YouGov, Indian startup Byju's is the most popular tool in India with 65 percent of parents saying their children have used it. Runner-ups Unacademy and Vedantu only were used by around 30 percent of children, according to their parents.

The survey by You Gov also revealed that around half of Indian parents did not feel comfortable sending their kids back to school. 48 percent said that their kids were learning well by using the online platforms independently. 55 percent of parents said that their children were now subscribed to an online learning platform, up from 40 percent before the pandemic.

## Byju's Is the Most Popular E-Learning Tool in India

Share of Indian parents who said their children were using the following e-learning platforms (in percent)



Representative survey of Indian adults carried out June 16-22, 2020

Source: YouGov



statista

### ADVANTAGES OF E- LEARNING

the main advantage is that updated information can be accessed from any part of the world only with the help of internet. Even user from remotest part of the world can access and learn updated learning material through E-Learning portals. Its provides great advantages to working Professionals by providing flexibility in learning. Many certification courses are easily available which are earlier not possible with travelling from one place to other.

### DISADVANTAGE OF E – LEARNING

Beside many advantages, there are some disadvantages of E-Learning are also there, one of them is Limited Internet connection. In a country like India, connection of internet is limited in respect of geographical expansion. There are many remote areas of India where there is no internet connection as well as there are many places where there is slow or limited connections and speed. Low connection, slow downloading and uploading speed, bad quality of audio and video are some of the big problems of E-Learning services in India. As E-Learning portals are static in nature, limited interactions between educator and learner is often leads to great disadvantages of E-Learning portal. People also resist to change from traditional way of learning to Web Based Learning. E-Learning portals and providers find it difficult to reach end users as it is difficult to convince users to deliver their E-Learning access. Not all courses could be delivered through Web Portal as some topics or courses requires more personal attention and touch. Many E-Learning courses are outdated as they were developed 10 years back and required regular update according to changing environment. It requires improvements from time to time.

**current state of e-learning in india:**

Due to new-startups, new technology and higher internet speed and availability of smartphones, the dimension of online learning is growing manifold. Government of India is also making endless efforts to provide access to online learning available to students in every corner of the country. Low internet tariff, cheap mobile phones and easily availability of SIM cards provides stimulus to the effort of government. Today in India we have online courses from primary level to professional level. Large number of training institutes and start-ups companies are provide wide variety of services in E-Learning. many service providers are providing video lectures along with study material. Where as many focuses on providing

access to subjects anytime and anywhere through convenience based training and learning system. Another reason for growth of E-Learning in India is requirement to update in skill and knowledge.

For example a software professional having experience of 10 years, also is in

Journal of Contemporary Issues in Business and Government Vol. 27, No. 1, 2021

P-ISSN: 2204-1990; E-ISSN: 1323-6903

<https://cibg.org.au/3456>

needs to update his or her skill in the field of programming language, data analytics, cloud computing etc. Increment in salary, promotion, better working condition also insists people to update their skill and knowledge and this can be achieved only with the help of E-Learning resources.

In India, lot of start-ups are already setting their business in the field of E-Learning or online learning. many startups like Learn Social, Simplilearn and Intellipaat are playing a role of aggregator and aiming mid-level professionals to provide them access to E-Learning resources. Simplilearn, the Bengaluru based start-up is currently providing near about 200 certification courses in the field of Quality Management, Financial Management, Project Management, Information Technology etc. the company has trained over 2,25,000 professionals across the globe.

According to CEO of Intellipaat, Diwakar Chittora, after starting its operations in 2011, the company is witnessing growth of almost 1000%. Intellipaat is providing online IT training including corporate training and more than 80 technological courses worldwide. Learnsocial, six year old Hyderabad based company is working on an aggregator model. The aim of company is to become Amazon of online learning. mid-level professionals and students are targeted customers of company. According to founder, Raju Vanapala, company has above

2,00,000 users and trained over 1,500 learners.

**CHALLENGES FACED BY E-LEARNING IN INDIA:**

From last 50 years, Government of India is providing immense support and funds to make India, world's largest system of Education. In attaining this objective government is facing many challenges. Unable to maintain high standard of education, slow pace of growth of technology and knowledge, awareness amongst people, rigid bureaucracy are some of the constrains of development in E-Learning. creating awareness amongst people staying in rural parts of country, lack of infrastructure, poor availability and connectivity of internet is a major challenge in development of E-Learning system in India. Difference in culture, gender, religion and level of literacy is one of the major challenges faced by E-Learning providers.

Due to religious or spiritual difference, some contents, although important for courses, may some time unacceptable with certain sections of the society. Geographical difference creates major challenges specially in Live Classes because of difference in time zone.

### **FUTURE OF E-LEARNING IN INDIA:**

As far as E-Learning industry is concerned, India has major role to play at International level. Presence of world's one of the best training professionals and educational infrastructure, makes India, world's best E-Learning provider. As India is already a leader in IT Industry, the future of E-Learning portal is bright. Through regulation and financial support, Government of India is taking every measure to boost E-Learning environment in India. Not only government but many private sector participants are also taking every step to provide pace to E-Learning system in India. All these measure and steps make India as attractive destination for E-Learning industry. Many foreign company are planning to setup their business of E-Learning system in India.

The future of open university are also very bright in India. Till date there are more than 10 open universities in India providing more than 500 courses. **Indira Gandhi National Open**

University (IGNOU) is the pioneer and biggest open university in India. In order to promote Distance Education, Distance Education Council has been set up to promote and develop

Distance Education in India. Distance Education is also expanding its scope and pace in India, as it is 50% less in cost and better and high quality education could be accessed without leaving home and profession. Expansion of bandwidth, expansion of network and towers, providing low cost internet are some of the measures taken by Government and

Journal of Contemporary Issues in Business and Government Vol. 27, No. 1, 2021

P-ISSN: 2204-1990; E-ISSN: 1323-6903

<https://cibg.org.au/3457>

Private network service providers to expand the scope of E-Learning Services in India. With the increase in number of mobile phone users, awareness amongst youth, we can say that future of E-Learning services are very bright in India.

### **3. CONCLUSION:**

From the above study, conclusion regarding Impact and development of online Education (E-Learning) system in India are as follows:

- The future of Education in coming period is E-Learning or web-based learning
- It is boon to the society as it could be accessed by every section of the society.
- Government needs to expand the scope of online education and should create
  - awareness amongst different segment of the society.
  - E-Learning is not only beneficial for students but also helpful for teachers and professionals to upgrade their knowledge and skills.
  - In a country like India, where there are diversification in language, religion, age and knowledge, one need to focus on marketing of E-Learning system. More marketing will create new customers for E-Learning Providers.

- Vast expansion of internet, mobile phone and other electronic gadget users, we can traditional learning system can be replaced by E-Learning system in near future.
- In a country like India, level of economic development, education and literacy can be achieved with the help of expansion of E-Learning system.
- Not only to students, teachers, professionals but online education will also provide
- diversified opportunity to corporates to expand their business opportunities.

## REFERENCE:

1. Anand Tamrakar, Kamal K. Mehta (2011) "Analysis of Effectiveness of Web based E Learning Through Information Technology" International Journal of Soft Computing and Engineering (IJSCE) ISSN: 2231-2307, Volume-1, Issue-3
2. Gaikwad Arun, Randhir Vrishali Surndra (2016) E Learning in India: Wheel of Change International Journal
3. [www.indiatoday.intoday.in/education/story/digital-learning-taking...india/1/774514.html](http://www.indiatoday.intoday.in/education/story/digital-learning-taking...india/1/774514.html)
4. Arun Gaikwad, Vrishali Surndra Randhir (2016). "E-Learning in India: Wheel of Change" International Journal of e-Education, e-Business, e-Management and e-Learning, Volume 6
5. <https://indianexpress.com/digital/education/can-digital-educate-india/> Written by Maya Escueta Updated: Aug 17, 2015.
6. A.S. Sathish Kumar, emerging Technology on smart Class teaching in school education A literature review – IJSR Vol 3, issue 8 Aug 2014.
7. Abdullah Tubaishat and Azzedine Lansari, "Are Students Ready to Adopt E-Learning? A Preliminary E-readiness Study of a University in the Gulf Region", IJICT, Vol 1, No. 5, September 2011.
8. <https://elearningindustry.com/elearning-statistics-and-facts-for-2015>
9. Dr. Shobana Nelasco, Mr. A. Nilasco Arputharaj & Er. G Alwinson Paul, —e-Learning for Higher Studies of India, Fourth International Conference on eLearning For Knowledge-Based Society, November 18-19, 2007, Bangkok, Thailand.



# BUILDING A SUSTAINABLE FUTURE

## INFORMATION TECHNOLOGY

### (AN OVERVIEW OF COMPILER CONSTRUCTION)

**\*Prof. Shahid Pervez Iqbal Ahmed**

*M.C.S. , M.B.A. (Information System)*

*(Asst. Prof. Department of Information Technology and Computer Science,  
Akbar Peerbhoy College of Commerce and Economics, Grant Road (E), Mumbai.400 007)*

**\*\*Prof. Dr. Ansari Mohd. Nasir**

*M.C.A*

*(Asst. Prof. Department of Information Technology,  
K.P.B. Hinduja College of Commerce, Charni Road (E), Mumbai.400 007)*

#### ABSTRACT:

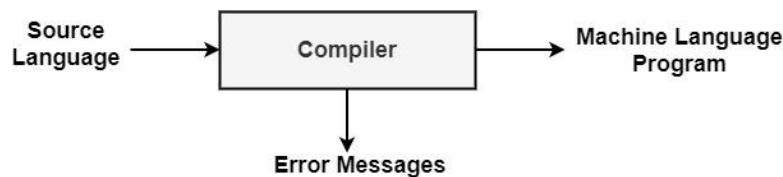
*In computing field, the research in compiler construction is one of the basic researches. Researchers in this domain try to understand how computer programming languages are associated with computer system. The high level language program (source code), which are human readable are translated (or converted) to machine readable (target code) by the compiler. These translated codes are efficient and optimized in terms of program execution time and its storage space without changing the meaning of source program. The aim of this paper is to explain, what is a compiler? And gives the overview of different phases involved in translating high level programming language statements.*

**Keywords:** HLL, Compiler, Phases of compiler, Front end phase, Back end phase

#### 1. INTRODUCTION

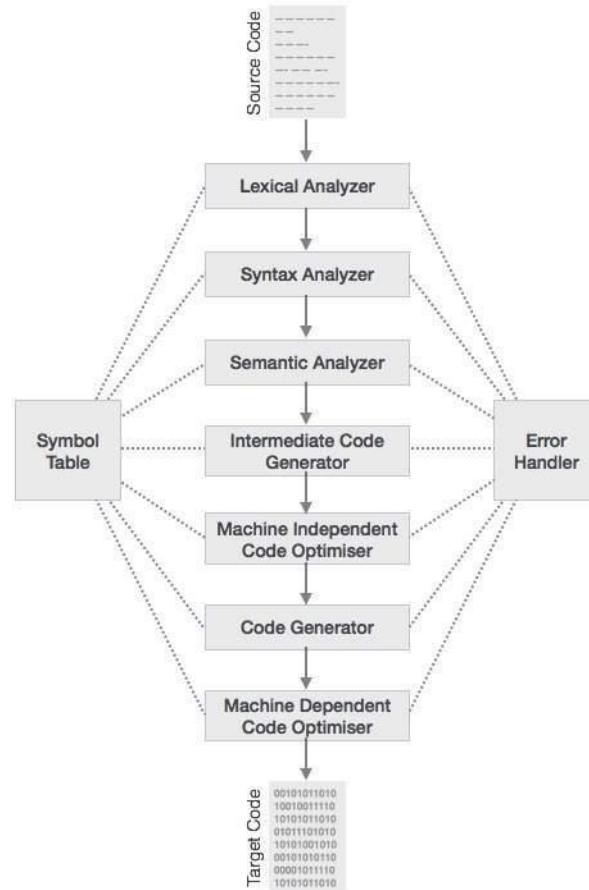
High level languages are the computer programming languages that looks to natural language and designed to reflect the problem requirements. The HLL enables programmer to write program which are more or less independent of computer. HLL is human friendly because it uses English like statements and some mathematical symbols in its instructions. It is easy to learn and understand by the programmer. The program written in HLL is in more readable form with and easy-to-read syntax. Some HLL are Python, Ruby, C#, Java, Visual Basic, PHP etc.

A compiler is a special program that processes statements written in a particular programming language and turns them into machine language that computer processor uses. The meaning of source code does not change after translation. A compiler is system software that converts source code into intermediate code which later transformed into target code without altering the meaning of the source code.

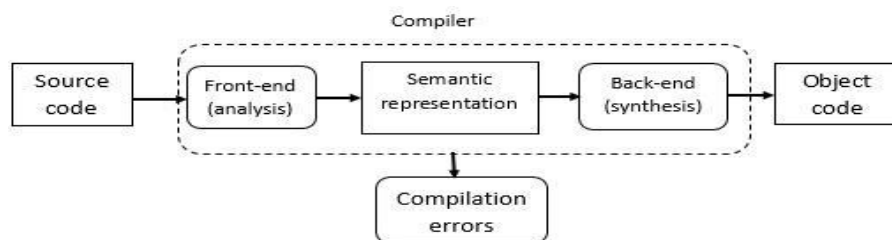


After compilation process, the result obtained is efficient in execution time and memory space. The operating system is the interface between user and computer to facilitate user to achieve its task. The compiler performs many activities during compilation process. Detection of errors in source code is

major activity in compilation process. The different types of errors (runtime error, logical error, syntax error etc.) are identified. The entire compilation process consists of two parts: the back end and front end. The phases of compiler are:



Each phase of compiler performs a specific task. Following is the abstract view of compiler.



### 1.1 Features of Compiler

- It compiles the program speedily
- It keeps the correct meaning of machine code
- Program compile time is proportion to program size (LOC i.e. line of code)
- Good error detection, reporting and handling
- Source code is checked correctly according to grammar

### 1.2 Types of Compiler

Generally there are three types of compilers used in translating HLL to machine language.

- a) One-pass compiler
- b) Two-pass compiler
- c) Multi-pass compiler

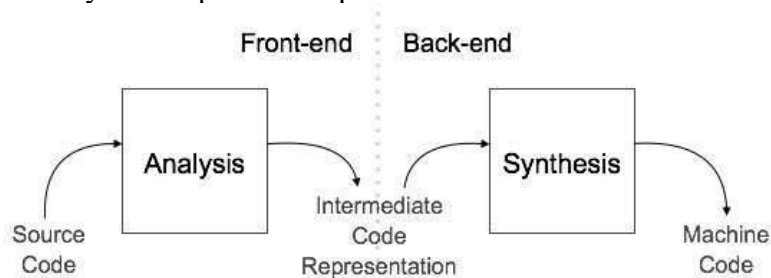
## 2. ELEMENTS OF COMPILER:

Compiler operates in various phases each phase transforms the source program from one representation to another. Each of these phases performs different set of activity. Every phase takes inputs from its previous phase and forwards its output to the next phase. A data structure called Symbol Table is used to store the result of each phase activity. At the same time, if an error occurs during any phase activity, then error handler routine keeps track of such errors.

There are six phases in compilation process, which are grouped in two categories as:

### 2.1 Analysis Phase:

It is also known as the front-end of the compiler. The analysis phase of the compiler reads the source program, divides it into core parts and then checks for lexical, grammar and syntax errors. The analysis phase generates an intermediate representation of the source program and symbol table, which should be fed to the Synthesis phase as input.



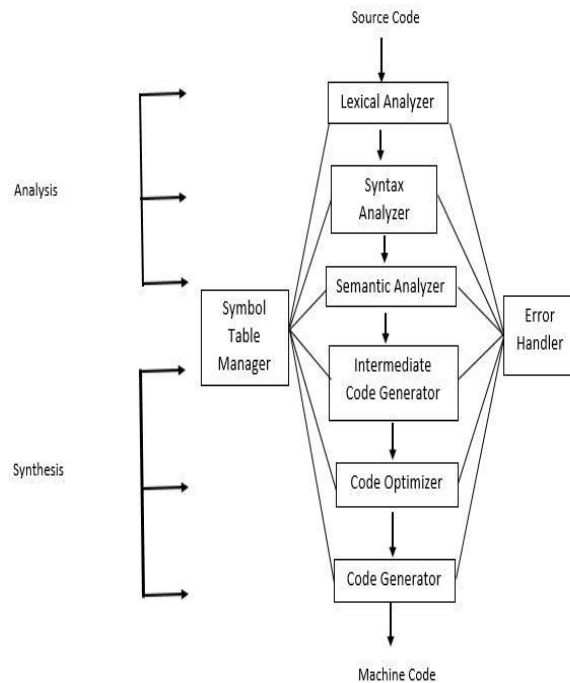
Analysis phase consists of

- a) Lexical Analysis
- b) Syntax Analysis
- c) Semantic Analysis

### 2.2 Synthesis Phase:

It is known as the back-end of the compiler, the synthesis phase generates the target program with the help of intermediate source code representation and symbol table. Synthesis phase consists of,

- a) Intermediate Code Generation
- b) Code Optimization
- c) Code Generation



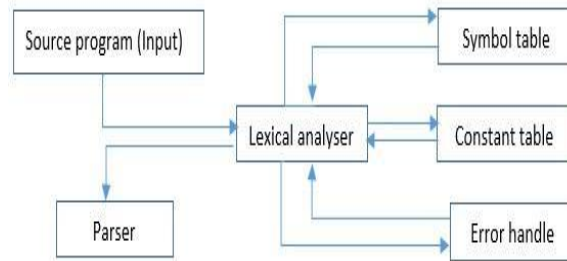
### Lexical Analysis

Lexical Analysis is the first phase in compiler construction. It is carried out by a program called lexical analyzer. This phase is also known as scanning, and the program used is called scanner. The complete source program is scanned from start to end character by character basis to find the lexical item called tokens.

A token may consists of single character or sequence of character. The token may be an identifier, reserve words, operators, literals etc. The scanner reads source program and separate the tokens. These tokens are passed as an input to next phase (parsing). A lexical analyser may be implement using Regular expression from automata theory and deterministic finite automata (DFA). A Regular expression is used to specify the token while deterministic finite automata are used to recognise the token. Let us analyze the following.

