

## Insights into career choices by college going students

Dr. Bhoomika Saroha

### Abstract

This study aims to identify the factors on the basis of which career choice is being made by college students. For this, the information is solicited from 111 college going student. It was found that most of them preferred working in private sector and like to stay in India rather than overseas job opportunities. They accorded importance to both monetary and non-monetary factors while choosing career. Further they rated ten traits in order of importance viz. salary, work-life balance, growth, stability, appreciation, prestige and power, decentralization, creativity, innovation and centralization in making career decisions.

**Keywords:** Insight, Career, Need, Job, Skills, Preference, Salary

### Objective of the study

To understand how college going students choose different careers and the factors influencing them.

### Introduction

"Career" is the series of job/positions an individual has during his or her entire working life, starting from the basic or lowest level and reaching to the top most one.

For e.g., 'X' student clears Probationary Officer (P.O.) exam and joins the bank as Assistant Manager and may retire as the Chairman of the bank.

During his career X holds various positions mentioned as under:

CHAIRMAN  
↑  
MANAGING DIRECTOR  
↑  
DEPUTY MANAGING DIRECTOR  
↑  
CHIEF GENERAL MANAGER  
↑  
DEPUTY GENERAL MANAGER

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## AN ENSEMBLE MACHINE LEARNING MODEL FOR AUTOMATIC PREDICTION OF PERCEIVED PERSONAL WELL-BEING OF INDIAN UNIVERSITY STUDENTS DURING COVID-19 LOCKDOWN

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COVID-19 has impacted personal well-being globally in a disruptive manner. Frequent lockdowns have slowed down dramatically the economy of every nation. There is a fear of future insecurity cropping up in the minds of the people. The paper aims to restructure the popular Personal Well-being Index (PWI) according to the relevant indicators that impacted students' life in India during the second wave of COVID-19. The students at Delhi state university participated in the research. The researchers use various machine learning algorithms such as Lasso Regressor (LR), Support Vector Regressor (SVR), and Decision Tree Regressor (DTR) to predict the perceived PWI. The R-squared value for LR, SVR and DTR are 0.9103, 0.9159 and 0.5339. Mean squared errors are 0.0034, 0.0035 and 0.0105 respectively. The five most influential determinants of perceived PWI were extracted. An ensemble model of the three mentioned base learners was designed to remove the overfitting and underfitting problems. The algorithm has demonstrated impressive performance, with an R-squared value of 0.9839 and MSE of 0.0014. A GUI-based prediction model was implemented in Python that triggered the ensemble model at the back end to predict PWI based on five questions only, along with recommendations for the respondents.

**KEYWORDS:** Perceived Personal WellBeing, Support Vector Regressor, Decision Tree Regressor, Lasso Regressor, Ensemble Model, COVID19

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## A Study On Factor Analysis For Leadership Effectiveness In Selected Organisations Delhi-NCR

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### ABSTRACT:

To compare the leadership effectiveness of the recruited and promoted employees' in organizations. Leadership effectiveness often has a direct impact on an enterprise's internal environment. In the present study selected organizations from Delhi-NCR has been taken for the study and a sample size of 288 employees was taken for the study. It is concluded from the present study that not only one but numerous factors are responsible for the effective leadership in selected organization Delhi-NCR.

**Keywords:-** Leadership, Effectiveness, Stakeholder, Infinite, Organisation, Delhi-NCR.

### INTRODUCTION

Leadership reflects a person's ability to make full use of surrounding resources to solve problems at minimum cost and improve the efficiency of the whole team in a specific environment. Leadership effectiveness often has a direct impact on an enterprise's internal environment. An efficient leader can always make the most appropriate decision at the most appropriate time to maximize his leadership effectiveness. Therefore, leaders not only need to have a more comprehensive understanding of the components of leadership effectiveness but also need to further improve their leadership styles on this basis. Therefore, the study of leadership effectiveness becomes very important in this scenario. Leadership effectiveness is a complex concept that attempt to capture infinite components like organizational contingencies & interpersonal behaviour. To meet this criterion and to build the trust of each employee or member in the management of the organization, the organization should have a clearly articulated

vision and mission. In that way, each person will know whether any particular decision or objective will help achieve the overall organizational purpose. Thus, each person, even if not directly involved in making.

### REVIEW OF LITERATURE

Reiche Sebastian B, Osland S.Joyce ,Mendenhall.E, Szkudlarek Betina(2022) Global leadership effectiveness: First steps and Future directions in this paper the author has concluded that global leadership effectiveness is a the value-added contributions toward a better understanding of the employees. After highlighting some of those contributions, the editors then discuss relevant directions for future research in global leadership effectiveness and organize their discussion around (1) antecedents, (2) conditions, and (3) dimensions of global leadership effectiveness. They conclude by listing some of the paramount research questions they believe should be addressed for the field to move

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## Do Cynicism, Self-Efficacy and Career Satisfaction have any Impact on Boundaryless Career Orientation of IT employees?

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### 1. Introduction:

India's impression on the world is that it is the fastest growing economy in terms of IT sector. IT sector has contributed to India's growth to a greater extent by inventing, reinventing and transforming itself in a short span of time. IT sector has seen a growth of around 35% every year in the past two decades and is still growing. It has not only stabilized the regional development but has also empowered the country's diverse human resources, but most importantly it has put the country on the global map. Also, the flourishing Indian economy has facilitated the IT sector to sustain its competitiveness in the global market.

The dominance of the IT job market is because of many factors, which include prolific growth of the Internet and e-commerce, lesser hardware and software prices allowing more businesses to upgrade their technology, rising demand for information security specialists spurred by the escalating frequency and sophistication of cyber-crimes, the emergence of smarter applications enabling companies to analyze data and develop unprecedented business. Technology changes with the speed of blink of an eye, and so do changes individual's career aspirations. Thus, loyalty for a single employer has bought into two major trends, namely, the 'push' factor of technology which is characterized by adaptable, flexible and autonomous traits, whereas, the second 'pull' factor is explained by apt work-life balance. Indeed, both the factors have changed the entire career orientation of employees.

Research on career has a rich history, however there is a transit in career patterns and research focus.<sup>89,78</sup> The difference of opinion by individual characteristics and perception of work and career success with different kaleidoscope has affected the career research.<sup>101</sup> The research on career always remains an alarming framework, and career development has always been considered as dominant ramification of human resource development. The conventional definition quoted by Wilensky (1961) defined Career as "succession of related jobs arranged in a hierarchy of prestige, through which people move in ordered (more or less predictable), sequence". A more simpler definition given by Arthur *et al.* (1989) defined career as the evolving sequence of a person's work experiences over time - the latter definition being most frequently used today.

The emergence of traditional upward career path and demise of organizational career leads to different career patterns i.e., protean career and boundary less career. The new career patterns

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Research Paper

# Trading strategies and weekly anomalies in the stock market: Mexico, Indonesia, Nigeria and Turkey

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## ABSTRACT

This paper explores the day-of-the-week impact and efficiency of the stock markets in Mexico, Indonesia, Nigeria and Turkey by using closing prices of a major index from each stock market. Parametric models (the Levene, Welch and Brown–Forsythe tests), nonparametric models (the Kruskal–Wallis and Bartlett tests) and econometric models (exponential general autoregressive conditional heteroscedastic mean (EGARCH-M)) are used to test the presence of the day-of-the-week effect. The results of the parametric and nonparametric tests show weekly anomalies in the stock market of Nigeria and Turkey. A run test also confirms weak-form inefficiency in the stock market of Nigeria. The EGARCH-M model reports negative returns and the highest volatility on Monday in Nigeria's stock market. This paper will help traders to create trading strategies, especially for trading in these indexes, as the returns will vary following the presence of the day-of-the-week effect.

**Keywords:** weak-form efficiency; Mexico, Indonesia, Nigeria and Turkey (MINT countries); day-of-the-week (DOW) effect; parametric and nonparametric tests; econometric model.

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**EXPLORING HR PRACTICES FOR TQM IN BUSINESS****Nisha Solanki**

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**ABSTRACT**

The competition is increasing every moment for the organizations and hence organizations are putting their best possible efforts to compete. This paper is designed with the objective to explore various HR practices that can contribute in achieving the TQM in Business. The basis for the study is taken from the aspects of competition that are cost reduction, differentiation and innovation. The extensive literature review from Scopus, J-gate, Ebsco and Springer databases are studied to integrate various aspects of TQM and HR practices that inculcate the competitive advantage for organizations. The framework may be developed for the reference to introduce and implement HR practices and manage TQM in the organization. The study may also help the professionals in designing the relevant HR practices for more value to the organizations. The linkage between various factors of the study may be helpful for the academicians and corporate.