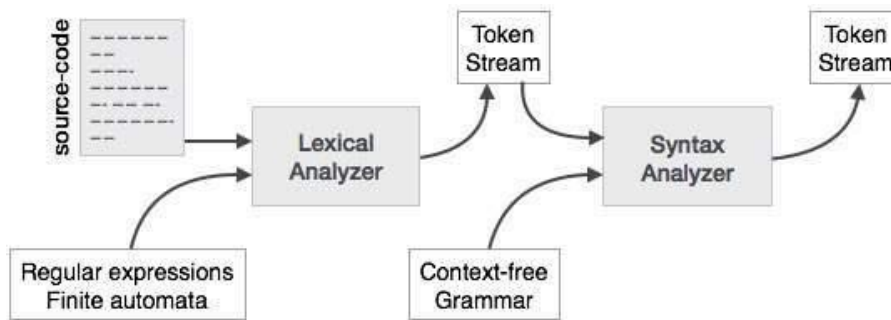
$$\text{average} = \text{sum} / 10$$

Lexeme (collection of characters)	Tokens (category of lexeme)
Average, sum	Identifier
=	Assignment operator
/	Division operator
10	Integer constant

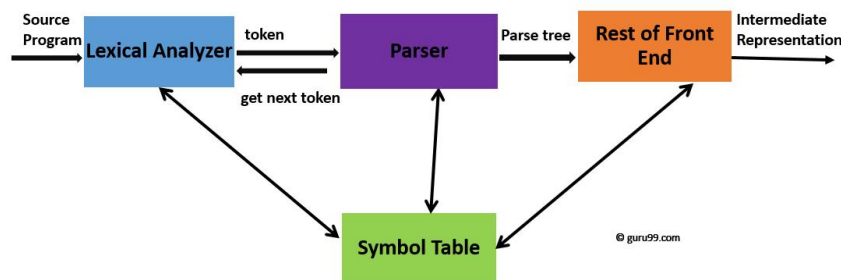


### Syntax Analysis

The second phase in compilation process is syntax analysis (also known as parsing). The program performing syntax analysis is called syntax analyzer (or parser). It takes tokens as input and constructs parse tree (or syntax tree). The goal of parsing is to determine the syntactical validity of a source string.

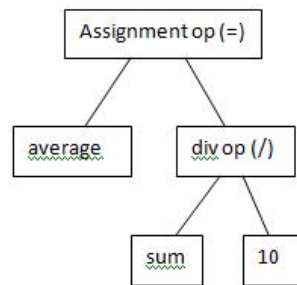


The parser performs two tasks i.e., parsing the code, looking for errors and generating a parse tree as the output of the phase. Syntax analyzer checks that given program fulfills the rules implied by CFG (Context Free Grammar). The parser creates parse tree of the source program statement, otherwise displays error messages.



The syntactic specification of program statement

“average = sum / 10” is



### Semantic Analysis

This is the third stage in a compiler construction. Semantic analysis check for semantic errors in the parse tree produced by the syntax analyzer. Examples of semantic errors are data compatibility (data type), undeclared variable use and many more.

### Intermediate Code Generator

In this phase, an intermediate code of the machine-oriented is generated. It represents a program for some abstract machine. The intermediate code is between a program written in human-oriented and machine-oriented.

### Code Optimizer

The intermediate code generated in the previous stage is been optimized in this stage. The structure of the tree that is generated by the parser can be rearranged to suit the needs of the machine architecture to produce an object code that runs faster. The optimization is achieved by removing unnecessary lines of codes.

### Code Generator

Code generator is the last phase of a compiler construction process. The code generator uses the optimized representation of the intermediate code to generate a naïve machine code. This stage depends on the machine architecture.

## 3. CONCLUSIONS

This paper explains what a compiler is and gives an overview of the steps involved in translating a programming language into object code. A compiler translates source code into object without tempering with the meaning of the source code. The steps involved in translating a language are six namely; lexical, syntax, semantic, intermediate representation, code optimizer and code generator. Each of these phases performs a single task.

## REFERENCES

**Compilers: Principles, Techniques and Tools” by Alfred V Aho and Ravi Sethi**

<https://www.techtarget.com/whatis/definition/compiler>

[https://www.tutorialspoint.com/compiler\\_design/compiler\\_design\\_phases\\_of\\_compiler.htm](https://www.tutorialspoint.com/compiler_design/compiler_design_phases_of_compiler.htm)

<https://www.guru99.com/compiler-design-phases-of-compiler.html#:~:text=Six%20phases%20of%20compiler%20design,compiler%20scans%20the%20source%20code>

[https://www.tutorialspoint.com/compiler\\_design/compiler\\_design\\_architecture.htm](https://www.tutorialspoint.com/compiler_design/compiler_design_architecture.htm)

<https://binaryterms.com/lexical-analysis.html>

## A STUDY ON

# THE MENTAL HEALTH IMPACT OF COVID-19 ON THE GENERAL PUBLIC AND HEALTHCARE WORKERS IN MUMBAI

**MR. JINO JOHNSON**

student (Bachelor of Management studies), Don Bosco College

**PROF. DR. MAMATHA D'SOUZA**

## CHAPTER 1

### 1.1 Introduction

The COVID-19 pandemic was very sudden and it was unexpected. The first known cases occurred in late December, 2019, and WHO declared it a pandemic on March 11, 2020. It has reached the level of a pandemic, affecting countries all across the world resulting in over 3.46CR confirmed cases and 4.69L deaths. Many studies and evidence suggest that symptoms of anxiety and depression (16–28%) and self-reported stress (8%).

COVID-19 resulted in an increase in risk factors for mental health problems. Together with unpredictability, uncertainty, lockdown, the new work from home stress and physical distancing eventually lead to social isolation, loss of income, loneliness, inactivity, limited access to basic services, alcohol, and online gambling, and the sudden death of family and friends as well. The sudden variations in the economy caused by COVID-19 lead to unemployment, financial insecurity, and poverty, which eliminated access to health services (especially in insurance-based systems), which all led to the adverse effects on physical and mental health of people.

These economic factors did induce mental health problems in previously healthy people and negatively affected those people with pre-existing mental disorders. Sooner or later, health systems will be faced with a massive demand to address these COVID-19-related mental health needs. International organisations, including WHO, also highlight the integration of mental health and psychosocial support into the COVID-19 outcomes.

### 1.2 Scope of Study

This research highlights the mental health challenges posed by COVID-19 on the common public and healthcare workers of India, irrespective of gender, caste, creed and class. The sample will contain audiences from various age groups, including Adolescence, Teenage, Adulthood and old age. The mental health effects specifically do not only include the medically examined effects, but also the unexamined effects faced by the subject audience in a general manner. This research paper also describes the mental health needs, the various reasons for the mental health situation of the individual, The emotional trauma faced, the changes in the subject's lifestyle, the demerits faced in subject's personal life and from the society, the ready attitude to face another wave if the same may

arise in near future or later, and the unique outcome measures that can help to turn this crisis into an opportunity for improvement.

### **1.3 Significance of the research topic**

#### 1. Medical diagnosis

This study helps in determining the medical stability hence will help the Healthcare department of the respective state governments to provide appropriate medical assistance.

#### 2. Economic Impact

This study shows how mental health plays a vital role in sustaining the economy of the society and hence common families too can implement organised budgeting, explained through this study.

#### 3. Revised Government policies

This study will help the government in revision of different restrictions and rules imposed during the pandemic on the general public and how they were affected

#### 4. Social welfare developments

This element of the study can be helpful for many NGOs to get on the ground and conduct an active drive to resolve the social issues and measures mentioned.

#### 5. Structured work schedule for frontline workers

Solutions can be drawn to formulate a structured schedule for the frontline workers with utmost humanitarian consideration being given to them, which will reduce a majority of mental health issues faced by them.

### **1.4 Limitations of the research topic**

- Will not be covering particularly all categories entitled under front line workers.
- Will be covering only a major part of Mumbai and a minimal part of Navi Mumbai
- Majority from the urban areas than the rural areas
- The medical staff in this study are mostly subjected to private hospitals rather than rural hospitals.

### **1.5 Objectives of the research topic**

1. To study the effects that the mental health / mental condition had on the subject population
2. To understand the conditions / reasons that led to the described mental condition.
3. To study the mentality of the population to overcome the present condition.



4. To analyze the effect of the change in the tedious work routine on the mental health of the frontline workers

## 1.6 Hypothesis

**Statement 1:** Elements affecting mental health

H1: People are aware of the reasons how their mental health has been affected

Ho: People are not aware of the reasons how their mental health has been affected

**Statement 2:** The mental health of the frontline workers

H1: The pandemic has negatively affected the mental health of the frontline workers

Ho: The pandemic has positively affected the mental health of the frontline workers

## 1.6 Variables

- The Independent variables are mental health, Population, Health care workers, geographical location
- The Dependent variable is COVID 19

## CHAPTER 2: LITERATURE REVIEW

**Sarah K. Schäfer, M. Roxanne Sopp, Christian G. Schanz, Marlene Staginnus, Anja S. Göritz & Tanja Michael (2020)** in their study on the Impact of COVID-19 on Public Mental Health and the Buffering Effect of a Sense of Coherence, have broadly classified the population into two categories i.e. is the above average stress group and the below average stress group. This was the first study conducted to examine mental health before and after the COVID-19 outbreak and potential modulatory effects of SOC. It was noticed that the people in Category 1 suffered 15% more traumatic distress than the people in Category 2. It was found out, stress is higher in women and younger respondents. The study also focused on the role of SOC (Sense of Coherence) in the solution to the mental health people faced.

**Ashley Elizabeth Mulletra, Elisabet Vivianne Hafstada, Jan Peter William Hummels, Geir Smedslund, Signe Flottorp, Synne Øien Stensland, Stijn Stroobants, Stijn Van de Velde' Gunn Elisabeth Vist (2020)** in their study on the mental health impact of the covid-19 pandemic on healthcare workers, and interventions to help them, have performed a rapid systematic review to identify, assess and summarise research on the mental health impact of the covid-19 pandemic on HCWs. HCWs reported low interest in professional help, and greater reliance on social support and contact. Exposure to covid-19 was the most commonly reported correlate of mental health problems, followed by worry about infecting others. They assessed the certainty of the estimates of prevalence of these symptoms as very low using "GRADE". There seems to be a mismatch between risk factors for mental health outcomes among HCWs in the current pandemic as well as their needs and preferences.

**Dr. Meenakshi Kaushik (2020)** in her study on the Pandemic COVID-19 and its Implications on Human Life has enlisted the various implications that mankind had to adapt due to the outbreak of the COVID 19. According to the author, One of the severe implications that had a drastic effect on human behaviour was the Everyday news on contaminations, the high end rumours and demise numbers which caused melancholy and uneasiness. According to the study, the students went into a massive depression stage as around 1.725 billion students were terminated from schools across the globe, in light of the pandemic.

**AIESEC Survey Report (2020)** on the Youth and COVID 19 gives a broad outlook on how the pandemic has affected the jobs, education rights and importantly the mental well being of the youth. According to the study Family stress, social isolation, risk of domestic abuse, disrupted education and the mere future uncertainty were the major contributors of negativity in the youth's mental health. The survey found that globally 1 in 2 (50%) of young people aged 18-29 are subjected to anxiety or depression while the further 17% are affected by it. The mental well beings of young people (women than men) were two times affected by anxiety / depression than those who continued to be employed.

**Mike Samar (2019)** in his study on Clinical Depression affecting Mental Health has given a broad idea on how different is Clinical Depression than regular depression. According to the study, Clinical depression is a medical condition that is characterised by a constant feeling of despair and hopelessness. The severity of depression differs from person to person. The Statistics of the study showed that between 20% and 25% of adults have chances of suffering from at least one episode of clinical depression at one point in their lives. The author has clearly given a differentiation between the Depressive Episode and Clinical Depression where depressive episode is because of suffering from situational or conditional sadness due to an external event and the Clinical Depression is suffering due to a serious condition that will have a great impact on life.

**Pamela Smith (2014)** in her study on the MENTAL HEALTH CARE - In Settings Where Mental Health Resources Are Limited. clearly points out the difficulties that the population in the rural areas face, where access to mental health resources has been limited or non-existent. The author classified the different sectors of healthcare providers and also drew out their allopathic interventions. It was found out that the mental health solutions and care, depended on the geographic region and economic status. The study described the indicators of the Mental health globally into 6 factors i.e., Governance, Financing, Mental health care delivery of services, Human resources, Medicines for mental & behavioural disorders and Information systems. The method of Telepsychiatry was raised as the apt solution for this issue.

---

## CHAPTER 3: RESEARCH DESIGN METHODOLOGY

### 3.1 Type of research used

The research conducted by the researcher will be both qualitative and quantitative in nature

### 3.2 Research Design

In this research, a descriptive mode will be followed throughout

### 3.3 Population

The population of the research study will be group of individuals belonging to the general public & healthcare workers from Mumbai & Navi Mumbai

### 3.4 Sampling Method

The researcher will be using the non-probability - snowball sampling method.

1) **Sample size:** The researcher will be studying the research on the sample size of 60 individuals inclusive of the general public and healthcare workers.

2) **Sample area:** The researcher has chosen the sample area as certain areas in Mumbai & Navi Mumbai.

### 3.5 Data collection method

1) **Primary data:** The researcher has collected the data through survey method through various social media handles and questionnaires

2) **Secondary data:** The researcher has collected the data from various research papers, journals, articles, social media posts and relevant web pages

### 3.6 Research instrument/tools

The researcher has used “Google form – An online questionnaire method” as the research instrument for the research.

## CHAPTER 4: DATA ANALYSIS

### DEMOGRAPHICS

<b>AGE</b>	16-25	26-44	45-64	Above 65
Population (in %)	75 %	15 %	1.7 %	8.3 %

<b>GENDER</b>	Male	Female	Others
Population (in %)	23.3 %	76.7 %	NIL

<b>FRONTLINE WORKER</b>	YES	NO
Population (in %)	28.3 %	71.7%

<b>ALCOHOL INTAKE</b>	YES	NO
Population (in %)	18.3 %	81.7%

<b>MORTALITY RATE in close contacts / family due to COVID</b>	YES	NO
Population (in %)	20 %	80%

<b>PROFESSION</b>	Population (in %)
Businessmen	1.7 %
Doctor	1.7 %
Teacher	8 %
HR	1.7 %
Company employee	1.7 %
Hotelier	1.7 %
Journalists	1.7 %
Private tutor	1.7 %
Students	48.4 %
Nurses	25 %
Retired	6.7 %

The sample included people from various age groups ranging from 16 to above 65 years majority being females. 28.3% of the respondents were frontline workers. The respondents were from various fields of profession, the majority being students. It was a highlight that 18.3% of the population were regular alcohol consumers. A majority did not have deaths in their closed contact due to COVID.

**AWARENESS & ELEMENTS AFFECTING MENTAL HEALTH**

<b>Questions (w.r.t the pandemic situation)</b>	<b>YES</b>	<b>NO</b>
<b>Thought that your family / business economy has been affected</b>	80 %	20 %
<b>Fear that you will infect yourself / your closed ones</b>	63.3 %	36.7 %
<b>Fear of death</b>	55 %	45 %
<b>Giving an extra attention towards personal hygiene</b>	91.7 %	8.3 %
<b>Any fearful dreams / nightmares directly / indirectly related to COVID 19</b>	26.7 %	73.3 %
<b>Any kind of anxiety attacks / panic attacks or any kind of physical issues</b>	36.7 %	63.3 %
<b>Any kind of sleep disturbances</b>	60 %	40 %
<b>Behavioural changes</b>	55 %	45 %
<b>A strong urge to consume alcohol, cigarettes , drugs (medicinal)</b>	16.7 %	83.3 %
<b>Frequent use of sanitizer</b>	55 %	45 %

**Interpretation:-**

**In order to achieve the above objective, the hypothesis for testing is :** Elements affecting mental health Interpretation :-

- All the respondents were aware whether the elements did affect or did not affect their mental health by giving a definite answer ie a Yes or a No
- The respondents weren't affected by all the elements that were displayed to them via the questions provided, and hence were definite in their answer.

**As per the above analysis, the alternate hypothesis is accepted**

**MENTAL HEALTH OF THE FRONTLINE / HEALTHCARE WORKERS**

<b>Questions</b>	<b>YES</b>	<b>NO</b>
<b>Regret being a frontline / healthcare worker</b>	30.4 %	69.6 %
<b>An over work load / double duty very frequently</b>	82.6 %	17.4 %
<b>Negatively affected your inner peace</b>	69.6 %	30.4 %
<b>Experienced physical difficulties post COVID duty</b>	81 %	19 %
<b>Felt suffocation / change in periodic cycle (for females) / change in sleeping pattern, post COVID duty</b>	69.6 %	30.4 %
<b>Fear that your family will be diseased with COVID 19, because of you</b>	78.3 %	21.7 %
<b>Has the number of Deaths that you diagnosed due to COVID 19, raised a feeling of anxiety in you</b>	73.9 %	26.1 %



<b>Refrain from social gatherings because of the fear of you affecting others</b>	52.2 %	47.8 %
<b>Believe that closely treating the COVID 19 patients, will increase your death prone</b>	47.8 %	52.2 %
<b>Felt left out / people neglect to talk / socialise with you, out of the fear of you being a frontline / healthcare worker</b>	58.3 %	41.7 %

**Interpretation:-**

**In order to achieve above objectives, the hypothesis for testing is :** Elements affecting mental health

Interpretation :-

- 69.6% of the total respondents, who were healthcare workers, have been negatively affected due to the COVID pandemic.
- Only 30.4% of the respondent healthcare workers were neutral or were unaffected by the COVID schedule.

**As per the above analysis, the alternate hypothesis is accepted**

## CHAPTER 5: SUMMARY & CONCLUSION

From the data that were gathered through the questionnaire, it was found out that The majority of the people are aware of the problems and issues they had to face due to various mental trauma that arose during the pandemic. It was also found that the mental health of the sample audience were in majority, negatively affected whereas there were also a set of elements that have positively affected the mental health ie. the increase in time to spend with family, the comfortability to work or preference for WFH, the resting phase, etc. The sleeping patterns of the people were affected due to tremendous mental health pressure. It was also found out that the sample audience were inquisitive to know about the rise and fall of COVID rates, and other related elements through social media. The working schedule and the studying mode were detected as one of the elements that affected the mental health of the individuals negatively. It was a highlight to note that 35% of the respondents felt the need for medical assistance in order to reset or stabilize their disturbed mental health. Their solutions can be to consult a psychologist or counsellor for better directions for the same.