**Keywords:** Total Quality Management (TQM), HR practices, Competitive advantage, Innovation, Differentiation.

**1. INTRODUCTION**

Jack Welch (1998) emphasized upon the fact that organizations need to develop their competitive advantage that is difficult to imitate by other competitors. The competitive advantage of any organization, depends upon the cost maintenance as well as the value that customers seek in the product and services they are dealing in. Ross Freedman, Forbes Councils member, well explained that now days, organizations are very wisely deploying the technology so that they can facilitate best experiences to employees and customers who are critical stakeholder of any business and can contribute directly to the competitive advantage.

According to Groysberg in 2019, the top management is hiring other professionals alike to them that hinders the diversity and create a gap. This issue along with the other operational challenges to the management can be resolved in a better way with the help of suitable HR practices. The best HR practices as per the organizations always proved to be a great support to contribute growth and success of the organizations. The survey of 5000 executives all around the world has also resulted into the more emphasis upon the solutions to day to day operations that can be made more conducive through HR practices.

The cost reduction was witnessed as most difficult challenge to tackle by the managers, Sean

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**An Analysis on Comparison of Stock Prices by Regression Analysis and  
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**Abstract**

Many different types of people find the stock market to be quite alluring, and practically every other household invests money there in an effort to increase returns. Data is essential to these forecasts, and cutting-edge methods like machine learning approaches offer extra support and a variety of forecasting values. Different models are now available to forecast stock market outcomes. Regression and FB Prophet are the two models that are utilised and examined in this study to forecast stock prices. We have been using the Infosys stock dataset for more than five years, and we anticipate the forthcoming months using this data. We looked at a number of models to see how they operated and produced results, and we decided to use regression and the Facebook Prophet model to forecast stock prices. We then used error% and MAPE (Mean Absolute Percentage Error) analyses to assess how well the models performed. As a result, the

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## ARTICLE

## Mediating role of Job Involvement between Workplace Spirituality and Work Satisfaction- An Evidence from Indian MSMEs

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### Abstract

This research paper analyzes the effect of workplace spirituality (WPS) on work satisfaction (WS). Further mediating effect of job involvement was examined between WPS and WS. For this study, a sample of 215 respondents from MSMEs situated in Delhi & NCR have been collected. The hypothesized model used in the study has been validated using structural equation modeling. Where relations among constructs such as WPS, WS, and JI are validated. Mediation analysis was done using PROCESS Macro in this study. The study results indicate that there is a relationship between WPS and WS. It was evident from the study results that the variables (meaningful work, sense of community, and alignment of values) of WPS are positively associated with job involvement. Furthermore, it was evident from the study's outcome that job involvement has a partial mediating effect between WPS and WS. The study's findings suggest workplace spirituality is an essential aspect of improving job involvement among employees. It is recommended to the managers in MSMEs to emphasize on the practices of workplace spirituality among employees for the desired outcome. This study contributes to the body of knowledge related with workplace spirituality in an organization.

**Keywords:** Workplace Spirituality; Job Involvement; Work Satisfaction; Mediation; MSMEs; India.

### 1 Introduction

Religious doctrine is part of most human beings, but in the workplace, it is known and called workplace spirituality. It has the potential to bring transformation in people, organizations, and societies. It is related to employees' activities and tasks and helps them perform with commitment and reach a level of satisfaction (Dubey et al., 2020; Altaf and Awan, 2011; Milliman, 2003; Jurkiewicz and Giacalone, 2004). It is found that many academicians and researchers are focusing on exploring the dimensions of workplace spirituality. It is gaining significance in today's time. Research has highlighted that workplace spirituality is positively associated with the satisfaction of employees (Garg et al., 2019; Van der Walt, 2014; Ashmos and Duchon, 2000; Nasina, 2011). Every concept is backed by appropriate theoretical evidence, in the case of workplace spirituality (WPS). It is at a developmental stage (Duchon and Plowman, 2005; Shankar Pawar, 2008; Roof, 2015), but the concept is deep-rooted in the "organization and management theory" (Driscoll and Wiebe, 2007). The study has postulated the facts from Indian MSMEs (Micro Small and Medium Enterprises), where spirituality is persistent in every

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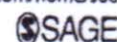
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# Assessing the Business Ecosystem for Indian SMEs: A Resource-Based View

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## Abstract

The purpose of this study is to develop a MSME business facilitator index (MSME-BFI) to investigate the major factors which lead to the growth and development of MSMEs in the top performing and poor performing states of India. The data for various parameter for estimating the index such as infrastructure (road and electricity), human resources (labour participation rate and literacy rate), information communication uses (computer and internet), fiscal discipline and other economic indicators is collected from different government surveys and reports. The study revealed that states should focus on labour force, infrastructure, ICT technology, credit facilities, financial management and economic governance for the growth of MSME's. There exist major disparities in the performance of the MSMEs, when divided into top performing and poor performing states, respectively. The research helps policymakers and government to focus on the leading barriers/factors which lagged the states to achieve the higher economic development.

## Keywords

business facilitator index, ICT, India, MSMEs, performance, states

## Introduction

In today's globalised era, both in developed and developing economies, small business enterprises are acknowledged as a source of growth engine and, thus, governments are collectively working for their progress (Naala et al., 2017). At individual level they provide employment opportunity and raise the standard of living but at national level they help to mobilise the resources, raw materials for large and intermediaries goods (Bwisa, 2011). In current business structure SMEs are facing huge competition within

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# Face Recognition for Examinee Verification

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In the modern world, facial recognition is playing a vital role in the field of biometric technologies. The reason being simple, it's a very efficient and developed method compared to the other methods. Its being so precise, errorless and effective gives it an edge over other technologies. There are lot of fields where this fast growing technology is yet to show its effectiveness, one of which is examinations, the identification of the students during examinations. Different kinds of biometric technologies are used in the examination sector in order to identify the students appearing for the exams. Biometric technologies uses physical features to identify the person appearing in the exam but several of these methods make room for errors and cheating which can be improved by execution of facial technology. In the present age physical verification of examinee will be generally through checking of admit card which is a very time consuming and tedious process. The aim of this research is to replace the traditional methods of examinee authentication with new technology of facial verification for faster, efficient and accurate identification of candidate. In this research paper, the approach of Eigenface and fisherface has been used. These techniques are recent and have apparently promising performances, and are representing new trends in this field.

Keywords: Face Detection, Examinee identification, Face Authentication, Eigen faces, Fisher Faces.

## 1. INTRODUCTION

In past years several methods have been proposed for detecting examinee identity. Different kinds of biometric technologies are also used in the examination sector in order to identify the students appearing in the exams. Biometric technologies use physical features to identify the person appearing in the exam. Basic biometric technologies involve an iris scanner, Fingerprint Scanner, Voice recognition etc.

### 1.1 Biometric Technology

Biometric technologies are a method of body-based identification that authenticates a person's identity on the basis of physical features, including facial appearance, iris patterns, and speech.

### 1.2 Fingerprint Scanner

A fingerprint scanner is a technology that recognizes and authenticates an individual's fingerprints in order to grant access to a computer system or physical facility (Kelly, 1971). It is a form of biometric security technology that uses a combination of hardware and software techniques to identify an individual's fingerprint scans.

Advantages of Fingerprint Scanner

- Fingerprint tackles the inherent factor or "who you are" aspect of user authentication since it provides tangible proof to verify the identity of the person concerned (Zhao, R. Chellappa, and Rosenfeld, 2003) (Zhou, Hu, and Shabaz, 2022).
- Physical traits are much harder to replicate than information factors, such as certificates, and are harder to fake than possession factors, such as an ID card or a physical access token.



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## Technology-enhanced Teacher Education

### Abstract

Technology is a science of techniques i.e. methods of doing or getting things done, related to any art or science or a particular profession. It is not just one prescribed technique, but a scientific way of developing techniques. Technology can improve the effectiveness of utilization of natural resources and capital while education is concerned with the development of human resources. Education and technology are indispensable ingredients for national, industrial, and economic development/ Both are like two sides of a coin education keeps the path of innovations and research alive that enables the world of technology to get enriched day by day. Education, the torchbearer of all innovations is also influenced by technological advancements. The Education system in which the teaching-learning process is of prime importance. The learners and the teachers are the active components of the system. In this process of teaching-learning, teaching is engineering and soul doctoring while learning is concerned with the modification of behavior through experience. The term 'human engineering' has an implicit meaning of the possibility of modifying and constructing human behavior in intended ways based on certain technical procedures. So through teaching, the human personality can be engineered and through proper doctoring, it can be maintained healthy. Thus the role of the teacher in this teaching-learning process is of immense importance because the teacher has a key position in this process (Yashpal committee Report, 1993). The report further emphasizes that "the teacher is engaged in the most dedicated task of human engineering with whatever resources and tools are available to him. All fine materials best textbooks, modern gadgets, and laboratory equipment will turn to dust in the hands of an incompetent teacher. Only that teacher who knows his art has a sense of purpose and has the necessary enthusiasm to share his learning with students will deliver the goods."

### Why Technology-enhanced Teacher Education

In the last strides of the twentieth century, both schools and society have witnessed bizarre hi-tech advancements. We are living in a new economy powered by technology, fueled by information, and driven by knowledge. Technology has influenced every sector of society i.e. trade, industry, science including education. Technology has entered the classrooms as a support system in the form of television literary and computers which include wire, web, and windows leading to connectivity, networking, and applications. Given these changes, constant updating of knowledge has become inevitable for professional personnel at all levels in the industry as well as in academics specifically among the teachers as they have been entrusted with the most important task of human engineering

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and development of intellectual capital, thereby molding the destiny of a nation. Both educational administrators and teachers in our school, however, are ill-equipped to deal with the enormity and complexity of the technological changes. The teachers know too little about how best to use computing and communication technologies for effective teaching-learning. They need to better understand what aspects of learning can be effectively facilitated by technology and which aspects require traditional classroom interactions with the accompanying social and interactive contexts. They also need to determine how best to teach our citizens the powers and limitations of new technologies and how to use these technologies effectively in their personal and professional lives.

To meet the demands of the twentieth century, it has become imperative for Teacher Education Institute to integrate current and emerging technologies as an integral part of the instructional practices in Teacher Education (TE) so that the further generation in schools get the exposure to the new world. Moreover, it will help in the preparation of skilled and competent teachers who will be in a position to deliver quality education infused with technology to prospective teachers which is a prerequisite for creating an "Empowered Society".

### **Evolution of Empowered Society**

Our global society which started its journey from an agrarian society to industrial society to an information society to a knowledge society needs to develop into an empowered society-"a society where every individual has the right to lead a full and enriched life." In the agrarian society, manual labor was a critical factor, in the industrial society management of technology, capital and labor provided the competitive advantage; in the information society, networking within the country and with the other nations and software products drove the economies; in the knowledge society, knowledge is the primary production resource instead of capital or labor. A knowledge society is endowed with the ability capacity to generate and maintain the knowledge infrastructure, develop knowledge workers and enhance their productivity through the creation, growth, and exploitation of new knowledge.

The transformation of global societies to knowledge societies, however, does not guarantee economic growth with 'equity' either within or between nations. The answer may lie in working towards another society i.e. Empowered society where all forms of knowledge get recognized and valued, where all people have open and timely access to information and knowledge; the capacity to absorb and interpret information, and avenues opportunities to use knowledge for informed decision making. The factors which distinguish a knowledge society from an empowered society are that the latter has the potential to develop skills, build capacities and provide equity of access and experience.

In the empowered society, the objective is to enable all individuals to live an enriched life. The workers instead of being skilled or semi-skilled shall be knowledgeable, self-empowered & flexibly skilled, and would adapt to new technologies seamlessly. The type of work instead of being structured and hardware-driven will be less structured and software-driven. In the education system instead of going by the textbook, teaching will be promoted by creative, interactive self-learning, formal and informal with a focus on values, merit, and quality. Students will be provided with enriched and valued opportunities to build required capacities among them.

### **Ingredients of Empowered Society**

An Empowered Society focuses on the development of human resources to enable them to

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# Image Captioning Generator Text-to-Speech

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With the rapid growth of artificial intelligence in recent years, image caption has increasingly grabbed the attention of many artificial intelligence researchers and has become a fascinating and challenging task. In this research work a model is created for blind people that can guide and support them while traveling on the highways just with the help of a smartphone application. This can be accomplished by first converting the scene in front of the user into text and then converting text into voice output. The method for the generation of image legends based on deep neural networks. With an image as an entry, the method can display an English sentence describing the contents of the image. The user first provides a voice command, then a quick snapshot is captured by the camera or webcam. This image is then fed as input to the image caption generator template that generates a caption for the image. Next, this caption text is converted to speech, which gives rise to a voice message on the description of the image. The objective of the research work is to develop a model that can help the blind people while travelling with the help of smartphone application.

Keywords: NLP, Image Captioning, Computer Vision, ML.

## 1. INTRODUCTION

When there is a descriptive sentence for a given image, creating captions is a fascinating artificial problem. It consists of two computer techniques for understanding the scene in the image and then applying a language model by applying natural language processing for correctly translating image comprehension into words. Image captioning has a wide range of uses, including editing suggestions, the use of visual assistants, image insertion, the visually impaired, social media, and a variety of other language processing applications. In-depth learning models are capable of producing positive outcomes when it comes to captioning issues. Rather than using complex data or a set of custom-designed models one after the other, a single end-to-end model can be specified to make predictions of captions provided an image. The image captured by the camera is given as an input to the model which predicts the captions is shown in fig 1. The novelty of the study is that it uses the already existing models for image captioning and text to speech conversion to create a new framework for a smartphone. The Caption Generation Process based upon GLOVE model is shown in fig 2.

The amount of memory that is available on the GPU that is used for training purpose, and also the amount of time allowed for training, decide the neural network's limits. Using faster GPUs and larger databases, the results based on the findings can be enhanced.

There are several APIs available for converting text into speech in python. These APIs are the Python Text to Speech API popularly known as the pyttsx3 API. pyttsx3 is a simple-to-use tool which converts text into audio.

Motivation for research work are as follows:

- The application of image caption is extensive and significant, for example, the realization of human-computer interaction. This motivates us to develop the model to help the blind people.
- The development of the image description system may help the visually impaired people "see" the world in the future. Recently, it has drawn increasing attention and become one of the most important topics in computer vision.



## Review

# Application of Optimization Techniques in the Dairy Supply Chain: A Systematic Review

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**Abstract:** *Background:* The global dairy market is experiencing a massive transition as dairy farming has recently undergone modernization. As a result, the dairy industry needs to improve its operational efficiencies by implementing effective optimization techniques. Conventional and emerging optimization techniques have already gained momentum in the dairy industry. This study's objective was to explore the optimization techniques developed for or implemented in the dairy supply chain (DSC) and to investigate how these techniques can improve the DSC. *Methods:* A systematic review approach based on PRISMA guidelines were adopted to conduct this review. The authors used descriptive statistics for statistical analysis. *Results:* Modernization has led the dairy industry to improve its operational efficiencies by implementing the most effective optimization techniques. Researchers have used mathematical modeling-based methods and are shifting to artificial intelligence (AI) and machine learning (ML)-based approaches in the DSC. The mathematical modeling-based techniques remain dominant (56% of articles), but AI and ML-based techniques are gaining traction (used in around 44% of articles). *Conclusions:* The review findings show insight into the benefits and implications of optimization techniques in the DSC. This research shows how optimization techniques are associated with every phase of the DSC and how new technologies have affected the supply chain.