The key element that affected the majority of the individual's mental health was the effect of COVID 19 pandemic on the family budget and their business economy. The cash flow in the family, the decline or loss of their source of income & fear of spreading the Virus to their near and dear ones led to a boost in their stress level, thus leading to an adverse effect on their mental health. It was found out that there was an increase in the personal hygiene care since the rise of the pandemic, mostly as a precautionary measure and fear of getting infected.. There was a boost in stress level and anger in the individuals, and this in turn led them to an irritating phase of living and work. People's disturbance on their mental health developed in them the urge to consume alcohol, cigarettes, drugs and other toxic substances. The usage of sanitizers and the habit of carrying them in their respective travel places, has been developed during the pandemic, and this to an extent invokes a sense of safety or protection towards one's own self from the virus.

It was appreciative to know that more than half of the people were in their positive state of mind even during the constraints of the pandemic. More than half percentage of the sample are ready to face a much more worsened phase of the pandemic, if one rises, with a positive mindset and a calm approach towards the same. A very small majority of individuals had an urge to give up their life and continue to live in fear due to the pandemic situations, showing and absolute negative hope in situations getting back to the normal. 86.7% of the sample believe in the medical system of India and expect advancements and updates on the current medical structure designed for COVID 19. It was a positive element to observe that people are expecting a worsened situation to happen, but now there is a difference in the state of mind due to past experiences that they learned.

The second part of the topic of research is the influence of the pandemic on the mental health of the frontline / healthcare workers and when observed it did have a huge negative impact on their mindsets and health. It was surprising to know that due to the excessive pressure on them, changing working schedules and mental trauma being undergone, the majority of the healthcare workers regret having opted for their respective profession they are currently working as. The female healthcare workers faced menstrual and periodic changes as well. They had the fear of infecting their family and loved ones as they are much more prone to the disease and hence become major carriers of the infection. They are used to witnessing the dead bodies of the victims of COVID 19 and the rise in witnessing those, contributed to their mental health, a sense of fear and anxiety for their own life as

well as the life of their near and dear ones. 52.2% of the sample healthcare workers were hesitant to attend social gatherings. They believe that people have developed a sense of neglect and grief towards them as people fear of getting infected, if they communicate or interact with them. The biggest fear that the healthcare workers are facing is the fear of death, which is the most primary element that has affected their mental health.

Hence, it is proved through this research that the pandemic had a majority of negative effects than positive effects on the individual's mental health. The respondents gave a transparent reply on their stand on the elements that have affected their mental health and it was clear that they were aware of the same. The economic, social, cultural, professional and moral elements had a drastic change in the individual lives due to the pandemic, and this in turn negatively influenced the lives of the individuals. The healthcare / frontline workers who had their most hectic schedule of their professional life during this pandemic, had their mental health being drastically affected as they had to undergo an extremely tight schedule as well as accept the taunts and ignorance from the society, ignoring the fact that, all they did was for the society, risking their own lives. The most commendable point to be noted is that the people still have a good hope of things to be rectified, modern medical advancements to be raised and to be back to the normal phase of life which was lived pre pandemic.

## **BIBLIOGRAPHY**

A book on "Clinical Depression" by Mr. Mike Samar, LMSW, BCD

"A Guidebook on Mental health care" by Dr. Pamela Smith, MD

A family guide on holistic health care – "Mental Health Naturally" by Kathi J. Kemper, MD, MPH, FAAP

A survey report on "Youth and COVID 19" by the International Labour Organisation (2020)

[https://www.researchgate.net/publication/342899361\\_Pandemic\\_COVID-19\\_and\\_its\\_Implications\\_on\\_Human\\_Life](https://www.researchgate.net/publication/342899361_Pandemic_COVID-19_and_its_Implications_on_Human_Life) (E- journal)

<https://www.sciencedirect.com/science/article/pii/S0165178120323271>

<https://www.unicef.org/india/impact-covid-19-childrens-mental-health>

<https://indiabioscience.org/columns/opinion/covid-19-has-exacerbated-indias-hidden-mental-health-pandemic>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7468668/>

<https://www.hindustantimes.com/lifestyle/health/covid-pandemic-anxiety-on-the-rise-in-india-101634356195650.html>

[https://journals.lww.com/indianjpsychiatry/Fulltext/2020/62040/Psychological\\_impact\\_of\\_COVID\\_19\\_lockdown\\_An.3.aspx](https://journals.lww.com/indianjpsychiatry/Fulltext/2020/62040/Psychological_impact_of_COVID_19_lockdown_An.3.aspx)

<https://www.indianpediatrics.net/dec2020/dec-1107.htm#:~:text=It%20has%20been%20reported%20that,pre%2Dexisting%20mental%20health%20conditions.>

<https://www.karger.com/Article/FullText/519366>

<https://mecp.springeropen.com/articles/10.1186/s43045-022-00174-4>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7415074/>

<https://www.frontiersin.org/articles/10.3389/fpsy.2021.797545/full>

---

# A STUDY ON SATISFACTION OF STUDENTS IN MUMBAI TOWARDS ONLINE MODE OF LECTURES CONDUCTED DURING THE COVID-19 PANDEMIC PERIOD.

***Dr. Megha Somani,***

Vice-Principal (Academics) & Associate Professor,  
Smt. M.M.K College of Commerce & Economics, Mumbai  
Research Guide in Commerce

***Mrs. Shailashri Uchil***

Assistant Professor, SIES College of Commerce & Economics, Mumbai

The COVID-19 pandemic impacted every sector around the world. Naturally, education sector was not to be left un-impacted. Around 32 crores learners in the country were impacted and restricted to their homes. It created a sense of chaos and confusion. But as usual, the country adapted to the change and was quick to shift over to online mode of teaching and learning. (Jena, May 2020)

It was initially a difficult period with most of the teachers not well acquainted with technology and the natural resistance due to the fear of technology. But soon when it was realised that there is no other way out and the pandemic is not to be over soon, the teachers and the students rapidly adapted to this new, lesser known method of imparting knowledge. (Kumar, July 2020)

(Khan & Nadi, December 2020) Online mode of education brought forth its own set of advantages such as-

- It fulfilled the urgent and immediate need of staying at home in order to maintain social distancing.
- It played a supporting role to the government in preventing further outbreak of the COVID- 19 virus by enabling social distancing.
- The video recordings of the lectures were made available. Hence students were able to access the lectures 24X7 and gain the benefits even in case of them missing the lecture schedule.
- It opened great opportunities for companies involved in Learning Management Systems.
- Enhancing the use of soft copy of study materials.
- It has to a great deal, encouraged in bringing enhanced digital literacy among students and teachers alike.
- Online mediums such as MS Teams, Zoom, Google Meet etc. took the constant feedback of the subscribers and went on improving their systems, the result of which led to constant increase in online mediums not only for academic institutions but also by corporates.
- Students got worldwide exposure and could enrol to the degrees provided by any university in the world.
- It led to an increase in the demand for Open and Distance mode of learning.

Online mode of education has the following benefits-

- The teachers as well as the students were not used to such a system and this sudden change created a lot of confusion and chaos in the initial phase.
- Many students did not own a smart phone before the pandemic period, hence there arose a need to immediately arrange for a smart phone in order to commence with the online mode of learning.
- Families from the lower economic background of the society found it difficult to buy a smart phone for their children to study.
- There were a lot of issues with internet connectivity especially in the rural areas.
- Students found it difficult to concentrate for long hours of online lectures.
- Some students did not take the online medium of lectures seriously because there was no proper system of monitoring whether the students are actually present at the other side.
- Students were not comfortable interacting, the way they used to interact during the classroom lectures.
- Due to very low level of participation from the students, the teachers were finding it difficult to analyse whether the students were about to understand the content delivered during the online sessions.

### **Review of literature-**

(Muthuprasad T, Aishwarya S,2021) found that the students preferred online lectures due to the 24X7 accessibility of the online mode The teachers found it easy in addressing online queries in the form of posting on chatbox or sending emails. But they are also of the opinion that due care is to be taken while developing online programmes as it must cater to the needs of all categories and background of students.

According to (Kohli H., Wampole D, 2021) many constraints faced by the students call for the need of educators and administrators to consider the social and emotional needs of the students as the students were found to be under immense stress due to deprivation of socialization due to the need for social distancing. Hence, universities also need to make freely available online health services to the students.

(Mahapatra, Sharma, 2021) emphasize that the challenges faced by the non-accessibility to education as a result of the pandemic cause lot of stress in children and make them vulnerable to discontinue education, future unemployment, and make them easily the victims of psychological disorders and substance abuse.

(Chakraborty P., Mittal P.,2020) are of the opinion that though online education has been there since a long time, the pandemic brought it into the mainstream. They feel that there is still a lot of scope for improvement in terms of the online classrooms. Methods such as flipped classrooms, case studies, gamification etc. may be used to make the class more lively and interactive.

### **Research methodology-**

#### **Objectives of the study**

The objectives of the study includes-

- To know the benefits and limitations of online mode of lectures.
- To analyse the perception of the students towards online mode of lectures.
- To find the factors influencing the effectiveness of online mode of lectures.

Limitations of the study-

The study included 128 samples of undergraduate and post graduate students.

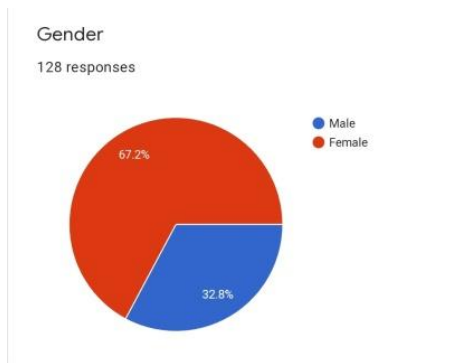
The researcher could collect response from only 32 post graduate students as the students were not able to make time to fill the questionnaire due to their jobs and other commitments.

Due to constraint of time, Snowball method of sampling was used to conduct the study.

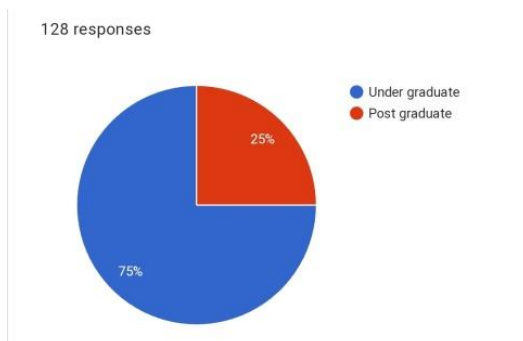
Data Collection method-

Snowball sampling was used. Some students were approached and the students were told to forward the survey sheet to their class mates as well as acquaintances who were students of colleges other than the one in which they are studying.

Analysis of data-

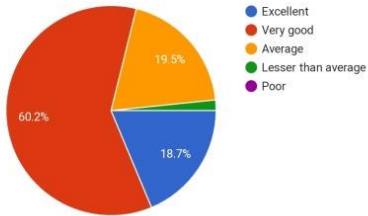


A survey of 128 respondents was conducted out of which 67 % of the respondentwere female and 33% were male.



A survey of 128 students was conducted out of which 75% were undergraduate students and 25% post graduate students.

What was the quality of online lectures in terms of content?

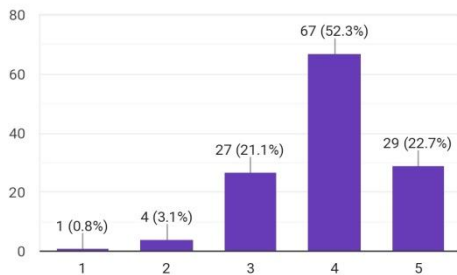


When asked regarding the satisfaction level of the students regarding the quality of lectures, 19% of the students found the lectures to be of excellent quality. Another 60% found the lecture quality to be very good.

Conclusion- This means that a vast majority of the students i.e. 79% of the students were satisfied with the quality of the lectures. This shows that the teachers have taken maximum efforts to maintain the quality of lectures at par with classroom lectures.

How would you rate the tools used in terms of videos and other materials used by the teacher that made the lectures interesting?

128 responses

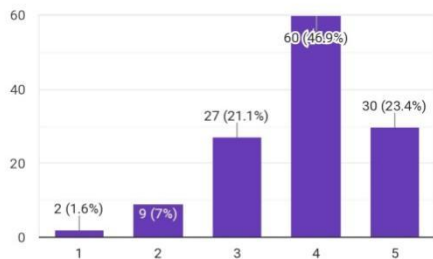


When asked regarding the quality of the teaching aids/tools used by the teachers to make the lectures interesting, 23% of the students found it to be excellent whereas 52% of the students found it to be very good.

Conclusion- This shows that the teachers had put in efforts to use various kinds of aids to make the lectures more interesting as well as to attract and to retain the attention of the students.

How was your level of understanding regarding the concepts explained during the online lectures?

128 responses



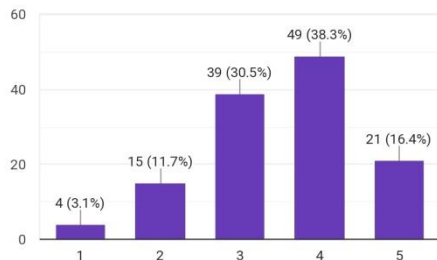
Regarding the students' understanding of concepts regarding the explanations given by the teachers, 23% students responded that they understood the concepts very clearly, whereas 47% claimed that they could understand the concepts quite well.

Conclusion- The findings indicate that concepts were systematically explained by the teachers during the online lectures.



What was your attention level during the lectures?

128 responses

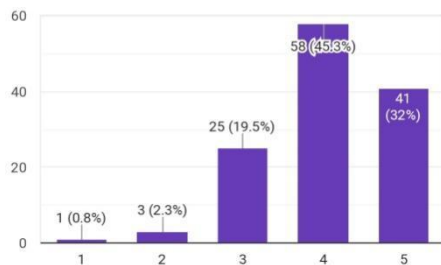


Regarding the students feedback regarding their attentiveness during the lectures, 17% responded that they were able to completely concentrate on the online lectures whereas 38% responded that they used to concentrate quite well. 31% responded with rating 3 which means that the attention level was average.

Conclusion- It could be concluded that though a vast number of students could concentrate on the online lectures, a fairly large number of students also had problems paying attention during the online lectures.

What is your opinion regarding the efforts of the teachers to ask questions, engage the students in discussions?

128 responses

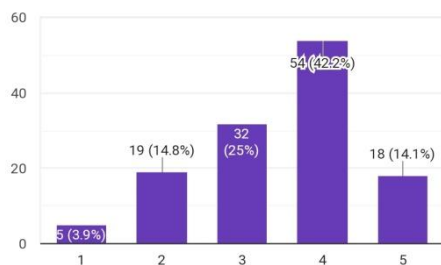


Regarding the students feedback about the efforts taken by the teacher to encourage questions or discussions during the online lectures, 32% responded the teachers' efforts as excellent and 45% of the respondents responded that the efforts of the teachers were very good.

Conclusion- This shows that the teachers have taken enough efforts to keep the students engaged in the form of encouraging questions, asking questions and initiating discussions.

What is your opinion regarding the efforts of the students to ask questions/queries, engage in discussion with the teacher?

128 responses



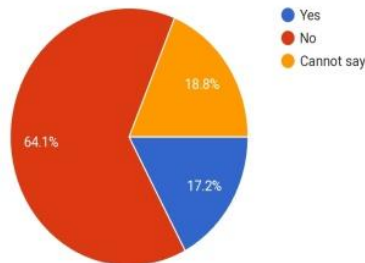
14% of the students felt that students in general used to take excellent efforts and 42% of the students used to take considerable efforts to answer questions and engage in discussions during the online lectures.

Conclusion- This shows that alongwith the teachers, a vast majority of students would give answers to questions posed by the teachers and also engage in discussions to make the online lectures even more interactive.



There is no difference between the learnings from online lecture and classroom lecture. Both have equal impact.

128 responses

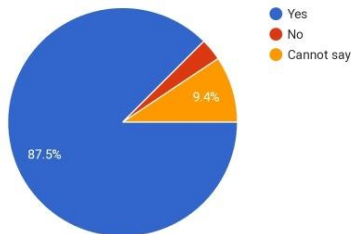


For the statement whether there is a difference between online and offline lectures in terms of impact, 17% responded that there is a difference, whereas 64% responded that there is no impact. 19% of the respondents were not able to determine whether there is an impact.

Conclusion- A considerable majority of students felt that online lectures as well as classroom lectures have equal impact.

Classroom lecture is more impactful in terms of learning and interaction.

128 responses

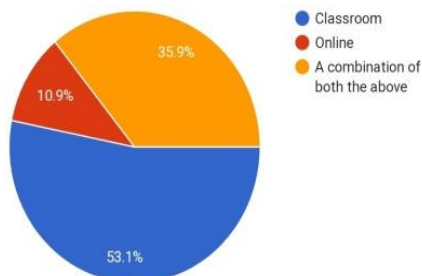


For the statement that classroom lecture is more impactful than online lectures, 88% of the students agreed to the statement. 9% weren't able to decide whether classroom lecture carries more impact. Only 3% felt that online lectures are more impactful.

Conclusion- Classroom lectures are perceived by students to be more impactful.

I would like to attend classes in future in the following mode

128 responses



When asked as to which mode the students would prefer to attend lectures in the future, 53% shared that they would like to attend lectures in classroom mode and only 11% replied that they would like to attend classes in online mode. Interestingly, 36% replied that they would prefer the hybrid mode of lectures which involves a combination of both online and offline lectures.

Conclusion- Classroom lectures are the most preferred mode of lectures because of the ability to directly interact with the teacher. Hybrid mode is also preferred as students can get the benefits of both the methods.