**Keywords:** dairy industry; supply chain; optimization; machine learning; artificial intelligence; mathematical modelling



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## 1. Introduction

The dairy industry worldwide is now undergoing a significant transformation. United Nations Food and Agriculture Organization dairy price index demonstrates costs 26% below the maximum in February 2014 [1]. Trade sanctions against Russia and the removal of "milk quotas" inside the EU have led to a time of oversupply and minimum pricing for milk products from China [2]. Despite this, the dairy industry is growing and is expected to reach 177 million tons of powdered milk by 2025 at an annual growth rate of 1.8%. Increasing urbanization and rising prosperity in developing economies are responsible for this rise [3]. Dairy producers in Europe have utilized intervention stocks to protect themselves against lower worldwide prices. India is the top milk producer in the world, making up 23% of the world's milk. The compound annual growth in milk production in the country is about 6.2%. In 2020–2021, milk production reached 209.96 million tons, up from 146.31 million tons in 2014–2015 [4]. The top five milk-producing states are Uttar Pradesh (14.9%), Rajasthan (14.6%), Madhya Pradesh (8.6%), Gujarat (7.6%), and Andhra Pradesh (7%) [5]. It was announced in June 2020 by the Indian government and the Department of Animal Husbandry and Dairying that there would be a \$2.1 billion infrastructure



## A Study on the Perception of Undergraduates about Employability Skills

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### Abstract:

This study aims about assessing the perspective of undergraduates towards employability skills. Descriptive research method is used and through snowball sampling 119 respondents filled a questionnaire developed by the researcher. It was found that majority of the students wish to go for job placement after the completion of graduation. Specifically they opted banking sector or government jobs to go for after graduation degree. For better placements students consider practical knowledge and internships important during their course of study. Moreover, among all the employability skills the first ranking was given to Team work, followed by Time management, communication skills, problem solving, leadership skills, ability to work under pressure, accountability, work ethics, adaptability, computer proficiency, creativity and the lowest ranking was given to writing skills according to undergraduate students.

**Keywords:** Undergraduates, employability skills, perception

### I. Introduction

With a high demographic dividend, almost 50% of India's current population - over 1.2 billion people is under the age of 26, which might become the young indispensable asset for the country. According to India skill report 2022 released by WheelBox, about 46.2% of the candidates were found to be employable when compared with 45.97% in year 2021. The report also highlighted that the female employability witnessed an upward trend and now is at 51.44 % whereas male employability is at 45.97%.

Employability skills, according to the International Labour Organization (ILO), are "the skills, knowledge, and competencies that can increase a worker's capability to get and then retain a job, progress at work and cope with change in job, secure another job if he or she wishes or has been laid off, and enter the job market more conveniently and easily at different stages of the life cycle." (Brewer et al. - 2013 - *Enhancing Youth Employability What Why and How*. Pdf, n.d.)

Employability skills are the basic skills that are requisite for an individual to get the job, and then maintain and to do well on that job, that is, the skills that are required by an individual to get the status of being 'employable'. In combination with good technical and theoretical knowledge, employers often require their employees to have certain skills that can help the employees to carry out the role given to them to the best of their capabilities. These roles can include time management, team work, good communication skills, work ethics, creativity, computer proficiency, adaptability, etc. These skills assist the potential employees to get the status of employable assets.

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Employability skills can be mainly categorized into three categories i.e. a) Basic Academic Skills like reading, writing, arithmetic, Oral Communication etc. b) High Order thinking skills like Learning, Reasoning, Creativity, Decisions Making, Problem Solving, etc. c) Personal Qualities like Responsibility, Self Confidence, Social Skills, Honesty, Integrity, Adaptable and Flexible, Team Spirit etc.

Employers are looking for these skills in their potential employees nowadays due to the increased Globalization and frequently changing business environment. With the disappearance of the restricted, closed and protected economy, successfully competing with the world's talent is vital to the success of companies as well as individuals.

### II. Literature Review

**Mona Khare (2012)** in the study titled "Employment, Employability and Higher Education in India: The Missing Links" mentioned that the employability of Indian youth has come up as a very big concern in the past years and it is not just the uneducated and untrained that lack skill set but it is also the educated and trained that consistently fall below the minimum required standards.

**P. Vanitha (2018)** did a study on Enhancing Employability Skills of graduates in India. The purpose of this study was to identify the employability skills that employers see to be important for entry-level graduates and the skills that are required for sustainable employability of graduates in India. In majority of the Indian colleges, students are from distinct academic backgrounds coming from

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04. Conceptual framework for effective implementation of ERP with respect to Indian Public Sector Enterprises (gallery/3005.pdf).

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## Several inequalities involving the generalized multi-index Mittag-Leffler functions

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MSC 2010 Classifications: 33E12 ; 26D07.

Keywords and phrases: Gamma function, Pochhammer symbol, Mittag-Leffler function, generalized Mittag-Leffler functions.

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**Abstract** In the present article, we choose the generalized multi-index Mittag-Leffler function to establish some presumably new and potentially useful inequalities. Also, we point out that the results presented here can be reduced to those corresponding to some relatively simple Mittag-Leffler functions including certain known ones.

### 1 Introduction

In 1903, Gösta Mittag-Leffler [7] introduced and investigated the Mittag-Leffler function defined by

$$E_{\alpha}(z) = \sum_{n=0}^{\infty} \frac{z^n}{\Gamma(\alpha n + 1)} \quad (\Re(\alpha) > 0; z \in \mathbb{C}), \quad (1.1)$$

where  $\Gamma$  denotes the familiar Gamma function (see, e.g., [8, 9, Section 1.1]). Here and in the following, let  $\mathbb{C}$ ,  $\mathbb{R}$ ,  $\mathbb{R}^+$  and  $\mathbb{N}$  be the sets of complex numbers, real numbers, positive real numbers and positive integers, respectively, and let  $\mathbb{N}_0 := \mathbb{N} \cup \{0\}$ . Since then, various extensions (or generalizations) of this Mittag-Leffler function have been presented. The generalized Mittag-Leffler functions have been connected and applied to diverse research fields such as mathematics itself, engineering, statistics, biology, chemistry, and physics (see, e.g., [2, 19, 11, 10, 18, 17]).

Among numerous extensions of the Mittag-Leffler function (1.1), we choose to recall some of them. Wiman [3, 4] generalized the Mittag-Leffler function (1.1)

$$E_{\alpha, \beta}(z) = \sum_{n=0}^{\infty} \frac{z^n}{\Gamma(\alpha n + \beta)} \quad (\Re(\alpha) > 0; \beta, z \in \mathbb{C}). \quad (1.2)$$

Prabhakar [21] extended the  $E_{\alpha, \beta}(z)$  (1.2)

$$E_{\alpha, \beta}^{\gamma}(z) = \sum_{n=0}^{\infty} \frac{(\gamma)_n}{\Gamma(\alpha n + \beta)} \frac{z^n}{n!} \quad (\Re(\alpha) > 0; \beta, \gamma, z \in \mathbb{C}). \quad (1.3)$$

Srivastava and Tomovski [11] gave a further extension of (1.3)

$$E_{\alpha, \beta}^{\gamma, \delta}(z) = \sum_{n=0}^{\infty} \frac{(\gamma)_{\kappa n}}{\Gamma(\alpha n + \beta)} \frac{z^n}{n!} \quad (1.4)$$

$$(\Re(\alpha) > \max\{0, \Re(\kappa) - 1\}, \Re(\kappa) > 0; \beta, \gamma, z \in \mathbb{C}).$$

The special case of (1.4) when

$$\kappa = q \in (0, 1) \cup \mathbb{N} \quad \text{and} \quad \min\{\Re(\beta), \Re(\gamma)\} > 0$$

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## THE EDUCATIONAL SYSTEM OF THE FUTURE AS IT WILL EXIST IN THE DIGITAL WORLD

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### Abstract

Technology has evolved into the most essential component of our lives, and it is assisting in the resolution of the many complications that are associated with our busy lifestyles. In the 21st century, science and technology are playing an essential part in the process of making the economy of the whole world stronger. According to the findings of several experts, a company or economy that does not possess advanced technology is unable to experience future expansion. Its relevance can now be seen in every industry, and education is one of those sectors where it can be seen. In many different ways, the field of education has been significantly altered as a direct result of the impact that technology has had. Technology and other electronic devices are increasingly being used in the classrooms of both public and private schools, which has made the teachers' jobs much simpler. When education is combined with technology, according to the findings of several surveys that were carried out by education specialists, both students and teachers find the subject matter to be more interesting. This is because the exchange of knowledge becomes more interactive, straightforward, and uncomplicated. The Internet is largely responsible for the increased availability of technological resources to the general public.

**Keywords:** Expert systems, management, Artificial intelligence, human resource, education specialists

### Introduction

Many students in today's digital age are gradually but surely gravitating towards taking their education in the form of online digital courses. These courses are becoming increasingly popular in almost every academic discipline, including business, the arts, engineering, as well as programming languages and technical tools. Learners from all over the globe are eagerly filling up the seats in the various online courses that are already accessible in each and every discipline thanks to the proliferation of digital education. Digital learning is a sophisticated technology medium that provides students with a great degree of freedom. It enables students to study whenever they want, wherever they want, and at whatever pace is most comfortable for them without having to worry about timetables or schedules. It gives students the freedom to focus on the aspects of their education that are most important to them. The proliferation of technology developments is bringing about fresh shifts in the manner in which education is disseminated and understood by students. Since education is increasingly being delivered through digital platforms, the reach of educational programmes is becoming greater with each passing day. The use of digital education is facilitating new options for teaching, learning, and personal development for students and educators alike, consequently enhancing the learning process as a whole. (Lindquist & Melinder, 2019)

### Statement of the Problem

The broad aim of the study is to analyse and explore the paradigm shift in the education system in the era of millennials focusing on the hybrid and blended modes of teaching pedagogies helping the child to prepare for the future roles.

### Objectives of the study

To The research aimed to fulfill the following objectives:

- E-Learning platforms as adaptation of the modern learning technology
- Assessment of E-learning with respect to its pros and cons



## ENTREPRENEURSHIP: A KEY COMPONENT FOR NATIONAL DEVELOPMENT IN AGRICULTURE, HEALTHCARE AND TECHNOLOGY

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### Abstract

Entrepreneurship is essential for the economic growth of a nation, creation of jobs, and social welfare. In addition to having significant consequences for policymakers, donors, development organisations, business owners, and managers, the meeting point of the entrepreneurship and development economics is a difficult and potentially fruitful area of research for social scientists. The concept of entrepreneurship, however, is rarely discussed in writings that also take into account how important technology, healthcare, and agriculture are to the growth of impoverished and emerging countries. Digital technology entrepreneurship provides commercial companies and the public sector with digital services, facilities, and solutions that consumers can only partially generate on their own, which helps to tackle a substantial portion of the challenges associated with the digitalisation of the economy. The global advancement of healthcare depends on the notions of creativity, innovation, and entrepreneurship. The healthcare industry has seen tremendous improvements over the years that have improved life expectancy and quality of life. A larger and more disadvantaged portion of society can be directly employed by and supported by the agricultural entrepreneurship sector, which has a huge potential to increase national income.

**Keywords:** Entrepreneurship; Economy; Development; Technology; Healthcare; Agriculture.



## Gender Inequality in Indian Scenario: Issues, Challenges and Initiatives

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### Abstract

Gender Stereotype is a long-term problem in our society and females are discriminated against in various ways in India, although legally women have equal rights. So, there is a great need to focus the society on gender issues so that there would be no discrimination based on gender. Women empowerment through gender stereotypes is one of the key factors to unlock the potential of women. This paper elaborates strategies that should be adopted in our society to promote gender equality. As we know "Power of women as the greatest potential for the growth of the economy". To achieve the empowerment of all women and girls will establish policies and institutions to build a society where men and women support each other. Many activities need to focus where we lack gender responsive indicators and sex disaggregated baseline data and having limited monitoring information. There should be study on some constraints to assess possible differences in participation, benefits and impact between men and women.

**Key Words:** Gender inequality, Women, Empowerment, Stereotype, Gender.

### Introduction

"One is not born, but becomes a woman. No biological, psychological, or economic fate determines the figure that the human female presents in society: it is civilization that produces this creature, intermediate between, male and eunuch, which is described as feminine. Only the mediation of someone else can establish an individual as another"-De Beauvoir (1949) says on gender inequality

**Gender:** It refers to social attributes that are learned or acquired during socialisation as a member of given the community. Gender is therefore an acquired social aspects and opportunities associated with being male and female and the relationships between women and men and girls and boys, as well as the relations between women and those between men. These opportunities, attributes, and relationships are socially constructed and are learned through socialization processes. Gender determines what is expected, allowed and valued in a woman or a man, a girl or a boy, in a given context. They are time-specific and changeable. In most societies there are differences and inequalities between women and men in responsibilities assigned, activities undertaken, access to and control over resources, as well as decision-making opportunities.

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# Space Finance - An Investment Opportunity for Green and Sustainable Future

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## Abstract

For quite a long time, government alone financing, launching, working, and returning space items and people. Scientific exploration of space propulsion, route, correspondence, and life security progresses brought about financially feasible innovations and business strategies. Scientific research and mission objectives relied upon government space mission needs and spending plan assignment processes. Government funding of investigation actually prevails, outspending private area investment. Business satellites are funded in light of their terrestrial incomes and the endangers of send off and in-service life. Simultaneously, developing nations are sending off satellites and missions, broadening space business. Space finance is an innate boundary or right. Space finance is a quiet innovation empowering influence or mission progression risk. Space investigation is an exceptional setting to rethink better space and earthbound finance option. Finance is crucial for advance serene disclosures and utilization of space resources. On the off chance that investigating space is to be really open to all mankind, choices for supporting and safeguarding space explorers and missions should extend appropriately and comprehensively, beyond governments and high net worth entrepreneurs. This research paper attempts to cover the three main objectives -need for space finance, investment opportunity in space finance and country wise investment in Space finance tech sector.

**Keywords:** Space Finance, Space resources, Innovation, Global Space Finance

## Introduction:

Space investigation is entering into new phase of market extension. Driving this extension are billionaire explorers drawing in start-up up business people and mission groups they collect from industry veterans and new ability, meeting up to disturb previous generations of space industry organizations. The new company founders have the capital and try to develop the market for commercial exercises in space. Government space organizations are taking benefit of the new organizations' cash-flow to reduce public subsidizing of business missions, while privatizing large portions of mission prototyping hazard and investment return. Privately coordinated and market-funded space exploration is huge. Notwithstanding, gaps and dangers in space exploration arise due to the actual energy of tying private space missions to the excitement and limit of space pioneers to finance them

These days, unprecedented inventions and an unused innovative soul are rapidly framing the new space economy. The space area is seeing the ascent of unused confidential performing specialists who see fantastic business open doors in space exploration and double-dealing through cutting edge innovation and the information upheaval. Historically, Europe has been at the very front of room investigation, focusing profoundly on space infrastructure. The EU can in any case flaunt scholarly and scientific accomplishments yet chances losing them in the following flood of space innovation in the event that it doesn't make a move to sustain more endeavors inside the modern space sector. There is an overall conviction that space ought to be utilized to support all Humanity, yet just a few nations have the necessary mechanical base for admittance to space. Space innovations with their effect on science, the economy and the prosperity of residents are, for the most part picked by developing nations as one of the priority area of technological development. Be that as it may, the Global Space Industry as of now has an excess of limit, and there are questions about the requirement for extra limit in developing nations.

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AN ANALYSIS OF FACTORS AFFECTING ONLINE SHOPPING BEHAVIOR OF  
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**Abstract**

India has grown in importance as a highly attractive market for international retailers. Indian customers have just recently started to appreciate the advantages of shopping online after the recent economic reforms. However, online shopping is a complex phenomenon and encompasses many aspects, there is very little research regarding online consumer behaviour. Therefore, it is crucial to determine the factors affecting Indian customers' online shopping behaviour in order to determine how to encourage their online shopping behaviour. The aim of this research is to find out factors affecting consumers attitude towards online shopping in India by considering consumer risk perception about online shopping in India. The research included previously identified factors, i.e., product risk, convenience risk, domain specific risk, financial risk, return policy risk, non-delivery risk, subjective norms, attitude, perceived controlled behaviour. For this, data was collected from Delhi NCR region. The sample size of the study was 182 respondents and random sampling method was used. The data was analysed using SPSS version 23. It was found that in this research financial risk, non-delivery risk, convenience risk, perceived behavioral control, subjective norms and domain specific innovativeness are found to be significant factors for shopping online.

**Keywords:** online shopping, consumer attitude, Indian consumer behavior, perceived risks and consumer attitude.

**Contribution/Originality:** This study provides evidence for impact of perceived risk, perceived behavioral control, subjective norms and domain specific innovativeness on consumers online shopping behaviour in India.

**1. Introduction**

E-commerce has become imperative characteristics in the era of Internet. In the last few years, the Internet has become a huge market for exchange of goods and services. The Internet has been used as a medium in developed countries because it offers products within 24 hours and cover a wide area. But in some developing countries, like India, B2C (Business-to-Consumer) e-commerce has been below the anticipated portion of the retail business (Slyke et al., 2002). E-commerce has become the cutting edge for our business today. The internet with world wide web (WWW) has created a thought-provoking area for the world (Liang & Lai, 2000).