When asked about the reasons why the students like online lectures, (Open ended question), the students responded with the following points-

- Convenience of attending lectures at the comfort of one's home.
- Saving of time
- Ability to attend lectures anywhere in the country/world.
- Saving of travelling expenses.
- Benefit of getting to sleep longer which otherwise is not possible as the students have to travel early morning for lectures.
- Availability of lecture recordings for future reference.
- Comfort of attending lectures with home-clothes.
- Not facing the hassles of carrying notes, textbooks etc.
- Convenience of posting queries in the chat box without disturbing the teacher.
- The convenience of going for a job along with one's studies.
- Getting more time for studies due to the saving of travelling time.

When asked about the reasons why the students do not like online lectures, (Open ended question), the students responded with the following points-

- Problem of concentrating for a long time
- Network issues
- Lack of scope for interaction with teachers and classmates
- Inability to socialize with classmates.
- Power cut problems
- It is difficult to learn practical subjects in online mode.
- Urge to check messages and posts on social media while using the device for lectures.
- Disturbances due to loud speaking of family members inside the home, noises from television, from the kitchen as so on.
- Tendency to feel lazy and bunk lectures.

### **Conclusion-**

The online mode of education has its own benefits and was of great use for the students and teachers during the pandemic period. Due to its existence, the students could complete their studies which otherwise was not possible as the students would have been forced to lose more than a year due to the need for social distancing. It helped the students in many ways. It also gave students an access to being in the comfort of their homes and still completing their education. It ensured that the students complete their education and earn their degrees, thereby becoming employable.

### **Recommendations-**

- Though the pandemic period is over and it is now possible for the educational institutions to conduct classroom lectures, it is recommended that a blended method of delivering lectures be followed.
- Students can be given the option of choosing their method of lectures as it provides convenience to students living in the rural areas, working students etc.

- The hybrid system is also important because the online system came as a rescue during the pandemic period. Hence, it's important that students and teachers alike do not lose touch of this excellent method of teaching- learning.
- The method of monitoring the physical and mental presence needs to be made more stringent with the teachers asking sudden questions, or calling out students randomly in order to ensure presence and participation.
- The methods of assessment must be made more authentic with more reliable systems of auto-proctoring.

### **Bibliography-**

1. Muthuprasad, Thiyaharajan, et al. "Students' perception and preference for online education in India during COVID-19 pandemic." *Social Sciences & Humanities Open* 3. 1 (2021): 100101.
2. Kohli, Hermeet, Donna Wampole, and Amarpreet Kohli. "Impact of online education on student learning during the pandemic." *Studies in Learning and Teaching* 2.2 (2021): 1-11.
3. Mahapatra, Ananya, and Prerna Sharma. "Education in times of COVID-19 pandemic: Academic stress and its psychosocial impact on children and adolescents in India." *International Journal of Social Psychiatry* 67.4 (2021): 397-399.
4. Chakraborty, Pinaki, et al. "Opinion of students on online education during the COVID-19 pandemic." *Human Behavior and Emerging Technologies* 3.3 (2021): 357-365
5. Jena, P. K. (May 2020). ONLINE LEARNING DURING LOCKDOWN PERIOD FOR COVID-19 IN INDIA. *International Journal of International Education Research*, 81-92.
6. Khan , M. A., & Nadi, M. K. (December 2020). Students' Perception towards E-Learning during COVID-19 Pandemic in India- An Empirical Study. *MDPI*, 1-14.
7. Kumar, P. (July 2020). IMPACT OF PANDEMIC COVID-19 ON EDUCATION IN INDIA. *International Journal of Current Research*, 12582-12586.

# ROLE OF WORK LIFE BALANCE IN WOMEN EMPOWERMENT

\* Dr. Rashmi Maurya, \* Dr. Antara Sonawane, \* Dr. Jagruti Darji

Assistant Professor, K.P.B.Hinduja College of Commerce

## Abstract

*India is progressing towards becoming a knowledge economy. We live in times when women are an integral part of the workforce. But only 33% of working age females are economically active. That is far lower than the world average of 50% and the average of Asia of 63% as per World Bank Report 2015. It should be noted that if there is a growing number of economically productive women in the workforce it improves the human development indicators of the nation such as education and health. Women of India have contributed significantly as freedom fighters for independent India. A look into the history of India shows that women during the Vedic period enjoyed equal status as men in society. They were well educated. Today, in any organisation, the women workforce accounts for a significant percentage of total workforce. The relation between home and work has come under one scrutiny. This is due to the crucial alterations in the nature of work and its arrangements. These changes include the rising number of women in the workforce for paid work, changes in expectations of women's career, the family wage decrease, the disappearance of the job for life and changes in family formulation. Women face a lot of career and family pressure, especially the ones belonging to the mid-level. When it comes to balancing between work and life, the middle level career women face more problems and challenges resulting in additional difficulty to grow in their careers. These career women have to compete between two ideals which is to be a mother and a devoted worker. This double push adds more difficulty. It is important to attract and retain women in the workforce for various reasons. Women possess the natural attributes of curiosity and concern. Empathy, persistence and flexibility are other additional characteristics of women. One of the greatest life challenges for many women is to balance their work and life. While men are often challenged with balancing better workplace and fatherhood demands, to balance work and family is taken by women which is far more than their fair share of burden.*

**Keywords – Work Life Balance, Women empowerment, work place.**

## 1. INTRODUCTION

Women have been allotted all duties pertaining to the domestic field like handling a family and child care as conventionally, women have been always considered as caretakers and domestic servants .On the other hand ,men are conditioned to work outside, earn money and financially support their families as the society considers them as the chief earners . Nonetheless, in the current world, there has been a big transformation in the workforce. There has been a vast reduction in the percentage of females as homemakers and men as money makers.

In the city areas of India, both man and wife are earning money. Thus, in the present day, the most important facets for both women and men include their family and work habitat. As there has been transformation in the work areas as women too have entered the arena of paid work, there have been changes in ideologies or mindset of people. For women, balance between family and work becomes a matter of utmost concern as they are expected to handle both the realms skillfully. This situation poses many more challenges for working women after becoming mothers.

Women on top positions usually have to give up their me-time and other pursuits like personal interests, family relationships and friends. Because of family responsibilities many employed

mothers might be unsuccessful in apportioning considerable effort and time as demanded by the jobs at top position. Women working in higher ranks in an organization might not be able to devote most of the time to their children.

Due to constant work stress and family obligations it becomes tough for women to maintain balance between family and work. In order to maintain a good balance among all spheres of life, employed women need to skilfully manage their diverse roles at work as well as in the family.

It is taken for granted that in India, child bearing, domestic work, and child rearing are the sole occupations, while the economic activities are mainly the prerogative of men. In the past, whether it's managerial or operative roles, Indian female have not relished a good status in the settings of the workplace. We've seen in the past that all their lives women are burdened with all sorts of work. The task from reproduction to taking care of kids, doing household chores as well as working outside, they play a significant, burdensome and unique role as workers. Overall, they face exploitation and discrimination. However, the scenario today is changing. Along with domestic work, women these days also contribute significantly in economic activity. When compared with what is revealed by different censuses in India, the contribution of women is much higher in economic activity. There have been a great number of employment opportunities due to the Liberalization in the Indian economy for those, involving women, who have marketable skills and talent. For females, the work participation rate proceeds to be substantially less compared to males.

Post-Independence in India in the year 1947, the women percentage of working has been rising steadily year by year. This has increased more challenge to the women for balancing the WLB.

After Independence, the Government strongly supported the notion of 'Women Empowerment'. This led women to a new class of independence and freedom from the traditional social thoughts. Now women are engaged in all the sectors of economy and working more competently with men in their profession.

The number of female workers have seen a faster growth over the recent years when compared with the male workers. However, of the overall formal Indian Labour Force, women only account for a small portion. The male workers have increased by only 23% since the 1981 census, shows the 1991 census. However, the same census shows that the number for female workers have considerably increased by 40%. But women are accountable for only 23% (64.3 Million) out of the total. In the year 1999-2000, there was a nationwide sample survey on Employment and Unemployment which was undertaken by the NSSO in India. The survey estimated the female work force to be at 124 million. This 124 million female workforce accounts for 31% of the total workforce. And out of this 31%, more than 88% is that of rural workers. The participation rates for female workforce are 29.5 for rural areas and 12.4 for urban locations. In India many women's are working and contributing to the country's economy in some or other form. But many of their work is not taken into account for the official statistics of the nation. Various activities are been done for the contribution of the economy as well as to run their house. Women plow in the field, harvests the crops and work in the farms. Women are working in various cottage industries like spices, weaving work, handicrafts, etc.

Many of the women are engaged in informal sector as well working as a sole proprietor. From gathering wood to selling food, various works are been done by the females. Also in urban area they are working in service sectors as well as in various big position like manager, officers, engineer, scientist, IPS, IAS, CA, CS, etc. Along with all this she is being balancing her family life like cooking for the family, taking care of children's, etc.

## 2. LITERATURE REVIEW

**2.1 David J. Prottas, et.al. (2009)-** This paper deals with study of work family practices which directly incorporates external referents per social exchange theory. For this water is collected the sample of 108 participants of average age of 28.7 years and average working for current employer was around 4 years. 59% were female. 39% were married out of which 82% were having no child. 46% participants were working in very large organizations. It was found that married employees with having child face more work life conflict than single employees. Similarly employees is having feeling that organisation is not supportive then the employees tends to leave that organisation. If employer fails to take into account what their competitors offers then they tends to lose the employees

**2.2 Susan J. Lambert (2009)-** Adopting work-family benefits such as support for the child care, elder care the satisfaction to the employees specially female employees. In this study the research was conducted on engine gasket manufacturing firm, which is located in mid-east where 2000 employees work in America was reviewed. This company was ranked top of working mother's list. The author in this have taken sample survey by questionnaire method of 884 employees out of which 667 where workers and 217 was supervisors or manager. From those 667 worker, 424 workers were of blue collar and 243 workers were of white collar. The status of blue and white lead to conflicts between employees. The result give suggestion that investing the work life benefit among the employees will benefit the organisation and employees both.

**2.3 Reimara Valk, et.al. (2011),** Women in India as IT experts can accomplish the work and family balance by setting needs in their work and individual lives and by having emotionally supportive networks both at work, officially through HR strategies and programs, and casually through manager and support of the colleagues at workplace and at the family at home. The information raised issues that should be tended to both from an academic and practice perspective. The distinguished measurements could fill in as a stage for additional research on women as IT experts and the work and life balance which will fill in as a guide for associations to address the work and family balance issues of working ladies by planning and executing HR strategies and practices for working with the professional and persoanl balance. This, thus, would go far in empowering ladies to perform better grinding away, be more dedicated to the association, and eventually add to the development of the economy as well as overall growth of the society.



**2.4 A. Vasumathi, (2018),** - The aim of this paper is to review the existing literature on the work life balances on the woman employees. The WLB is defined as conflict between the career and family life, it is satisfaction of healthy and productive life which consists of work, play and love. The market has become open for the woman empowerment which brought more attention on the work life balances. Compared to men, women are facing more conflicts in work life balance. It has said that both women and men are equally involved in the work life but the women has to engage in the home life and solve the issues of home. Many times she is found solving home issues at the workplace and work issues at home. It seems that men sacrifice more at home and work more in the workplace, while women sacrifice more at work and are committed to home life. Married status also plays important role in work life balance. The married person give priority to the personal life and single person concentrate on work life. Further the birth of children rises more concentrate on the personal life, then work life. Age matter also affect the work life balance, the youngster work more at work place, while older adult are attached to the family. Some other factors stated in the paper were educational level, life demand, organisation factors.

**2.5 G.Delina, et.al. (2013),** "A study on WLB in Working Women". This paper aims to study the challenges face by the females who are working in maintaining balance is between both personal and professional life. There are many factors that affects the WLB of married female has been studied in this paper. The results of this study states WLB of individuals affect their life's quality.

**2.6 Maria Ahemad, et.al. (2013),** "A Review of Quality of Work Life Balance for Women Employees". Job and profession is an integral part human life. Both Life and work are consisted of responsibility and opportunity. Which means, every profession have some or other effects in general life and every life have some or other effects in profession. Similarly both has some or other duty towards each other. This paper shows the various values, attitudes & beliefs of women about job anxiety and in balancing the work life and personal life.

**2.7 R.Balaji (2014),** The author discusses on the conflict, which are faced while maintaining the WLB among the women. They believe that such conflict lead to stress and physical health issues to the women, which inturn reduces their job satisfaction. They can hardly focus on their career and their skills are less utilized to render the services at the workplace. Even the family life gets disturbs.

### 3 OBJECTIVE

The objective of the study is to assess the impact of work life balance on the status of women empowerment.

### 4 METHODOLOGY

Secondary data is collected from journals, books, magazines and literature and the data was compiled to fulfil the objectives of the study.

---

## 5 RESEARCH FINDINGS

### 5.1 The Panch Tatvas of Indian Life on Work Life Balance

Work Life Balance = C + A + P + L + F

WLB = Career + Ambition + Pleasure + Leisure + Family

As per our Indian Ethos Five major Tatva play a significant role and are needed to be balanced for a smooth proceedings of a human life. These Tatva concludes Career, Ambition, Pleasure, Leisure and Family. If one could manage to balance between these five tatva's perfectly there will be no problem in work life balance? The above formula tries to figure that balance in all five activities, including our career and with the self realization and persistent growth we can find the true meaning of Work Life Balance 'WLB'

### 5.2 Change in the working style

The finding of the current study shows that it is important to balance both office work as well as personal work in life for achieving greater success in both life and profession. The way of working has been changed and this has resulted in the importance of work-life balance for both employees as well as employers. The work life balance problems faced by various employees. Employers can benefit the employees by implementing various policies and actions that can help the employees to manage work life as well as professional life.

### 5.3 Role of Government

Government strongly supported the notion of 'Women Empowerment'. This led women to a new class of independence and freedom from the traditional social thoughts. Now women are engaged in all the sectors of economy and working more competently with men in their profession.

### 5.4 No change in thinking of the Indian society

Though there was a positive revolution, the only segment, which still is not accepted by the Indian society, is sharing of the household responsibility. Still in many areas of the nation, men are refusing to help the females at their place to support the household chores and responsibilities. Thus, women are not only managing their outside responsibilities, but even she needs to manage her role at her house, at her personal space. This counts for added pressure, which the working women are facing in the contemporary period.

### 5.5 'Preference theory' of Hakim (2006)

'Preference theory' of Hakim (2006), is a good example for describing different lifestyle preferences for women. This theory argues that in modern societies lifestyle preferences of women play a key role in her life particularly the preference given to activities related to children, family or an emphasis on work related activities in the public scenario. The 'Preference theory' classifies women of 21st Century based on their work lifestyle preferences as home centered, work centered and



adaptive. Home centered woman prefers to give importance to personal and family life after she gets married while adaptive woman prefers to combine work and family without giving priority to either of the domains. Adaptive woman wants to work but she is not committed to career fully.

## **6 RECOMMENDATION**

### **6.1 Creating Flexibility in Time**

Organizations offer a number of flexibility options to employees but they have several restrictive provisions that limit the flexibility.

### **6.2 Better Leave Management Policies**

Most of the organizations offer employees with adequate leaves per annum. But most employees do not avail these leaves and cannot make use of them to manage their WLB. Proper structuring of the leave policy by way of having a higher proportion of lapsable leaves than en cashable leaves, (paid leaves) ensures employees are motivated and compelled to utilize those leaves in a given circumstance.

### **6.3 Work Hours Should Be Kept As Short As Possible:**

CSR includes a focus on Work-Life-Balance. As part of the employment obligations, good employers need to ensure that their employees do not work so much in pressure that it damages their personal or healthy lifestyles. The effects of long hours on employees and the company are two different things. In today's competitive economy, companies must realize to the fact that working for long hours affect employee motivation, morale, turnover, and productivity as well as reputation of the companies. Staffs that are productive are less likely to leave the entity. Employer's usually believe that simply increasing work hours and productivity will eventually increase output, however that isn't always true.

### **6.4 Children's Care In The Workplace:**

In addition, it is recommended that centers for childcare and play be placed at the work area and these centers provide services tailored to employees needs at competitive prices and quality services. Working parents are expected to find these services to be an invaluable resources.

### **6.5 Workplaces That Are Gender Sensitive:**

A work environment that is inclusive and welcoming for female employees should be developed by organizations. A commitment to transparency is demonstrated by eliminating core hours and showing trust for the entity. Achieving targets and deadlines with managers to conduct remote work. Meetings between the core members to conclude a deal and agree on time off is highly recommended.

**6.6** The organization should always consider its women employees prior to male employees while formulating WLBP's in the organizations.

6.7 The establishment and developing of comprehensive and accurate and authentic data based on women's employment in all sectors of the economy, including organized as well as unorganized. As a result of this process, both legislative and administrative efforts will be planned by the government in order to enhance the protection and safeguarding female staffs interests in different range of work and opportunities and conditions of employment in various fields under different circumstances.

## 7 CONCLUSION

Work-life balance among the employees is an important phenomenon to be kept in mind by every organization. Human resource being the most valuable asset of the organization has to be considered for the better functioning of the organization. Over work can lead to burnout, which is a state of feeling mentally and physically exhausted, devoid of motivation and ultimately work life imbalance. Thus the two aspects of work and life are to be separately treated, not allowing them to mix with each other. Setting up a boundary between the two aspects is difficult, thus to set a mental boundary between professional and personal life is essential to avoid cross-spillage. Seeking a new job is for better compensation.

Various researches has suggested various steps that has to be followed to balance the work life. By following those can lead to the empowerment of the women. The most recent change that has happened in India is the union cabinet's approval to grant 6 months maternity leave to women employees. This is an increase from 3 months to 6 months i.e., double the time. This applies to surrogate mothers too.

While focusing on the women, the major change was seen only after independence when the attitude of the society has undergone a positive change. The girl child was allowed to take formal education, same as boys. Similarly, after education, she was also allowed to work for her financial stability. Several professional goals and carriers were kept open in front for her, so that her position in the society could uplift. Further, it was seen that, this phenomena was boosted, when the constitution had pass the law, where the minimum age for marriage for both boys and girls were defined appropriately. Child marriage was curbed down with the enactment of this law. Women started moving out of the house for formal education and pursuing careers in wide aspects, apart from teaching, nursing and other traditional occupations.

## Reference

1. David J. Prottas a; Richard E. Kopelman, (2009), "Comparative Work-Family Practice Availability and Employee Attitudes" The Psychologist-Manager Journal, DOI: 10.1080/10887150802665380
2. G.Delina & Dr. R. Prabhakara Raya, (2013), "A study on Work-Life Balance in Working Women", IRACST – International Journal of Commerce, Business and Management (IJCBM), ISSN: 2319–2828, Vol. 2, No.5.
3. Maria Ahemad, Anupa Chaudhary, Dinesh Kumar Karush (2013), "A Review of Quality of Work Life Balance for Women Employees", International Journal of Trends in Economics Management & Technology, Vo. 2, Issue 1, February 2013

4. R.Balaji (2014), "Work Life Balance of Women Employees", International Journal of Innovative Research in Science, Engineering and Technology, Vol. 3, Issue 10, October 2014, ISSN: 2319-8753.
5. Reimara Valk, and Vasanthi Srinivasan, (2011), "Workefamily balance of Indian women software professionals: A qualitative study" IIMB Management Review, doi:10.1016/j.iimb.2010.10.010
6. Susan J. Lambert, (2000), "Added Benefits: The Link Between Work-Life Benefits and Organizational Citizenship Behavior" The Academy of Management Journal, Vol. 43, No. 5, DOI: 10.2307/1556411
7. Reimara Valk, and Vasanthi Srinivasan, (2011), "Workefamily balance of Indian women software professionals: A qualitative study" IIMB Management Review, doi:10.1016/j.iimb.2010.10.010

# THE ROLE OF EMOTIONAL INTELLIGENCE AND ITS EFFECT ON STRESS MANAGEMENT – AN ASPECT OF MENTAL HEALTH AMONGST STUDENTS.

Sadiya Fuggawala , Navnita Meghani (Associate Professor)

## Abstract

*Stress has been a synonym in our progressive globally and technological life . COVID 19 has lead to anxiety, stress, hopelessness and fear amongst the people. Our emotions control our behaviour . Controlling ones emotions can lead to self management and regulation . The expertise required is emotional Intelligence. When you have high EI you deal with Stress in a better manner relatively . The pandemic has stressed out the life of students to a larger extent and bombarded them with techno stress along with other stressors,*

**Keywords:-** Stress Management , Mental health, Emotional Intelligence, Self Management, Emotions

## Introduction

“You don’t have to control your thought, You just have to stop letting them control you”- Dan Millman

This line explains the impact and importance of a sound mind. In general terms, a persons condition with regard to their psychological and emotional well being is mental health . In other words, mental health influences cognition, perception and social well being. It also helps to determine how an individual handles stress , has a relation bond with one self and others, alongwith ones ability to make decisions and choices.

Emotions are a state of mind. It consists of five categories that encompasses – Sadness, Anger, Enjoyment , Fear and Disgust. The control of ones emotions leads to better performance under distress.

The pandemic has increased tremendously the levels of stress amongst all. The students underwent a life challenging experience in personal life and academic life where they were challenged with new technology - online teaching mode. They have to maintain time for leisure, physical activities studies and family life resulting in consequent increase of their level of stress and risk for illness.

In the current age of modernization, we notice that tension, anxiety, stress and neurosis have become synonyms with the Life.

All individuals face stress to some degree in one or another form in any field of work. Stress can be Good Stress -Eustress or Bad Stress – Distress.

The New Educational Policy 2020 has given impetus to Higher Education in India (12 standard +) and the policy says that all ‘higher education institutions’ (HEIs) shall aim to be multidisciplinary by 2040. By 2030, there shall be at least one multidisciplinary HEI in or near every district. This will

expect the students to give in their best academic performance in healthy yet challenging competitive environment.

It is impetus that students are able to manage emotions and deal with stress.. A stress free environment is required to more productive and focused.

## **Review of Literature**

Stokols (1979) has defined stress as a state of imbalance within an organism that (a) is elicited by an actual or perceived disparity between environmental demands and the organism's capacity to cope with these demands and (b) is manifested through a variety of physiological emotional and behavioural responses (Murphy 1984) According to Lazarus (1984)

Emotional reactions are normally a part of stress response. When person has gone through a prolonged period of stress, he continues to experience unpleasant emotions even when the situation is over. The most common reaction to stress are anxiety, anger and agitation. When these emotions are not allowed to be expressed, a person may experience helplessness and depression. This depression is not of psychiatric nature but has an origin in the realistic response to high stress reaction. When exposure to stress is prolonged and negative emotions have also remained aroused for a long time, individuals stop reacting with emotions. They become cold, indifferent and detached and all these reaction have a detrimental effect on their social behaviour.

The first to actually publish the phrase "emotional intelligence" was Salovey and Mayer in 1990. They defined EI as the "ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and action" (Salovey & Mayer, 1990).

Goleman's model included four main constructs: Self-awareness, Self-management, Social awareness, and Relationship management (Goleman, 2001).

Emotional Intelligence deals with analysis of ones emotions and also manages emotions of others which leads to effective leadership and improved performance. In current scenario Leaders are not just expected to manage but also to lead with sensitive aspect.

The amplified stress levels would necessitate the need of higher levels of emotional intellect in order to effectively manage one self and others .

Bar-On (1997) Emotional Quotient Inventory (Bar-On EQ-to measure the five composite scores (Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood) and the 15 subscales of (a) Self-Regard, (b) Emotional Self-Awareness, (c) Assertiveness, (d) Independence, (e) Self-Actualization, (f) Empathy, (g) Social Responsibility, (h) Interpersonal Relationship, (i) Reality Testing, (j) Flexibility, (k) Problem Solving, (l) Stress Tolerance, (m), Impulse Control, (n) Optimism, and (o) Happiness.

The stress is considered as an emotional response (usually negative) to several stimuli present in the immediate environment (Selye, 1956). Emotional intelligence can be appropriately utilized as a tool to manage emotions and develop customized coping mechanisms.

Lazarus (1999) argued that emotions and stress have a kind of interdependent relationship, therefore, it can be said that the presence of stress indicates the presence of emotions (Lazarus, 1999). Studies have established the significance of emotions in dealing with stress and maintaining psychological and physical well being (Spector & Goh, 2001).

EI development has been linked to improved decision-making, risk-taking, interpersonal relationships, commitment, prioritising, problem solving and many other behaviours associated with effective stress management at work. Both the individual and the organisation benefits when focus is placed on developing EI capability.

Bar-On et al (2000) stated that emotional intelligence not only includes the recognition and management of emotions but also include the overall development of employees thereby managing stress .

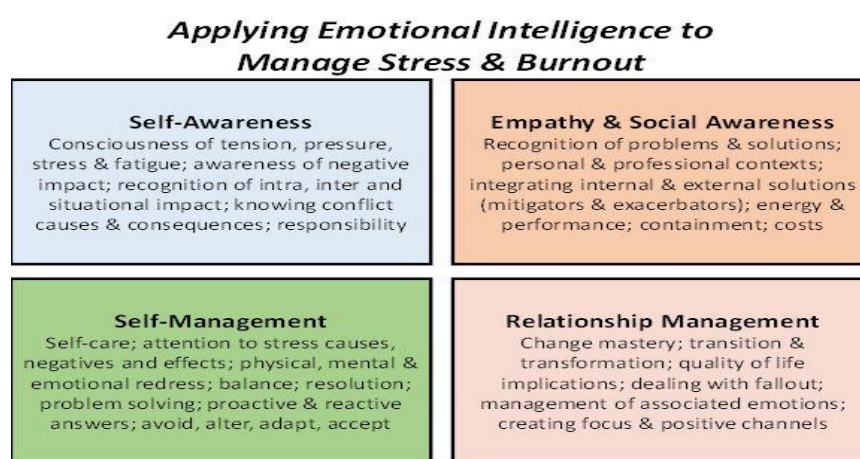


Fig: Emotional Intelligence in Conflicting Situations

Slaski and Cartwright (2002) found that employees with enhanced emotional intelligence experience less organizational stress, had improved psychological wellbeing, manifest satisfactory performance and likely to remain healthy in physical terms too.

The central features of emotional intelligence might have some sort of interaction with resilience and trait of adaptability in stressful environment. The capacity of adapting and coping quickly to the fast changing life is the need of the hour.

### Objectives of the Study:

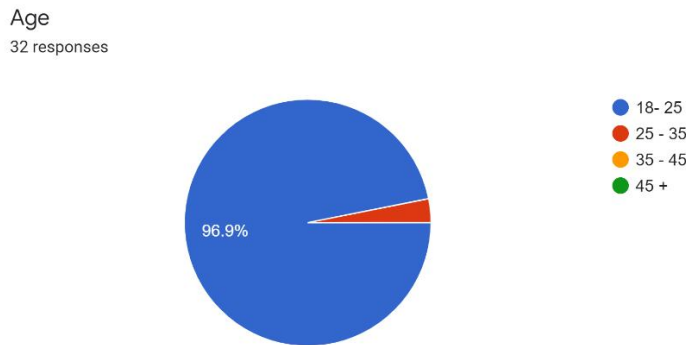
1. To Study the awareness of the concept of Emotional Intelligence as a competency .
2. To analyse the Demographic , Pyshcographic and Personal factors that effects Emotional Intelligence.

3. To analyse the relationship between Emotional Intelligence and Stress Management

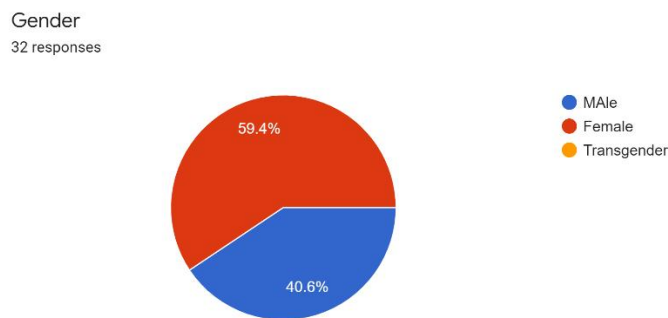
### Research Methodology

Data and information was gathered using Primary source by means of close ended questionnaire and secondary data was taken from published sources .The primary data was analysed for testing the hypothesis and objectives in statistical manner. Secondary data is used for conceptual purpose.

### Findings of Primary Data amongst students

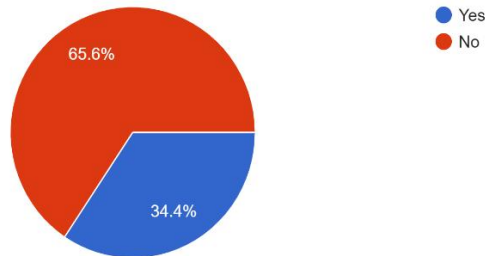


Age of respondents : 18-25 fall under students category



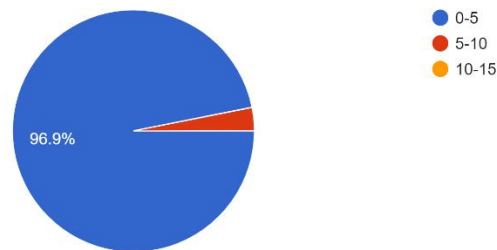
Gender – The respondents were 59.4% Males and 40.6% Females

Employed  
32 responses



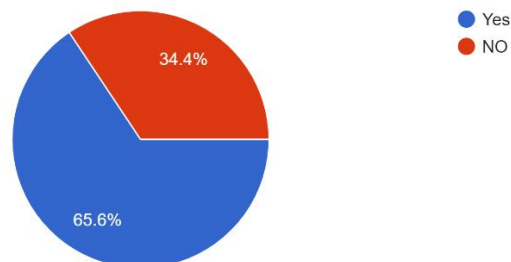
Employment Status –65.6 % Respondents were employed and 34.4% were not employed.

Years of Work experiecn  
32 responses



Years of Experience – The respondents had maximum 0-5 years of experience considering they are under graduates , graduates post graduates students

1.Have you heard about Emotional Intelligence.  
32 responses

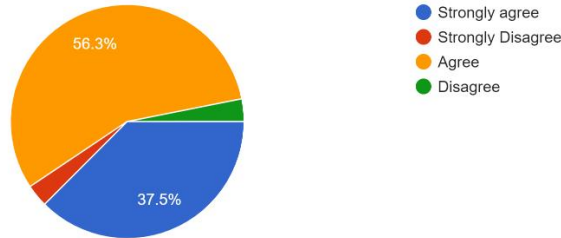


65.6% of the respondent students were aware the concept of Emotional Intelligence



2. Mood and emotions are related to each other.

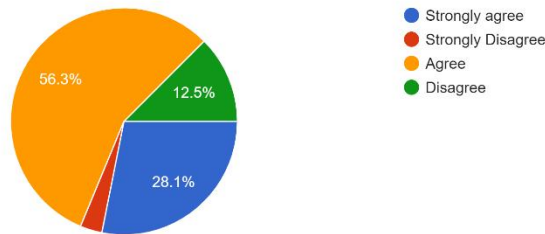
32 responses



56.3% respondents agree and 37.5% strongly agree and that mood and emotions are related to each other.

4. Self awareness of ones emotions can help us to communicate with oneselves better.

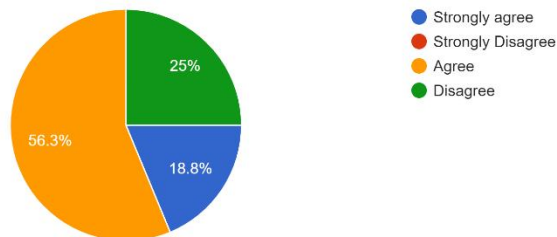
32 responses



56.3% agree , 28.1% strongly agree that self awareness of ones emotions helps to communicate with oneselves better , however 12.5% disagree.

5. Self awareness of ones emotions can help us to communicate with others better.

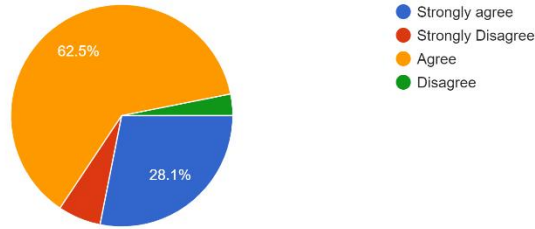
32 responses



18.8% strongly agree , 56.3% agree and 25% disagree that self awareness of ones emotions help to communicate better with others.

6. Emotional Intelligence helps us to influence others emotions hence create happy environment .

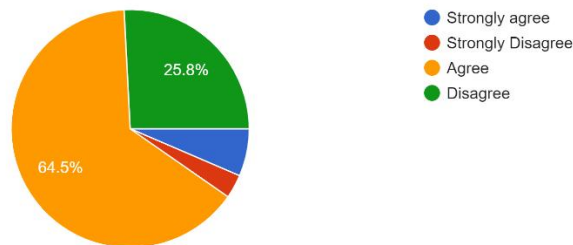
32 responses



62.5% agree and 28.1% strongly agree that EI helps to influence others emotions thereby creating a happy environment.

7. Emotional Intelligence compliments other types of intelligence.

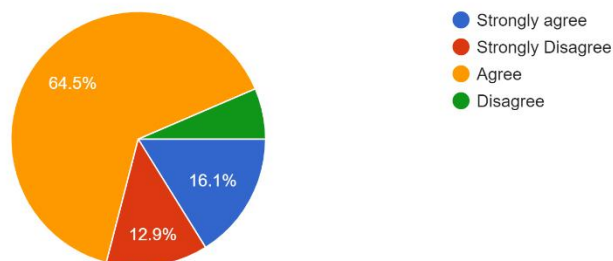
31 responses



64.5% respondents agree that EI compliments other Intelligence – IQ, AI whereas 25.8% disagree.

8. Emotional Intelligence helps to sense the stressors early .

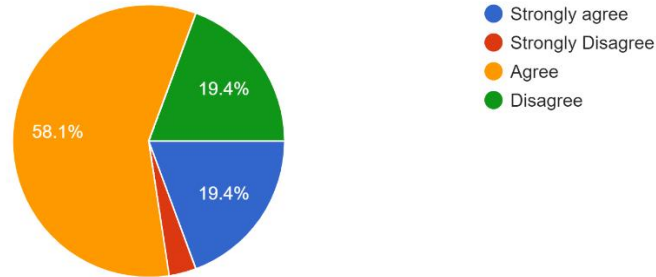
31 responses



64.5% agree ; 16.1%strongly agree whereas 12.9% strongly disagree that EI helps to sense the stressors way ahead it actual happening.

9. People with higher EI face challenges strongly.

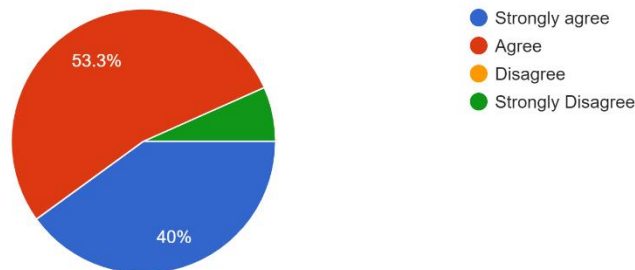
31 responses



58.1% respondents agree, 19.4% strongly agree, 19.4% disagree that an individual with higher EI faces challenges strongly.

11. Emotional Intelligence helps in self control, self management in terms of unfavourable situations.

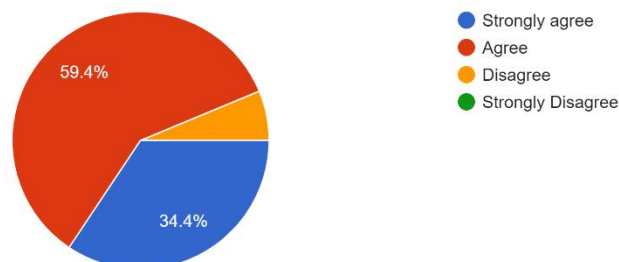
30 responses



53.3% students responded that they agree and 40% strongly agree that EI helps in self control, self management in terms of unfavorable circumstances (distress)

11. The ability to manage your emotions and stress is an important aspect of Emotional Intelligence.

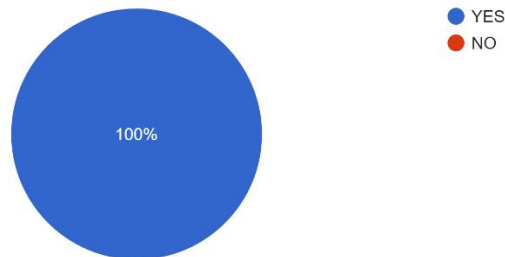
32 responses



59.4% agree and 34.4% strongly agree to manage emotions and stress is important aspect of Emotional Intelligence.