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## A Study on Factors that Contribute to the Success of B2B Ecommerce towards Manufacturing Industry

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**Abstract:** B2B e-commerce plays a crucial role in the growth and development of small-scale and micro industries, particularly in the manufacturing sector. This study aims to investigate the factors that contribute to the success of B2B e-commerce in the precision components manufacturing industry in South India. To assess the knowledge levels of professionals in this industry and their actual utilization of e-commerce, an "E-Commerce Conversance Index" is established. The research provides valuable insights into B2B e-commerce activities in South India, highlighting the adoption rates and the sectors where e-commerce has been implemented.

The findings indicate a moderate level of B2B e-commerce adoption, with approximately 59.21% of the sample comprising adopters and 40.79% non-adopters. Moreover, the study reveals that B2B e-commerce has permeated diverse sectors within the manufacturing industry. As expected, multinational corporations are leading the way in B2B e-commerce adoption in India, resembling trends observed in developed nations. In such countries, the private sector typically takes the initiative in adopting new technologies. This research focuses specifically on the factors that contribute to the success of B2B e-commerce in the engineering industry located in South India.

**Keywords:** B2B e-commerce, manufacturing industry, South India, precision components, adoption rates, success factors.

### 1. Introduction

The advent of e-commerce has revolutionized the way businesses operate, transforming traditional business-to-business (B2B) transactions [1-3] and opening up new opportunities for companies across various industries. In recent years, B2B e-commerce has gained significant traction, enabling organizations to streamline their procurement processes, enhance supply chain efficiency, and reach a broader customer base. Within the manufacturing industry, B2B e-commerce has emerged as a powerful tool for driving growth, enabling manufacturers to connect with suppliers,

distributors, and customers in a seamless digital environment [4].

The purpose of this study is to investigate the factors that contribute to the success of B2B e-commerce in the precision components manufacturing industry, with a focus on the engineering sector in South India. By understanding the drivers and barriers to B2B e-commerce adoption [5-6] and examining its impact on the overall functioning of the manufacturing industry, valuable insights can be gained to inform strategies for maximizing the benefits of e-commerce in this context.

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# WoM-based deep BiLSTM: smart disease prediction model using WoM-based deep BiLSTM classifier

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## Abstract

Diagnosis of cardiovascular disease has been significant due to the increased number of people affected by cardiovascular diseases. Though various methods were developed in classifying the diseases and ensuring the privacy for secure data transfer, most of the existing methods suffer from accurate decision making. Hence, this research tends to introduce a well-suited disease prediction model with the help of an improved deep Bidirectional Long Short Term Memory (Deep BiLSTM). The hyper-parameters related to the optimized deep BiLSTM classifier are tuned by the proposed optimization named Whale-on-Marine optimization (WoM) algorithm. The research-based on the developed deep BiLSTM classifier for heart disease utilizes the Elliptic Curve Cryptography (ECC) dependent Diffi-Huffman algorithm to ensure secure data transmission in the network. The effective decision making and secure data transfer are performed using the WoM-based deep BiLSTM classifier, where the WoM optimization reflects the characteristics of marine and Whale to determine the space between the prey and the predators, which improves the exploitation integration and exploitation tendencies. The performance metrics reveal that the proposed optimization based on deep BiLSTM effectively predicts heart diseases. The optimized deep BiLSTM classifier achieves a sensitivity of 97.93%, specificity of 97.52%, F-Measure of 97.658% and accuracy of 97.53% for the training percentage in Statlog, Cleveland, and Hungary database.

**Keywords** Deep BiLSTM · WoM optimization · Heart disease prediction · ECC based Diffi-Huffman algorithm

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## Emojifier — Facial Emotion Recognition Using Multiple Algorithms

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**Abstract.** In facial emotion recognition system the main part is the face detection and emotion recognition which works simultaneously in a systematic way. It is a complex task because of the unwanted objects, orientation, color, etc. in an image or frame of a video and this type of real-time system requires specialized hardware. Many emotion recognition systems have been developed but in this paper emotion recognition is implemented in real time system with acceptable accuracy. Basically for FER (in many papers FER is termed as Facial Emotion Recognition or Facial Expression Recognition but in this paper the expanded form of FER is Facial Emotion Recognition because generally it is abstraction and analysis of Emotions from facial components) there are three major approaches like Conventional approach, Deep Learning based approach and a hybrid Deep Learning and Conventional combined approach. This work will prove as a brief source for anyone who is interested in FER related projects.

**Keywords:** Emotion Recognition, Classifiers, Feature Extraction, Neural Networks, Facial Action Coding System, HAAR Cascade, CNN, OpenCV.

### 1 Introduction

The development in the field of Computer Vision [1] (which focuses on more human interaction with computer) has grown intensively over past two decades. In general the people express themselves using emotions (which comes under non-verbal communication) as shown in Figure(1), body actions, voice tones, etc. Humans only express their one third of the feelings verbally and two third of the communication is done non-verbally. In these two past decades many effective systems and technologies have been used to categorize the emotional expressions. Most of these emotional expressions are such as neutral, anger, contempt, disgust, fear, happy, sadness, surprise, etc. But most of these systems are based on Paul Ekman's categorization scheme [2], which states only six universal emotions like anger, disgust, fear, happy, sadness, surprise. According to his studies, human emotions are inferred from facial expressions by most of the people. It's very complex to figure out the actual emotion from the FE because the way we express is more natural and most of the time human combine these six universal emotions.

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## THE ATTITUDE OF TOP MANAGEMENT TOWARDS SETTLING QUALITY STANDARDS IN THE HEALTHCARE INDUSTRY: A QUALITATIVE REPORT

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### ABSTRACT

Accreditation helps control performance. Stakeholders' certification commitment is crucial to integrating standards into daily practice. This study examines hospital administrators' views on accreditation established by the quality council of India's national accreditation program for hospitals and healthcare. The hospital directors and administrators were interviewed to conclude this study from different single and multispecialty hospitals and healthcare institutes in India. Virtual, audiotaped, verbatim transcribed, and NVivo-12 thematically analyzed. The normalization process theory guided the study's conceptual framework and heuristic conclusions on normalizing accreditation standards (coherence, participation, activities, and monitoring) (May, C.R., 2009). Accreditation pleased hospital directors, especially those with more experience. The hospital administrators encourage the need and significance of accreditation. This approach standardized daily processes. The standards' clarity, the accessibility of full-time quality professionals, and the alignment of accrediting objective elements and standards with hospital policies and strategies enabled hospital executives to comprehend accreditation (coherence) and involve personnel (cognitive participation). This goal-driven involvement started deliberate operational efforts to incorporate quality standards (collective actions) (Campbell SM, 2000). Distribution of the standard set to the pertinent owners, evaluation of deficiencies, the creation of remedial plans, and project prioritizing within time constraints were all involved in the integration process. Notwithstanding structural and economic conditions, conditions on increased safety culture, team spirit, communication, public trust, safety issue reporting, and process standardization. Objective assessment of accreditation benefits (reflexive monitoring) was necessary to correct issues, improve performance, and sustain performance after integration (Brubakk K, 2015). Standards integration requires knowledge of certification and how operations integrate standards. According to the normalization process idea, culture, cooperation, and leadership impact how measures are combined in a sequential, connected manner. The outcomes clarified the operating accreditation technique, which may help stakeholders and policymakers make informed decisions.

**KEYWORDS:** Accreditation, Attitude, Quality, Hospital Administrator, NABH, Healthcare industry



## Impact of Talent Management on Organization Performance and Practice: A Study of Talent Management in IT sector in context of NCR region

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### Abstract

Talent management is a business strategy that organizations accept will empower them to hold their top talented employees and work on to improve the organization performance. It is the course of employing the right ability, setting them up to take up top situations in future, evaluating and dealing with their presentation and furthermore forestalling them to leave the association. The performance of every organization depends on the performance of their employees. If the employees have unique competencies which the competitors cannot replicate, the organization automatically gains a competitive edge over its competitors. So, for managing this unique human capital, the organizations are focusing on creating effective systems and processes for talent management. The organizations are also striving hard to retain their top/key talent because if they leave, the complete repository of knowledge is also gone out of the hands of the organization. The purpose of the study was to find out the impact of talent management on





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## RESEARCH ARTICLE

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### Optimal Data Cube Computation In Serial Processing

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### ABSTRACT

In the business intelligence area there is a need for multidimensional data analysis which makes it fast and interactive. Data warehousing and online analytical processing policies have come in existence for this purpose, in which the data may be seen as a Multi-dimensional data cube, which allows interactive and different ways of analysis of data at different levels and displayed in image form so that calculating the data cube efficiently is great and significance greatly reduces the response time of the entire system. There are various basis to do this but widely used map-reduction algorithms, are effective data cube calculation procedures that utilize parallel systems for faster computation but their basic drawback is they are tied to the system's hardware environment and fail to be efficient on a single thread system, so we introduce the lowest first method, which is a sequential algorithm, which works efficiently in a single thread environment and performs data cube calculations in linear time this is possible for each query, without the need for complex systems such as distributed clusters by focusing on intermediate cuboids and better calculating their values as opposed to

**Result:** MR-cube policies based on dividing search space into batch areas may fail to lead to the proper division of work and sub-optimal results when executed sequentially. It took only 168.23 milliseconds to generate the total cuboid presented in this research work enabled by the non-heuristic nature of the lowest-first approach making it outperform other optimizers.

**Conclusion:** The preprocessing time complexity of the algorithm is  $O(n \log n)$  and query time complexity is  $O(n)$  which gives the best path of computing a cuboid starting from base cuboid representing data cube and for the preprocessing it may extended its use cases to bulk path finding queries over the prescribes data warehouse where  $q \gg \log(n)$ .

**Keywords:** Cuboid computation, data cube, multidimensional model, OLAP

### INTRODUCTION

Data warehouse (DW) is used for the repository that assembles data from various heterogeneous origins, handles it for efficient and effective retrieval, storage, and provides it to multiple consumers for business intelligence requirements [37]. Data Warehousing emerges as an alternative to address different data quality

concerns for supporting decision-main processes in a given subject (being time-variant but not volatile), and the information that is stored is a multidimensional model [12]. They are of two types DW and data mart. While DW is the place where information from various destination materializes.



## DETECTING MALARIA USING DEEP LEARNING MODELS

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**Abstract**– Over the past few years, the corona has created havoc across the globe but still, malaria is holding the position of disease with the highest mortality rate in few parts of the world. Malaria is caused by the bite of female mosquitoes - Anopheles. According to WHO, in 2020 the total number of malaria cases reported was more than 240 million and about 627,000 deaths were reported [5]. It can be examined on time, so now the major concern is to identify if a person is affected by malaria or not. There are many traditional ways to test for malaria but either they require highly competent doctors or may give results in high time. Scaling of this old technique is very difficult and not having doctors with proper expertise in rural areas is also a problem. So, in this paper, we have used a Convolutional Neural Network (CNN) to classify the blood images as infected or not and get the results faster. Three different deep learning models were compared to find out the most accurate model which will automate the process and can be used by doctors in remote areas to get faster results.

**Keywords** – Convolutional Neural Network; Deep Learning; Malaria Detection; VGG-16; RESNET-50; Inception v3; layers; transfer learning

## I. INTRODUCTION

Malaria is a serious disease caused by Plasmodium bacteria. It is a mosquito-borne disease caused by the bite of a female Anopheles that transmits a type of infective single-celled organisms into the human body, which reproduces in the blood cells. Research shows that Malaria affects more than 500 million people every year, Nearly 0.5% of which results in death; here children are the main victim of death due to malaria.

The symptoms of the person infected with malaria parasites can vary from mild to serious illnesses or even death. The most common symptoms are Cough, Cold, Fever, Nausea, Headache, Joint Pain, Muscle Pain, Fatigue, Vomiting, Diarrhoea, etc. Malaria is a common



## Implementation of Sri Aurobindo's Philosophy of Education at Primary Level: A Case Study

✓ Monika Davar\*

### Abstract

*Sri Aurobindo Ghosh (1872-1950) was one of the greatest philosophers of his time. Sri Aurobindo presented the concept of Integral Education and Principles of True Teaching which has great relevance in the present education system in the context of deteriorating values. The education system if guided by his philosophy can unleash the great potential in each child. The study aims to explore the extent to which a reputed School in Delhi is following Sri Aurobindo's philosophy at the pre-primary and primary level and its impact on the students. The case study method was used and data obtained were analysed qualitatively to arrive at some significant findings. The outcome was found to be positive and beneficial for primary school students. This study, if followed up with similar research findings in other educational institutions, can lead to a major paradigm shift in the present education system.*

### INTRODUCTION

Sri Aurobindo Ghosh (1872 -1950) was one of the greatest philosophers and educators of his time. His philosophy has great relevance in the present education system in the context of deteriorating values. Sri Aurobindo's vision of education is reflected in his quote, "It should be clear that the only true education will be that which will

be an instrument for the real working of the spirit in the mind and body of the individual and the nation." According to him, real education is that which provides freedom, and creativity, develops the mind, moral and aesthetic sense and finally leads to the development of an individual's spiritual powers.

Today, there is a crisis of character and morality in the present education

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## PSYCHOLOGICAL CONSEQUENCES OF SOCIAL MEDIA USAGE: A CASE OF UNIVERSITY STUDENTS' PERCEPTION

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### Abstract

Discussion about student community and use of various social media platforms never end without the elaboration on how social media has impacting students' performance in exams as well as in their career preparation. Much less talk about discussion has been the fall out of social media usage on mental wellbeing. The key purpose of this research study was to spot light the perception of university students about psychological consequences of social media usage. This research is based on the structured interview with the 265 students who were enrolled in different university courses running through affiliated private colleges of the state of Uttar Pradesh. In this study four district of Uttar Pradesh were covered and these were Gautam buddha Nagar, Hapur, Meerut and Ghaziabad. The results of this research study outline the patter of social media usage, discuss the effect of social media on range of psychological variables including mental stress, loneliness, depression, sleep deprivation leading to insomnia, lethargic response, etc. This paper add value by highlighting outcomes that may be treated as indicators of major concerns about students and social media usage.

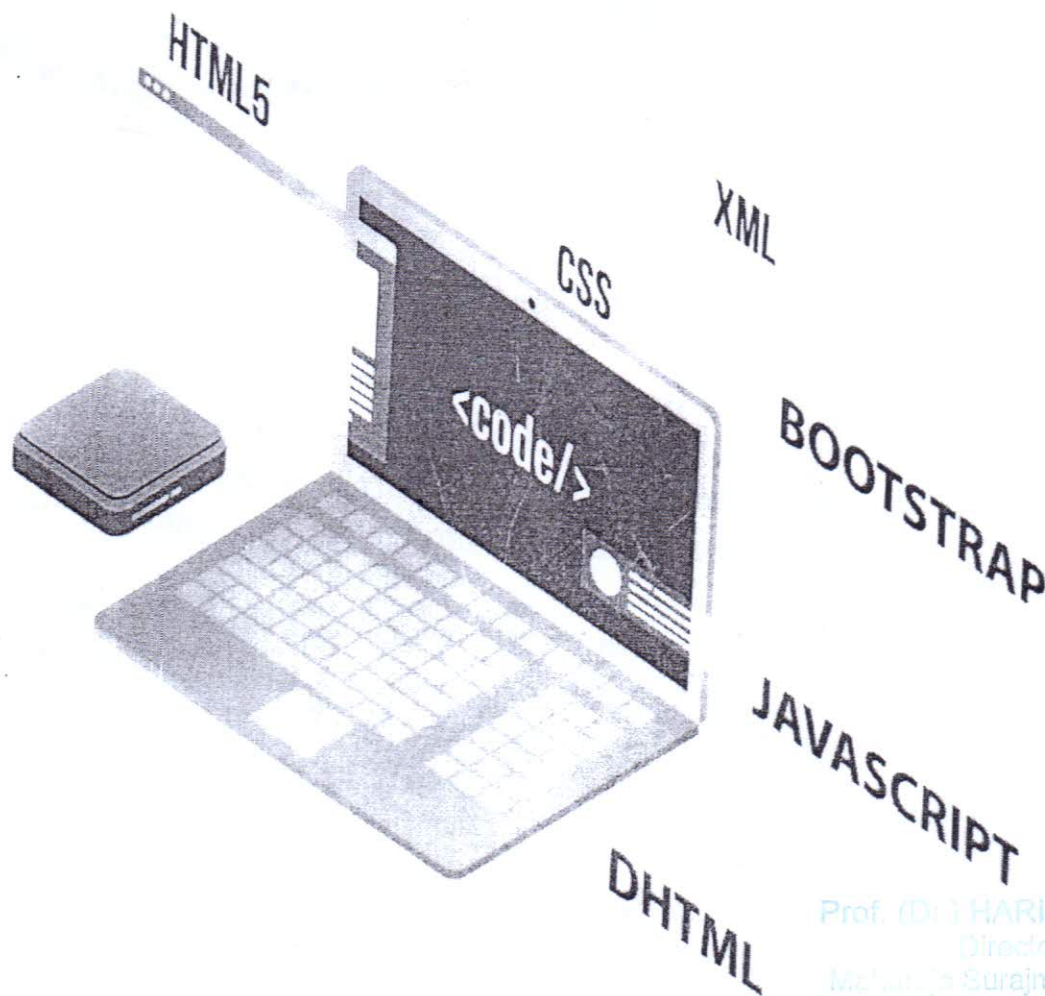
**Keywords:** Social Media, Psychological effects, Mental Stress, Social Media Platform