12. According to you , EI has a positive affect on Human Behaviour

32 responses



100% of the students responded that Emotional Intelligence has positive effect on the behaviour of Humans.

## Discussions

Good stress is Eustress and it also motivates behaviour however distress has led to depression, suicidal attempts, hopelessness and emotional turmoil. The Pandemic has driven stressful situation across globally and with online teaching the students have been effected with techno stress, personal stress and loss at homes that has effected them negatively.

Close examinations of the respondents reveals –

- Students were aware of the concept of Emotional Intelligence as an important management aspect.
- Emotional Intelligence is an important aspect that affects the human behaviour in a positive manner.
- Having the knowledge of ones emotions can guide the behaviour and build bond with oneself.
- Analysis of ones emotions constructs a positive way to bond with others and communicate to them .
- EI provides a way to influence the emotions of others and also motivate them and boost their morale.
- EI is positively related to managing and coping with stress.
- There is divergence of view when it comes to applying EI to manage unfavourable situations positively where 19.4 % disagree and a same 19.4 % Strongly agree whereas maximum of 58.1% reveal that EI helps in managing situations strongly.
- EI strongly compliments the other intelligence aspects and is important as a trait or skill.
- 53.3% students responded that they agree and 40% strongly agree that EI helps in self control , self management in terms of unfavorable circumstances (distress)

## Conclusion

An attempt to throw light on the less celebrated management competency of “ Emotional Intelligence ” and its significant relationship on the stress management has proved futile. An indept know;edge of the our emotion improves our mental health .Stress is an unavoidable behavioral response of human beings. However, emotional Intelligence directs and control one’s feelings . It requires emotional competency, emotional maturity and emotional sensitivity to manage stress. It makes an individual emotionally strong as to understand owns emotions and also manage emotions of others. Hence, am emotional intelligent person has an overall control over his emotions and is able to perform better amidst eustress or distress.

A model based on the outcome of the research will serve as a guideline to recruit or train individuals on Emotional Intelligence competency where they can deal with Stress – Esutress or Distress positively. Emotional Labour is well celebrated in developed countries.

## Bibliography and References

- Abdul, L. A. & Ehiobuche, C. (2011). Emotional intelligence and managerial competence. Insight to a Changing World, 4, 41–58.
- Bar-On, R. (1997). The Emotional Quotient Inventory (EQ-i): A test of emotional intelligence. Toronto, ON: Multi-Health Systems.
- Bar-On, R. (2000). Emotional and social intelligence: insights from the emotional quotient inventory.
- Mayer, J. D., Salovey, P., & Caruso, D. R. (2004b). Emotional intelligence: Theory, findings, and implications.
- Goleman, D. (1995). Emotional intelligence.
- Goleman, D. (1998). Working with emotional intelligence.
- Goleman, D. (1995). Emotional intelligence. New York: Bantam Books. Goleman, D. (1998).
- Working with emotional intelligence. New York: Bantam Books. Grandey, A. A. (2000).
- Emotion regulation in the workplace: a new way to conceptualize emotional labor. Journal of Occupational Health Psychology, 5(1), 95–110. Gross, J. J. (1998a)
- Agarwal A (2011) - Impact of Academic stress upon academic achievement and mental health of the Adolescents – International Journal of Management and Social Sciences ,1(1), 41-52
- Bhati, S.H., Parveen, A., & Pujju, J.A. (2012). Mental health and academic achievement of visually impaired and crippled students. Basic Research Journals of Education Research Review, 1(1) 1-3
- Google form for primary data- <https://forms.gle/31X13pdF2DWH4RAR6>

## **“START –UPS & ENTREPRENEURIAL GROWTH AMID PANDEMIC”**

**Ritu Kashyap**

Assistant Professor, Thakur Global Business School

***Abstract:** - Startups with time are becoming major attraction for the youngsters in terms of getting their career started. Lean start up is one such kind of thing that gives an experimental ground to the people who want to start something with the innovative ideas that lies in their mind in incubation stage.*

*Year 2020 was the time when the world experiences the power of Virus by the name COVID-19. Everywhere the situation was tensed and things were getting worse. Many lost their near and dear; the situation seems to be completely out of control. Nature has created havoc in the face of CORONA VIRUS. It was mutating for worse and people were helpless. The only option that seems feasible, to reduce the impact was to enter into Lockdown. Government declared it as PANDEMIC, and announced complete lock down. This jolt of closure can be felt on the world economy badly. With everything coming to halt the financial standing of countries and their citizens also got affected. People lost their jobs and even those who were having were facing problem in terms of pay cuts due to non productivity.*

*One thing that seems to be little accessible in this tough situation was “Lean Start Ups”. Many people started small ventures for survival. The purpose of this paper is to bring to the notice that how Lean Start Ups has helped people during situations like pandemic or otherwise also. The paper focuses on opportunity and growth that lies with start ups and also how it supports campaign like “Make in India” or “Atmanirbhar Bharat”.*

**Key Words:-** Lean Start Up, Incubation, Corona Virus, Pandemic, Lockdown, Make In India, Atmanirbhar Bharat

**Introduction:** - Lean Start Up concept of starting venture was introduced by Eric Ries in 2008. He developed the idea based on his experiences as a startup advisor. He strongly feels that for any business to be successful, the most important step is to check the viability of business idea by targeting few customers with less waste of time and money.

This methodology is based on developing small businesses in short time and to check the viability of the same within small subset of customers. Concept of MVP- minimal viable product is what helps these start ups in accessing the market performance in short time. It can be explains as the mechanism of introducing a product to customers with features that can attract early adopters and validate the same in the early stage of PLC. This helps in collecting the feedback from the customers or small set of customers in no time and based on that can go on improving the product for better and quick adoption.

Using the same concept of MVP many Start ups have captured the market with in no time. To name Nykka, Amazon, Uber, Zomato are some of the names that can be easily looked at how the MVP has helped these companies to become big. Though many of the startups have lost also, but the loss was to minimum extent, like Juicero, Baseamp, Electroloom are such kind of Start ups.

During COVID, however the concept proved to be a defensive tactic. Since we were in close down and things were not available for consumption, people opted out for such ventures that cannot only provides inflow of income but also helpful in filling the gap between demand and supply. So products which fall under the category of regular consumptions were mostly being started by people as a Start Up and small businesses, based on MVP concept.

Products like food items provide one such opportunity to many. Many people started with the concept of providing various cuisines delivered. And since all food joints were under lock down, the idea became a major hit. In fact many started providing healthy breakfasts to people who follow daily regime of fitness near the jogger's parks and walkways. Further products like snorkeling masks to be used for oxygen provision in hospitals, health trackers especially like Co-Win App was one such initiative, Pune based "MySilkLove" is one such Start Up that targeted niche market of handmade and handloom product, deliveries getting done by drones are such ventures that did well and got established.

#### ***Review of Literature:-***

***Aswathy Sreenivasan:*** - In the paper "Lean in StartUps: Advances & Futuristic Research Direction" the researcher clearly tells how lean techniques when implemented timely and correctly can bring success and a promising economic results and employment capabilities. The paper clearly opinionated that in today's competitive world it is of great significance. The paper identifies how lean startup can help in enhancing quality standards while lowering the cost.

***Luciana Paula Reis, June Marques Fernandes, Ezequiel Junior Barreto:*** - "Impact Assessment Of Lean Product Development & Lean Product Development And Lean Startup Methodology On IT Startups" – The research paper focuses on the evaluation of LPD & LS on the growth of Startups. It highlighted the impact that lean methodology has created on the growth of Statups in various sector and precisely in IT sector.

***John M York & Jonathan L.York :-*** In the paper "The Limits to Lean Startup for Opportunity Identification and New Venture Creation" authors describes lean startup as an approach that offers entrepreneurs a way to identify the market opportunities, customer needs, market fit to venture creation process. The focus is also to explain how the concept of lean startup helps the entrepreneurs in engaging with the dynamics of competitive & everchanging market.

***Gary Boyd:*** - In article "The Impact of Lean Start-up Theory upon Local Business Entrepreneurs" has highlighted that ithe concept of Lean startups methodology being so popular world wide, but still in Teaxs the local businesses & street marketers were unaware of it. So it is very important that entrepreneurial vision need to be translated so that opportunity in terms of starting up venture can turn out into a viable and sustainable business model. The ground work needs to be done in the form that benefits of the Lean starttups methodology needs to be explained and experimented, so as to understand the benefits, it has.

**Dr Suniti Chandiok:** - In “India the world’s fastest growing startup ecosystem: A study” highlighted how startups have taken a leap and contributing in the GDP of country. It also explains how challenging conventions and revolution of unique and emphatic business models are being developed through startups. India a predecessor taking Centre stage in the new world order. The study concluded that making capital more accessible and cheaper, easier patent filing, giving research and development credits, and easier entry for the success of Startup India as a growing economy.

**Dr. Gopaldas Pawan Kumar:-** In “INDIAN STARTUPS- ISSUES, CHALLENGES AND OPPORTUNITIES” paper writer focuses on how large population with high percentage of middle income groups, educated youth with technical background, IT domination, high internet and mobile penetration are some of the drivers that have thrown up opportunities for spreading startup revolution in India. The ‘Make-in-India’ initiatives and other government schemes have also given a boost to startups with many individuals entering the fray. Starting a venture is a well planned and disciplined exercise with due consideration of both internal and external factors that may impact the sustainability of the venture.

**Research Methodology:** - Methodology adopted in the current research in hand is purely a combination of descriptive and explanatory method. The entire paper is developed based on observation technique and secondary data, which has been collected from various sources available.

#### **Objective of the Study:-**

To study the growth pattern of startups in India

To study Lean start-up methodology and the MVP concept.

To study how Pandemic impacted Startup sector

To identify the factors that contributed in the sudden growth of StartUps as a part of initiatives.

To analyse the future growth of StartUps

**Overview of Start Ups:** - The Indian startup ecosystem in past few years has really grown a lot and come into focus on its own. Factors such as massive funding, consolidation activities, changing technology and massive market reach and opportunities of market. As per the statistics published few years back, the numbers that can be depicted is from approx. 3000 startups in 2014 to a projection of more than approx. 11000 by 2020. It is a revolution embracing India, this is definitely going to change the way market is today. Soon more of youngsters will be engaging in startup activities, and making the campaign “Atmanirbhar Bharat” a reality. Government of India is also doing lot in terms of funding ventures. Companies like Microsoft, Tata are also doing a lot in terms of supporting or providing seed capital to these Startups. Even In the budget 2022 Government have announced special sanctions for start up funding, amounting to Rs 283.5 Crore. Further the Budget Report as read by Finance Minister includes, “The budgetary allocations for the Fund of Funds for Startups stood at Rs 1,000 crore. The government has set up a Fund of Funds for Startups (FFS) with a corpus of Rs 10,000 crore. The Small Industries Development Bank of India (SIDBI) is the operating agency for the FFS”.



---

**Start Up Initiatives during Pandemic:-**

**Chef Junction** - Suryanshu Panda and Epari Pritam launched a website in August 2020 at Bubneshwar that enables people to order home cooked food and also provide online platform for home chefs to earn their living.

Suryanshu and Pritam both are BBM graduates from Xavier's University; Bhubaneswar began their entrepreneurial journey in 2020. They realized that many people could not order food amidst pandemic due to COVID -19 and they becoming concern for hygiene. They Said - "We are a food delivery platform from where customers can order hygienic home-cooked food, prepared by home chefs, through our website. Our struggle in the hostel to get good food, the craving for "ghar ka khaana", and eventually the hesitancy to order from restaurants during the pandemic paved the way to the birth of ChefJunction."

**Gradeasy** – A Surat based entrepreneurial venture that had a false start once in 2018, again started a venture when all the things including learning's for children shifted to digital platform, by the name "Gradeasy". Started by Disant Gandhi & Alok Kumar in June 2020, enabling local institutions to conduct online examinations for just Re 1 per exam.

They found out that many local institutions were finding conduct of examination difficult as well as costly because of major reasons such as poor UI/UX, no vernacular support, and high costs. So they decided to provide a performance assessment tool that enables institutions of all sizes to conduct exams – from multiple-choice questions to subjective tests , with some additional features like question banks and white labeling with additional cost.

**Custkart** - Custkart a venture started by Kundan Mishra & Abhishek Mishra from Bokaro, in 2020 launched the project jointly as merchandise start up. Looking at the pandemic situation they thought of creating job opportunities for locals so that they do not have to leave their family for earnings. The venture started up by them deals in items like t-shirts, caps, and hoodies being supplied to corporates and institutes. Soon the venture has made a turnover of Rs 50 lakh and has plans to become the 'standard' merchandise retailer in India. The startup that comprises of service and deliveries has run the show with a team of 10 people.

**Greenhive essentials**: - During the pandemic when everything was closed and the nature started healing, an idea came to the mind of Abhishek Deo and Gourav Sarangi of Rourkela. Greenhive sells eco-friendly and daily use sustainable product. They partnered with local people and manufacturer of products such as bamboo toothbrushes, steel straws, eco-friendly shopping bags, and pure copper tongue cleaners.

**Felicity** - A start up venture by brother and sister, Vaibhav Khandelwal and Pratika Khandelwal from Jaipur started Felicity. In June 2020, amidst pandemic, when sudden rise in the cases of mental illness were reported, duo thought of starting online counseling for healing people suffering from mental illness. The venture was an eye opener where the number of cases registered was 50% from semi-urban cities. The Startup today provides help in healing to people who are under stress or depression.

There are many more such Startups in India itself that grew and provides new product and services to people during the pandemic period. Every story /initiative taken by people was by choice and the intention was to help people & at the same time create a medium, for self-earning.

### **Reasons for the Sudden Growth of Startup's During Pandemic:-**

It is not that idea of Startup was born during pandemic. It already existed, but took a galloping pace when Indian Government promoted "Make In India". In a country like India which is over populated, people struggle a lot in terms of earning livelihood, so startups became an option in terms of self employment and ensuring a source of income for living. Further the attitude and habit of earning for self, or doing something that is satisfying, also contributed in changing the mind set of people and hence becoming positive towards starting own ventures, in the form of Startups.

Further in 2020 when virus in the form of COVID-19, was deepening its grip in the world, no doubt health was one aspect that was badly affected, but there were many other problems also creeping in our life along with COVID-19. Problems like livelihood, availability of food for consumption became a serious concern. This is what accelerated the inclination of more people towards starting their own activity. The idea of having Startup got a further lift, with work culture getting changed to "work from home". Some necessities, some desires that were otherwise lacking, got pace. People under lock down started experimenting lot of things, especially with respect to essentials and food. Digitalization also got a strong pace during Pandemic. Things, which could have been experienced after 5 years probably, are now very much reality. The world adopted it soon as that was the only option left out for getting things done or gets to remain connected.

Requirement of having financial security during such tough times and with uncertainty of everything gave a major push to people to start their own arrangements for earnings. People were aware that with the pandemic things are not going to be easy and one has to have some alternate arrangements as the economy was collapsing.

To narrow down the reasons why Startup sector picked up growth during pandemic, were:-

***Uncertainty toward life:*** - COVID-19 has brought lot of uncertainty in everybody's life. People were struggling not only for life, but were also having a fear of meeting the two ends of their life. Younger generation was having a fear with respect to their future. People were looking for alternate arrangements of earnings.

***Digitization:*** - The most important factor that accelerated the pace of Startup's during pandemic was increasing consumer acceptance and adoption of digital services and products. Remote working, rebalancing the workforce away from work location became the necessity of the time. Being under lock down and yet keeping our woks deliverables was a challenge. But with digitization the problem was taken care to an extent and hence also contributed in the Startup's to work.

***Multi Sector Collaboration:*** - The situation of pandemic across globe has made it compulsory to have multi –sector collaborations. These collaborations helped in taking the various projects to next level. Like the health sector, various essential requisite projects, distribution etc, has to be collaborated as the movement was restricted and suddenly everything went on stagnation. So to have

a pace this type of initiative proved helpful and this has also expanded the entrepreneurial development. As Prabhav Garudadhwan, founder of chain startup “EasyKrishi” rightly commented - *“I built a virtual network with scientists during lockdown when their labs were closed. They were all open to talk. Now, when I meet with investors, they are surprised at the amount of innovation that we are sitting on.”*

**Localization:** - Pandemic gave a hard though right realization that self dependency is what the need of hour is. Government of India also initiated “**Atma-Nirbhar Bharat**” with the motto of becoming self sufficient. Lot of talks and works were initiated to motivate people to contribute in making our country self sufficient and local product and services were appreciated and boosted. It became necessity to create more reliable supply chains, boost local employment and reduce the carbon footprint related to transporting goods. Hence gave birth to many startup ideas.

**The rise of social enterprises:** - COVID -19 outburst has given rise to many social entrepreneurs. People came ahead with the intention of helping people and safeguarding humanity. With the kind of environment that was prevailing, these types of activities were required. Making things available, taking care of education, nourishing and healing people, counseling etc were the requirements. As per the data published – *“Indian entrepreneurs exhibited high societal commitment during the pandemic by volunteering their time (52%) and business services (65%) for social causes. Efforts were also made to make sources of funding available for COVID-related projects.”*

**Well Being & Resilience:** Year 2020 was the year of mental well being and resilience. Everyone was impacted directly and indirectly with the virus. Physical health and mental health became priority. People started following a healthy regime, lots of yoga, meditation, healthy eating habits suddenly became the need for many of us. These has open up options for many to have some kind of options, to give people what they were looking in terms of guidance, in the form of stating start-up’s.

**Conclusion:** - The paper gives us an understanding of how pandemic contributed in accelerating the growth of start-up sector. Every part of globe was facing the challenges and hence has the urge to achieve self sufficiency. Lot of governmental supports in the form of sanctions, financial support became a reality. The need to survive and earn for the same has made people to think of starting their own activity. Immovability and uncertainty for future, has also made it obvious to have more entrepreneurial behavior and development. Due to the change in behavior and mentality we are now promoting startups a lot more and it has definitely helped in becoming independent. Many problems like unemployment, poverty, regional development, economic independence can be taken care in coming future with the same pace of growth in start-up sector.

## References:-

<https://www.researchgate.net>

<https://www.worldscientific.com>

<https://www.gavinpublishers.com> › article › view › the-...

<https://athenaeum.uiw.edu>

<https://amity.edu> › arjtah › pdf › voll-2

<https://www.researchgate.net> ›

<https://timesofindia.indiatimes.com> › business ›

<https://www.weforum.org/agenda/2021/07/five-post-covid-trends-among-indias-entrepreneurs/>

---

# SUSTAINABLE FINANCE A KEY TO CLIMATE CHANGE

**Dr. Sheetal Mody**

Ph.d, M.Phil., UGC-NET., MBA

## **Abstract:**

*The financial sector has immense intensity in funding and developing awareness to issues of sustainability. Sustainable finance is defined as the investment decision in the fields of Environment, Social and Governance(ESG) for contributing to economic development. These investments are for long-term to developing and maintaining the climate. The climate is a very important factor in the economy of a region. Sustainable finance is a concept developed to support economic growth while reducing pressures on environment and taking into account the social and governance aspects. The paper makes an attempt to highlight the relation between climate and economic development.*

Key Words: Environment, Governance, sustainable finance

## **Introduction:**

Sustainable finance is to any type of financial service assimilating environmental, social and governance (ESG) measures into the business or investment decisions for the long-term benefits for clients and society.

A sustainable financial centre is a financial marketplace that, as a whole, contributes to sustainable development and value creation in economic, environmental and social terms. In other words, one that ensures and improves economic efficiency, prosperity, and economic competitiveness both today and in the long-term, while contributing to protecting and restoring ecological systems, and enhancing cultural diversity and social well-being.

The industrialisation brought development of countries, raised the standard of living of the citizens, the per capita income increased, the GDPs of the countries raised. This prosperous scenario was glittery but all that glitters are not gold. The industrialisation now, is bringing dark clouds to the world. The world is moving towards annihilation of the resources. Sustainable finance is the key to solve this annihilation.

## **Climate and Economic Development:**

- The climate change could drive 216 million people to migrate within their own countries by 2050, with hotspots of internal migration emerging as soon as 2030, spreading and intensifying.
- Climate change would cut crop yields, mostly in the world's region where food production is vulnerable. The change in agriculture, forestry, and land usage are responsible for about 25% of greenhouse gas emissions. Concentrating on agriculture sector is very important as it would be majorly impacted.
- The largest impact of climate change is that it could wipe off up to 18% of GDP off the worldwide economy by 2050 if global temperatures rise by 3.2°C, the Swiss Re Institute warns.

- Prediction based on temperature increases staying on the current trajectory and the Paris Agreement and net-zero emissions targets not being met.
- Figure could rise to 18% of GDP by mid-century if temperatures increase by 3.2°C in the most severe scenario.
- Climate change is a systemic risk that must be addressed now, warns Swiss Re.
- Climate change should be called climate destabilization. It's created more extreme and frequent blizzards, heat waves, and other forms of extreme weather.
- This extreme category includes tornados, wildfires, hurricanes, blizzards, floods and landslides, heat waves, and droughts. It also includes violent storms, whether they be dust, hail, rain, snow, or ice.

### **Insurance**

From 1980 to 2020, extreme weather cost \$1.875 trillion. Consistently high costs related to extreme weather threaten to make insurance too expensive for most people. Munich Re, one of the world's largest reinsurance firms, blamed climate change for \$24 billion of losses in the 2018 California wildfires alone. Of those losses, \$18 billion were insured. If insurance companies continue to experience significant costs related to increasingly common extreme weather events, they may have to raise premiums to remain profitable.

### **GDP**

The negative effects of climate change are expected to be an ongoing drag on the global gross domestic product (GDP). A Stanford study in 2015 attempted to project climate change's impact on GDP, and they concluded that there was a 51% chance that climate change would reduce the world's GDP by more than 20%. That's comparable to the Great Depression, where GDP fell to -26.7%. The only difference is that, in the case of climate change effects, the GDP reduction would be permanent. The same Stanford study found that there was a 71% chance that climate change would have at least some negative impact on GDP.

### **Employment**

The World Employment and Social Outlook 2018 estimated that 1.2 billion jobs are directly dependent upon the healthy and sustainable management of the environment

Natural disasters caused or compounded by humans cost 23 million working-life years annually from 2000 to 2015. On the other hand, efforts to combat climate change would create 24 million new jobs.

### **Immigration**

Climate change creates mass migration around the world. People are leaving flooded coastlines, drought-stricken farmlands, and areas of extreme natural disasters. From 2008 to 2018, events related

to climate or weather have displaced 22.5 million people annually, according to the United Nations High Commissioner for Refugees. Some forecasts predict that, by 2050, climate change could cause as many as 1 billion people to emigrate.

Immigration at the southern U.S. border can be expected to increase as climate change worsens conditions in Latin America. The World Bank estimates that between 1.4 million and 2.1 million people in Mexico and Central America will migrate due to climate impact by 2050. Drought, shifting rain patterns, and extreme weather destroys crops and leads to food insecurity. The World Food Program found that almost half of Central American migrants left their homes because of food insecurity.

### **National Security**

In 2017, Congress proclaimed that “climate change is a direct threat to the national security of the United States.” A three-foot increase in sea levels would endanger 128 military bases in the U.S. Aside from the security threats, these 128 bases are valued at roughly \$100 billion. A 2018 Pentagon survey revealed that U.S. Naval Academy in Annapolis, Maryland has experienced storm surge flooding and hurricane damage. The Cape Lisburne Long Range Radar Station in Alaska has lost a seawall from extreme weather.

### **Food Prices**

As America experiences more extremely hot days, food prices are rising. Corn and soybean yields in the U.S. precipitously plummet when temperatures rise above about 84 degrees Fahrenheit.

Those crops feed cattle and other meat sources and create spikes in beef, milk, and poultry prices. A 2019 study found that a warming ocean has pushed global sustainable fish yields down 4.1% from 1930 to 2010. Some regions experienced fish population losses of up to 35%.

### **Sustainable finance:**

The developed and developing countries are framing policies, programmes and schemes to combat the ill-effects of industrialisation. Sustainable finance is one such concept developed to mitigate the ill-effects of industrialisation.

The financial institutions have introduced sustainable finance of environmental, social, and governance standards, as well as risk management to their lending practices. They promote stability of financial systems in developing countries, and channel finance to responsible companies. In addition, they work with regulators and stock exchanges to introduce environmental, social and governance standards to markets—which can help to approach challenges that are beyond the capacity of a company to resolve.

The examples of such programmes and schemes undertaken by financial institutions, organisations and regulators are:



- Issuance of ESG bonds by Deutsche Bank, these bonds includes green bonds, sustainable bonds, social bonds and bonds linked to sustainable criteria's. On June 2, 2020, the Deutsche bank issued its first green bonds, which was intended to refinance sustainable projects example of expansion of renewable energies
- Nomura Group is providing the market with a wide range of information in order to encourage demand for funds among companies seeking to solve challenges and connect them with investors aiming to contribute to society through investment. The Nomura group has established a research centre to conduct advance research in sustainable finance.
- The OECD has developed two programme in view of sustainable finance namely:

**Clean Energy Finance and Investment Mobilisation Programme (CEFIMP):** aims to strengthen domestic enabling conditions to attract finance and investment in renewable electricity and energy efficiency in five emerging economies in Asia and Latin America.

**Investor Network of the Centre on Green Finance and Investment:** aims to bring together institutional investors, private equity funds, commercial banks, project developers and other investors to support global policy efforts and address market challenges in green and sustainable finance and investment.

## Conclusion:

Climate was never considered by the countries as an important element of the environment wherein we all exist. The earth is composed of spheres which together develop environment liveable for all the species. Industrialisation was considered a boon to the economic and social development of the countries, in the process of development, the environment was totally ignored. The sustainability of the climate is very crucial as it's the only solution the problems created by industrialisation. The capitalist, socialist all kinds of economies are now taking steps towards sustainability. Many organisations are involved in the sustainability, all should contribute towards the achievement of this goal.

## Webology

<https://news.climate.columbia.edu/2019/06/20/climate-change-economy-impacts/>

<https://www.iberdrola.com/sustainability/impacts-of-climate-change>

<https://www.thebalance.com/economic-impact-of-climate-change-3305682>

[https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance\\_en](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/overview-sustainable-finance_en)

[www.worldbank.org](http://www.worldbank.org)

<https://extension.harvard.edu>

<https://www.oecd.org/cgfi/>

[www.bcg.com](http://www.bcg.com)

[www.weforum.org](http://www.weforum.org)

<https://www.business.hsbc.com.sg/>

[www.db.com](http://www.db.com)

## WOMEN EMPOWERMENT: THE BOND BETWEEN THE PAST & CURRENT SCENARIO

**Dr. Koyel Mukherjee**

Correspondence address – 298, Kumar Lane, Chinsurah, Hooghly. W.B. Pin-712101.

### Abstract

*Women are the underrated match compared to the male counterparts. On the contrary, women are a powerhouse of energy, strong determination, discipline and firmness. If a woman decides anything for herself, she will definitely achieve it despite of many odds, struggles and hardships. She can dominate the evil with strength and courage, provided if she can justify herself for the good. A woman whose voice is heard and who is given proper rights in all aspects of life is said to be empowered, she who can make a difference in her chosen area is an empowered woman. Empowerment of women prepares women to make life-resolving decisions through the different problems of society. Empowerment ranges from self-strength to efficiency building of women. However, it can be categorized into five main parts –social, educational, economic, political and psychological. In a social set up like ours, the involvement of women in the development process has to be ensured through concrete measures taken at various levels, which makes empowerment of women in the real sense. The present paper makes an attempt to recognize the importance of women empowerment in the current world scenario.*

**Keywords:** Women Empowerment, life-determining decisions, powerhouse of energy, strong determination, self-strength.



**Fig-1.** Source- Transparent Success Clipart-Problems of working women-Pinclipart.com





- 1) To examine the impact of women empowerment in various levels of the society.
- 2) To assess the importance of women in various spheres of life.

### **Methodology**

The paper is mainly descriptive in nature. The required information has been collected from secondary sources which are various reports prepared by national and international bureau on women welfare and empowerment. Also data has been collected from various authentic websites. Some research articles and journals related to the topic are also referred. In this paper, an attempt is taken to analyze the empowerment of women.



Fig-4. Source: The voice of Education Industry/Featured-Image-Woman-Empowerment-Eduvoice.com

### **Education plays a remarkable role in women empowerment**

Education is an important determinant for everyone, but specially significant for the girls and women because education is not only an initial point to start with but also opens many opportunities in life. The educational attainments causes ripple effects in the family and goes on through generations. Educated girls make marriage decisions in life which have a good effect on their families to come. They have small families but they are happy and healthy. Educated women can recognize the importance of health care and know how to seek it for themselves and for the children. Education also helps girls and women to know their rights and to gain confidence to claim them. Irrespective of gender, the female counterpart must be given equal opportunities in every sphere of life. Empowerment of women can at the first stage be attained by abolishing child marriage. Discrimination against the girl child is a multidimensional issue which should be resolved to the earliest. Amongst several government and non-govt. endeavors, Self-Help Groups (SHG) programme is a structural initiative which emphasizes upon strengthening women at multiple levels- cognitive, psychological, economic and social. Women empowerment is a stepping stone towards societal equality. From the very first level, women have been deprived of proper education. During 18<sup>th</sup> century, women suffered from various handicaps like female infanticide, sati, purdah, child marriage, illiteracy and subsequently forced child widowhood in the 19<sup>th</sup> century. Women were torched mentally and physically and were always humiliated. Moved by this extreme plight, great social

reformers like Raja Ram Mohan Roy, Shri Ram Krishna Paramhansa, Swami Vivekananda and Mahatma Gandhi were in forefront fighting against social atrocities towards women. Empowerment entails learning to deal with the forces of oppression along with the conscious efforts to enhance the quality of life whereby women become agents of their own development. But now in the 21<sup>st</sup> century, there is advancement in every field. From nuclear power, missiles to technological machines and techniques, women in most cases have a prominent role. In the 21<sup>st</sup> century, the role of women has undergone a paradigm shift. They are no more restricted to cooking, washing clothes, doing household chores and looking after their children and family. During the modern times in India, women have been granted rights such as freedom of expression, equality and education. During this period, women held several prestigious positions. Nowadays ladies are given preferences in several fields.

According to the key indicators of Household Social Consumption on Education in India , report based on the 2017-18 NSSO, fewer than 15% of rural Indian household have internet access( as opposed to 42% urban Indian households). This is shown in the following table.

**Table-1: Key Indicators of Household Social Consumption on Education in India**

Sr No	State	Rural		Urban	
		Operate Computer (%)	Access Internet (%)	Operate Computer (%)	Access Internet (%)
1	AndhraPradesh	1.5	10.4	11.6	29.5
2	Assam	3.7	12.1	30.8	46.9
3	Bihar	2.7	12.5	20.0	38.6
4	Chhattisgarh	3.2	10.6	22.0	34.6
5	Delhi	NA	NA	34.7	55.8
6	Gujarat	4.4	21.1	20.1	49.1
7	Haryana	5.9	37.1	29.5	55.5
8	HimachalPradesh	10.5	48.6	28.3	70.6
9	Jammu&Kashmir	3.5	28.7	16.0	57.7
10	Jharkhand	1.3	11.9	15.6	40.2
11	Karnataka	2.0	8.3	22.9	33.5
12	Kerala	20.1	46.9	27.5	56.4
13	MadhyaPradesh	2.3	9.7	17.2	35.4
14	Maharashtra	3.3	18.5	27.4	52.0
15	Odisha	1.8	5.8	17.2	31.2
16	Punjab	9.4	39.4	26.7	57.1
17	Rajasthan	6.4	18.5	26.6	49.9
18	Tamilnadu	11.6	14.4	24.7	24.8
19	Telangana	1.6	9.9	17.6	41.9
20	Uttarakhand	7.0	35.2	32.5	64.3
21	UttarPradesh	4.0	11.6	22.3	41.0
22	WestBengal	3.3	7.9	23.0	36.0

*Source: 75<sup>th</sup> round of National Sample survey conducted between July 2017 and June 2018*

We can empower women in the 21<sup>st</sup> century by the following ways –

1. Empowering women through technology
2. Empowering women through education.
3. Empowering women's voices.
4. Empowering women to run their own business.
5. Empowering women to drive the change.

According to the Guardian, a newsletter, it states that women are in a better position today, but still far from being equal with men. Things have definitely improved for women, but at the top profiles still the faces are stubbornly of male characters. As said earlier, women have faced and are still facing many reforms or changes in the employment sector since the past decade, now women are into many jobs which their previous generations could never think of. Now we find some high-profile women in many jobs such as administrative level jobs such as IAS, IPS, even women presidents are also found in rare cases. Again, they can also be found as chief executive officers in top companies. Now women are replacing men in various kinds of jobs. They are working in factories or sweatshops and now they even enjoy the independence of doing various jobs rather than remaining at home.

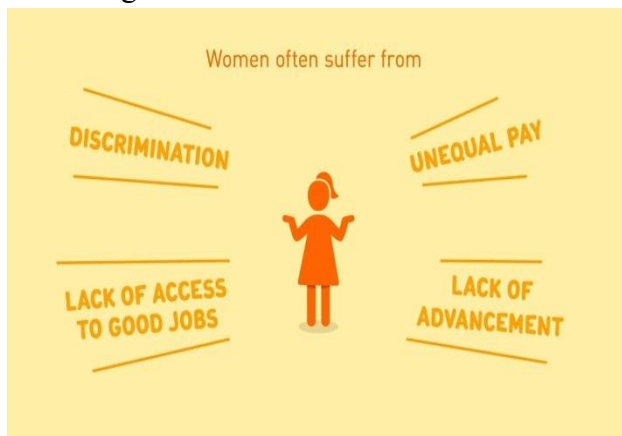


Fig-5. Source- The value of empowering Women, uploaded by Unilever, Youtue.com



Fig-6. Source: List of Bills & Acts for Women empowerment -JagranJosh.com

Economist Ruth Pearson points out that an individual worker experiences both the liberating and empowering impact of earning a regular wage, thus attaining increased autonomy over their economic lives; but low wages were constantly witnessed in case of women as compared to male colleagues employed in industrialized companies. But we see in some cases women reached the top such as there are powerful women who lead as executives for large companies like Indra Nooyi CEO of Pepsi or speaker of the house Nancy Pelosi; these women are in positions that were never filled by a woman in past times. Statistics have demonstrated the prominence of women leaders in contemporary politics. A recent story by Mary Hawkesworth, director for the Center for American

Women and Politics recounts the participation of women in the political system:” At the outset of the 21<sup>st</sup> century, women holds only 12% of seats in Congress, 22% of the seats in the State Legislatures, 6% of the nation’s 50 governorships, 36% of the offices of lieutenant governor, 27% of other statewide elective executive offices and 14% of the federal judiciary.”Women are the key to sustainable development and quality of life in the family. According to a recent newsletter, the economic impact of achieving gender equality in India is estimated to be US \$700 billion of added GDP by 2025.The IMF estimates that if women participate equally in the workforce India’s GDP will increase by 27%.



Fig-7. Source: Empowerment and continuous learning through problem solving activities/Cothink Academy.com

A woman of substance carries out with ease many different roles efficiently, those of a wife, leader or administrator, the manager of the family income and the most important of all, being a mother.

1. The better half - Woman is man’s partner in most of the tasks and a help-giver as well as comrade. She sacrifices her personal pleasure and ambitions, sets standards of morality, and relieves stress and strain. She regulates the peace and harmony in the family. She relieves her husband from all tensions he faces in his life. Thereby she stands by him in all crises as well as shares with him all success and attainments. A man looks upon her woman for timely inspiration



which leads him to achieve great heights in his life. She is the giver always. She abundantly showers her love, understanding, sympathy, gives the desired recognition to the man.

2. The director of the household: A well- ordered household is essential to normal family life. She plays the role of the chief executive. She helps all the family members in need; she gives specific duties to all members according to their age and ability and also provides the necessary resources to accomplish the given task. She plays the key role in the preparation and serving of meals, selection and care of clothing, laundering, furnishing and maintenance of the house. As an administrator, she organizes various social functions in the family for social developments. Her responsibility is to provide recreation to all the family members. She plans various recreational activities to meet the needs of the young as well as old members of the family.

3. The principal controller of family income - Woman acts as the humble manager of the family income. She is always good at managing expenses and there is always a surplus witnessed in her act of managing the income. She is calculating loss and gain while spending money. She is always judicious in distributing income on different categories of expenses which can be necessities, comforts and luxuries. The woman in the family contributes to family income through her own earning within or outside the home. She always donates a lion's share of her income to the productivity of her family. She even converts the waste products of her family to productive purposes.

4. Maa, the child bearer – The whole burden of child bearing and greater part of child rearing task are carried out by the woman in the family. She is primarily responsible for the upbringing of the child at the primary level, to bring him up to be a responsible citizen, to mould his character to a worthy human being. Her contacts with the child during the most formative period of his development sets up his behavior pattern. The mother because of her intimate and sustained contact with the child, she is able to discover and nurture child's special traits, aptitudes and attitudes which subsequently plays a key role in shaping his/her personality. She is very much concerned about the physical wellbeing of every member of the family, the helpless infant, the sick child, the adolescent youth and also has to take care of parents. She looks after the health of all the family members. She takes care of each member of the family and sees whether the family members have got proper food, sleep and recreation to make them happy and healthy in life. She makes the home a comfortable place to live in.

### **Conclusion**

The woman performs the role of wife, partner, organizer, administrator, director, recreator, disbursing officer, economist, mother, disciplinarian, teacher, health officer, artist and queen in the family at the same time. Apart from it, woman plays the key role in the socio-economic development of the society. Modern education and modern economic life compels women more and more to leave the narrow sphere of family circle and work side by side for the enrichment of society. She can be a member of any women's organization and can launch various programmes like literacy programme such as adult education, education for disadvantaged girls etc. The utility of these programmes is to raise the standard of living of the society at large as education enables the female to respond to opportunities and ultimately to change the various circumstances in their lives. Girls and women at large must be

enabled to discover their 'identity', their 'own space' amidst the patriarchal structures and their violent manifestations. Women have an equal right to live a full life on this earth as men and all girls should be made aware of their rights as human rights.

## Woman empowerment



Fig-8. Source: Do we really believe in Women Empowerment or just celebrate it?  
ProBono India.com

### References

1. UNIFEM, United Nations Development Fund for Women. Women's Empowerment Principles-Equality means Business. [https://www.unifem.org/partnerships/womens\\_empowerment\\_principles/](https://www.unifem.org/partnerships/womens_empowerment_principles/)
2. Thakur, S.S., Naikoo, A.A. (January, 2016). Women empowerment and their empowering schemes in India. <https://www.researchgate.net/publication/321965670>
3. Nayak, P. and Mahanta, B. (November, 2017). Women Empowerment in India. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1320071](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1320071).
4. National policy for the Empowerment of Women (2001).
5. Kabeer, N. (March, 2005). Gender equality and Women Empowerment: a critical analysis of the third Millennium Development Goal. Gender and development, Vol.13, No.1, 13-24.
6. Hazarika, D. (2011). Women Empowerment in India: A Brief Discussion. International Journal of Educational Planning and Administration. ISSN:2249-3093., Vol.1, Number 3, pp199-202. Research India Publications. <https://www.ripublications.com/ijepa.htm>
7. Dr. Singh, S. and Dr. Singh, A. (June, 2020). Women Empowerment in India :A Critical Analysis. Tathapi: UGC Care Journal. ISSN:2320-0693, Vol-19, Issue-44. 227-253.
8. Dr. Kapur, R. Role of Women within the society.
9. Blessio, E. (November, 2014). The Woman: The Role of Women in today's society. <https://www.researchgate.net/publication/268189223>.

# Digitalisation of Healthcare Data and Privacy Concerns

**Dr. Rommani Sen Shitak**

Assistant Professor, Department of BAMMC  
K.P.B. Hinduja College of Commerce, Mumbai, India

## Abstract

*The COVID-19 pandemic has accelerated the shift towards technology driven services in various sectors such as healthcare, education, citizen-centric government services, among others. During the pandemic, a number of contact tracing apps and other surveillance tools were designed, developed and used. While these surveillance measures may have helped governments to curb the pandemic, they also raise concerns about the privacy of users. This research paper examines privacy concerns arising out of the digitalisation of healthcare data in India.*

**Keywords:** *privacy, personal data, COVID-19, digitalisation of healthcare*

## Introduction

The COVID-19 induced pandemic is perhaps one of the greatest challenges the world has seen ever since the Second World War. As the coronavirus pandemic started claiming more and more human lives and impacted the global economy; governments, public-health agencies, and other institutions the world over had to resort to extraordinary measures. To save the lives of people, governments and other administrative bodies imposed restrictions on their movement and implemented mechanisms for health tracking and reporting. These mechanisms include contact-tracing and self-reporting apps, many of them recording and sharing personal health information (Mikkelsen et al., 2020).

Most of the technologies used during health pandemics raise a variety of sociological and legal concerns. By their very nature, all the technologies deployed during the present pandemic collected sensitive personal data that no one would have been willing to share had it not been for the disastrous consequences unleashed by this contagious disease (Matthan, 2020).

## The COVID-19 Pandemic and the Response in India

The controversy in India over the collection of personal data for this public health crisis began with the launch of the 'Aarogya Setu' app by the Union Government on April 02, 2020. The Aarogya Setu app is essentially a contact tracing and self-assessment app which was launched to help people assess their risk of getting infected by the coronavirus (Singh, 2020). Within a short span of time it was downloaded by millions of Indians. The app functions by keeping track of other Aarogya Setu users that a person came in contact with using the phone's global positioning system (GPS) and Bluetooth capabilities, and notifies him or her if any of the contacts tests positive for COVID-19 (George, 2020).

Contact tracing is a fairly old and established public health technique which has often been used to combat the outbreak of such contagious diseases. Traditionally, it involved trained public health practitioners interacting with infected individuals and others who may have been identified by an



infected person (Ahmed et al., in press; Bagchi et al., 2020). In the case of India, this is perhaps the first time that technological solutions have been used to limit the spread of an infectious disease (Matthan, 2020). The COVID-19 pandemic came at a scale not seen before and the infection spread at an alarming rate. Consequently, a number of countries were left with no option but to use technological solutions to automate the contact tracing process so that infected people could be identified and isolated quicker than was possible with traditional methods (Ahmed et al., in press).

The data collected by the Aarogya Setu app can broadly be divided into four categories: demographic data such as name, age, gender; contact data giving details of individuals who came in contact with a person; self-assessment data and location data (Mukul, 2020). The Aarogya Setu app was made mandatory first for public sector employees, and then for private sector employees. Heads of private companies were liable to ensure their employees download the app. (Mukherjee, 2020; The Telegraph, 2020; The Hindu Business Line, 2020). As soon as the app was made mandatory, experts raised concerns over the amount of data collected by the app as well as the privacy implications of the same.

In the first week of May 2020, French ethical hacker and cyber security expert Elliot Anderson claimed that the ‘privacy of 90 million Indians was at stake’ (Outlook, 2020). A day later, the Union government assured that no data or security breach was noticed in the Aarogya Setu app. The then Union Minister for Information Technology Mr. Ravi Shankar Prasad claimed that the data submitted to Aarogya Setu by users was in an encrypted form. He explained that routine data remains for 30 days, this period is extended to 45 to 60 days for someone who is infected, and then automatically it will be deleted (The Print, 2020). Matthan (2020) too affirms that no data was retained beyond its requirement for the main purpose of contact tracing in the Aarogya Setu app (ibid).

It is important to note here that not just the Union Government but various state governments across India as well as local administrative bodies introduced their own apps and other technological solutions to tackle the crisis of the pandemic. The researcher found more than 40-apps related to COVID-19 tracking, quarantine enforcement and e-passes on the Google Play Store in November 2020. Many of these mechanisms were without any privacy safeguards while some of them directed the users to the privacy policy of state health departments’ web portals.

### **Digital Health Records and Privacy Issues**

The pandemic induced by COVID-19 has given a major impetus to digitalisation in the healthcare system in India (Mabiyani, 2020). On August 15, 2020, the Indian Prime Minister Narendra Modi announced the launch of the National Digital Health Mission (NDHM) in his Independence Day speech (ND, 2020, Patnaik & Kaur, 2020).

The National Digital Health Mission seeks to give every Indian citizen ‘a unique health identification which will serve as a digital repository containing all their health data such as clinical tests, illness, medical prescriptions, and reports’ (Mabiyani, 2020; ND, 2020). The Ministry of Health and Family

Welfare sent a letter in June 2020 to the principal secretaries (Health) of all states and union territories asking them to extend full support to this initiative. It further directed the states to send the details of healthcare professionals including doctors without breaching the norms of data privacy (Chandna & Dutta, 2020).

While the initiative deserves credit in some respects as India's healthcare data is much fragmented and scattered, considering that citizens interact with the healthcare system at multiple levels such as diagnostic centres, hospitals, private clinics, medical practitioners including traditional forms of medicine, and pharmacies (Deo & Jash, 2020). Private healthcare providers in India have long demanded digitisation so that issues such as duplication of diagnostic and consultation records, escalated costs as well as general inconvenience experienced in accessing timely and quality healthcare are resolved (Chandran, 2020; Mabiyan, 2020; Patnaik & Kaur, 2020). When a patient goes from one hospital to another in India, chances of digitally transferring his or her records from one to another are minimal.

While the actual implementation and success of the NDHM remains to be seen, critics have voiced concerns of this policy initiative being misused as a surveillance tool (ND, 2020). These fears are further augmented considering that there is no data protection law yet and in case of violation of privacy rights, citizens will have limited recourse to justice (Chandran, 2020). Moreover, India has been debating the draft Personal Data Protection Bill, 2019 whose ratification from the legislature is still pending. Under the Bill, health data is designated as 'sensitive personal data' as its disclosure can adversely impact individuals (Patnaik & Kaur, 2020).

A report published in *The Hindu Business Line* in September 2020 suggested that more than one lakh health IDs were created in six states besides being made mandatory for doctors in public hospitals in one city (The Hindu Business Line, 2020). Further, people who received their first dose of vaccination against COVID-19 early this year might have been surprised to find a Unique Health ID (UHID) on their vaccine certificates or most would have ignored it as there was hardly any public discussion on the same. A report published on *India Today's* news website in May 2021 reported that a number of critical social media posts had appeared wherein people argued that their consent was not taken before the generation of this health ID nor were they given any prior information (Dogra, 2021). This raises a question over the need for public debate on a sensitive subject such as this.

To take feedback from the public, the National Health Authority (NHA) invited suggestions on the draft Health Data Management Policy for the NDHM in August 2020 (Chandran, 2020; Mabiyan, 2020; ND, 2020). The stated objective of the draft policy was 'to provide adequate guidance and to set out a framework for the secure processing of sensitive personal data of individuals who are a part of the national digital health ecosystem in compliance with all applicable laws and international standards' (Mabiyan, 2020).

Experts have flagged issues in the draft Health Data Management Policy pertaining to data security, inadequate consultation with all stakeholders, and mandatory registration of individuals (patients and doctors) without their explicit consent (ND, 2020). Critics argue that though noble in its stated

objectives, the NDHM should not be rushed through and ideally be introduced after the enactment of a strong data protection law and with a robust independent regulator in place (Chima as quoted in Bakshi, 2020).

One can argue that many of the protective measures governments the world over introduced may have been well intentioned and therefore acquired popular support. However, concerns remain about their intrusiveness on personal privacy (Mikkelsen et al., 2020) and possibility of misuse in future. Bagchi et al. (2020) reiterate that health agencies must adopt best practices for cyber security so that the databases they produce during this pandemic and beyond are secure.

## Conclusion

The global coronavirus pandemic has brought about changes in almost all spheres of life. While the idea of centralised digital health records may be a good idea in terms of decreasing costs of healthcare services and removing inefficiencies, the associated risks of digitisation need to be taken care of. Care must be taken that technological solutions designed and implemented to address healthcare delivery issues should not compromise the data security and privacy of citizens in future.

## References

1. Ahmed, N., Michelin, R.A., Xue, W., Ruj, S., Malaney, R., Kanhere, S.S., Seneviratne, A., Hu, W., Janicke, H., & Jha, S. (in press). A Survey of Covid-19 Contact Tracing Apps. *IEEE Access*, Vol. 4 (2016). [https://www.researchgate.net/publication/343093194\\_A\\_Survey\\_of\\_COVID-19\\_Contact\\_Tracing\\_Apps](https://www.researchgate.net/publication/343093194_A_Survey_of_COVID-19_Contact_Tracing_Apps)
2. Bagchi, K.J., Bannan, C., Franklin, S.B., Hurlburt, H., Sarkesian, L., Schulman, R., & Stager, J. (2020, July 2). *Digital Tools for COVID-19 Contact Tracing: Identifying and Mitigating the Equity, Privacy, and Civil Liberties Concern (COVID-19 White Paper 22)*. Edmond J. Safra Center for Ethics. <https://ethics.harvard.edu/files/center-for-ethics/files/22civilliberties.pdf?m=1593709566>
3. Bakshi, A. (2020, September 3). Why the draft health data management policy raises red flags about privacy. *Mint*. <https://www.livemint.com/mint-lounge/features/why-the-draft-health-data-management-policy-raises-red-flags-about-privacy-11599060874405.html>
4. Chandna, H. & Dutta, A.N. (2020, June 27). Government moves to digitise health records quickly, asks states to send data but ensure privacy. *The Print*. <https://theprint.in/health/modi-govt-moves-to-digitise-health-records-quickly-asks-states-to-send-data-but-ensure-privacy/449675/>
5. Chandran, R. (2020, September 22). Privacy concerns as India pushes digital health plan, ID. *Reuters (Analysis)*. <https://www.reuters.com/article/india-health-tech-idUKL8N2G536U>
6. Deo, S. & Jash, S. (2020, July 6). Heralding a new health data regime in India. *Health Express, Observer Research Foundation*. <https://www.orfonline.org/expert-speak/heralding-a-new-health-data-regime-in-india-69259/>
7. Dogra, S. (2021, May 24). Took Covid vaccine using Aadhaar? Your National Health ID has been created without your permission. *India Today*. <https://www.indiatoday.in/technology/features/story/took-covid-vaccine-using-aadhaar-your-national-health-id-has-been-created-without-your-permission-1806470-2021-05-24>
8. George, P.J. (2020, April 26). Coronavirus - What are the concerns around the Aarogya Setu app? *The Hindu*. <https://www.thehindu.com/sci-tech/technology/coronavirus-what-are-the-concerns-around-the-aarogyasetu-app/article31434768.ece>
9. Mabiyan, R. (2020, August 30). Why data protection is crucial for successful implementation of National Digital Health Mission. *ET Healthworld.com (The Economic Times)*. <https://health.economictimes.indiatimes.com/news/policy/why-data-protection-is-crucial-for-successful-implementation-of-national-digital-health-mission/77834185>

10. Matthan, R. (2020). The Privacy Implications of Using Data Technologies in a Pandemic. *Journal of the Indian Institute of Science*, Vol. 100(4), 611-621, October 2020. <https://link.springer.com/content/pdf/10.1007/s41745-020-00198-x.pdf>
11. Mikkelsen, D., Soller, H., & Strandell-Jansson, M. (2020, June 15). *Privacy, security, and public health in a pandemic year*. McKinsey and Company. <https://www.mckinsey.com/business-functions/risk/our-insights/privacy-security-and-public-health-in-a-pandemic-year>
12. Mukherjee, A. (2020, May 10). The price of Covid Freedom may be eternal spying. *Bloomberg Quint*. <https://www.bloomberquint.com/view/coronavirus-contact-tracing-apps-mean-spying-end-to-data-privacy>
13. Mukul, P. (2020, May 14). Aarogya Setu: Who can access your data, and when? *The Indian Express*. <https://indianexpress.com/article/explained/coronavirus-aarogya-setu-who-all-can-access-your-data-and-when-6407175/>
14. ND, V. (2020, December 20). Health digitisation raises privacy concerns. *The Hindu Business Line*. <https://www.thehindubusinessline.com/opinion/health-digitisation-raises-privacy-concerns/article33378752.ece>
15. Outlook (2020, May 6). 'No Security Breach in Aarogya Setu App': Government Assures after Ethical Hacker raises Privacy Concerns. *Outlook*. <https://www.outlookindia.com/website/story/india-news-no-security-breach-in-aarogya-setu-app-govt-assures-after-ethical-hacker-raises-privacy-concerns/352150>
16. Patnaik, I., & Kaur, H. (2020, August 21). India needs a digital health mission. But it also needs data privacy law to ensure it works. *The Print*. <https://theprint.in/ilanomics/india-needs-a-digital-health-mission-but-it-also-needs-data-privacy-law-to-ensure-it-works/486111/>
17. Singh, Y. (2020, June 12). Drones, contact tracing apps became more acceptable during Covid-19 than ever before: India at UN. *Outlook*. <https://www.outlookindia.com/newscroll/drones-contact-tracing-apps-became-more-acceptable-during-covid19-than-ever-before-india-at-un/1863737>
18. The Hindu Business Line (2020, September 22). Privacy concerns surface as India pushes digital health plan, ID. *The Hindu Business Line*. <https://www.thehindubusinessline.com/info-tech/privacy-concerns-as-india-pushes-digital-health-plan-id/article32665637.ece>
19. The Print (2020, May 06). Aarogya Setu is absolutely robust, safe and secure: IT Minister Ravi Shankar Prasad. *The Print*. <https://theprint.in/india/aarogya-setu-is-absolutely-robust-safe-and-secure-it-minister-ravi-shankar-prasad/415583/>
20. The Telegraph (2020, May 03). Unhealthy Tag on Aarogya Diktat. *The Telegraph*. <https://www.telegraphindia.com/india/coronavirus-outbreak-unhealthy-tag-on-aarogya-diktat/cid/1769882>