### 1. INTRODUCTION

Internet has brought people so close that possibility of staying 24 by 7 connected is a reality and all this happened because of social media and its acceptance among people of almost all age groups. Technology has offered a range of options to stay in network with people of like mind and similar interest. Communication has gone beyond email, SMS (Short Message Services) and online chatting. Availability of social media platforms has created exceptional ease for communication. People can share various kind of information in different audio-visual or even text formats. Social media has offered space to individuals to showcase their achievements. Lot of innovation in the social media space has happened. Just for an instance, Facebook become Metaverse. Social media companies have seen tremendous increase in the numbers of their active users. Research studies in the area of social network and social media have shown that most of the active number of users of social media belongs to age groups of students. Students use social media for various purposes including academic use and use for entertainment. No doubt social media platforms have



# Getting Started with Web Technologies



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# Futuristic Research 2 Trends and Applications of Internet of Things

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# Semantic Web Technology– Based Secure System for IoT-Enabled E-Healthcare Services

# 6

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## 6.1 INTRODUCTION

### 6.1.1 IoT

Introduced by Kevin Ashton, Internet of Things (IoT) refers to widely distributed real-world devices, appliances, sensors, and 'things' in general, having storage and processing capability, interconnected through a dynamic and collaborative network infrastructure. The idea is to access real-time information and services anytime and from anywhere within the Internet's infrastructure, broadening the scope of data sharing and remote-control ability beyond the machine-to-machine (M2M) scenarios (Szilagyi & Wira, 2016). IoT environment broadly comprises of the domains of devices – the sensors, actuators, processors; connectivity – wired or wireless network; and platform – data generation and analysis technologies (Choi & Choi, 2019). The things in IoT devices offer sensing, measuring, understanding, and modifying abilities in the collaborative environment, but their limited processing and storage capacities raise concerns regarding their performance, reliability, privacy, and security (Srinivasa, Siddesh, & Hanumantha, 2017).

### 6.1.2 SWT

The Semantic Web is Sir Tim Berners Lee's vision of a highly intelligent or meaningful web system that aims at associating meaning with the data for the machines to be able to understand and process it globally. This web of linked data provides a better representation of knowledge and serves in decision making, scheduling, and other tasks efficiently by requiring minimum human involvement (Berners Lee, Hendler, & Lassila, 2001). Semantic Web Technologies (SWTs) are the web technologies supporting semantic web, and form a part of its layered architecture or stack. The SWTs contextualize and give meaning to the data, enabling its linking, automation, sharing, reuse and integration across various applications. RDF (Resource Description Framework) and Ontologies are the two most prominently used SWTs for graph-like knowledge representation and common understanding, SWRL (Semantic Web Rule Language) for rules to reason over the knowledge base, and SPARQL (SPARQL Protocol and RDF Query Language) for querying and accessing this shared data (Dragoni, Solanki, & Blomqvist, 2017).

### 6.1.3 E-Healthcare

The digitization in healthcare sector is aimed towards adoption of IT technologies to develop e-health (electronic health) and m-health (mobile health) services and applications

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(Assessment Year 2022-23)

Dr. Monika Tushir Bohra



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# Income Tax Law and Practice (Assessment Year 2022-23)

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## Integration of Blockchain and IoT (BIoT): Applications, Security Issues, and Challenges

Sushma Malik, Anamika Rana

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### Abstract

The internet of technology (IoT) refers to the connectivity of smart devices with the internet to accumulate data and transfer it to smart devices. But with the lack of built-in security measures, IoT is vulnerable to privacy and security threats. Blockchain technology assists in the security needs of IoT devices. The main characteristics of blockchain technology like immutability, transparency, auditability, and encryption of data sort out the inadequacy of IoT devices. This chapter represents an inclusive survey on blockchain and IoT technologies with the integration of these technologies to overcome the shortfall. This chapter includes an overview of both technologies with their advantages and disadvantages. It also highlights the domains of their applications and represents the advantages of integration of blockchain and IoT technology to develop BIoT (blockchain-based IoT). Also, it analyzes the main challenges faced during the smooth integration of blockchain and IoT technologies.

### Chapter Preview

Top

### Introduction

Blockchain has a list of records which is called blocks. All the blocks are linked by using cryptographic techniques (Alphonse & Starvin, 2020). Blockchain can be defined as a transparent, trusted, and decentralized ledger on a peer-to-peer network and it is a virtual Bitcoin cryptocurrency invented by Satoshi Nakamoto in 2008. The transaction is the data unit on the Blockchain and certain numbers of transactions are bundled in a Block (N. Kumar & Aggarwal, 2020). The cryptographic hash value is calculated and placed in its next block along with the timestamp. Blockchain is a distributed and open ledger that records transactions very efficiently. The alteration of data in the blockchain is restricted (Bach et al., 2018). For all the participant's blockchain ledger is available to access but still not regulated by any network authorities and this can be possible by imposing strict rules and mutual agreement between the network nodes (Uddin et al., 2021). Each block in the blockchain has contained the hash value that stores the hash value of the previous block. Hash is a unique address of each block assigned during its creation and any modification in the block will lead to a change in its hash value. The root hash value for all the transactions is stored. The timestamp is stored as the creation time of the block and the Nonce value is ensuring that the present hash value is below the target shown in Figure 1.

Figure 1. Structure of blocks

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Blockchain is the chain of blocks that enclose information. Digital documents are not possible to backdate or temper them because of this technology and double records problem are also sorted out since a central server is not required. Blockchain technology is used to transfer the items like money, property, contracts, and many more in a secure manner without the involvement of third parties like banks or the government. Data stored in blockchain are very hard to modify.

Blockchain is simply the correlation of three different technologies (Sharma et al., 2020):

1. Internet,



2. Private key cryptography and
3. Protocol governing incentivization

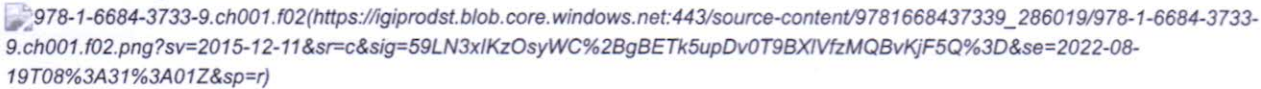
This technology is distributed, decentralized, shared and immutable means stored data cannot be modified or wiped out from the database ledger were stored all the transaction records and the hash value of the previous block and also provide the global trust. Elliptic curve cryptography (ECC) and SHA 256 hashing algorithms are used to provide security by data authentication and integrity. Blockchain is a software protocol like SMTP which is used for email over the internet that's why blockchain cannot be run without the internet (Thompson, 2021).

Sometimes blockchain is replaced with bitcoin word but in reality, bitcoin is not the blockchain technology instead, blockchain technology is behind the bitcoin. Bitcoin is the digital token and blockchain is acts as the ledger used to store the information of bitcoins. Blockchain can be existing without bitcoin but the existence of bitcoin can be depending on the blockchain.

## Working of Blockchain

A new block is created for any new record or transaction within the blockchain. After that created block is shared with each node of the block to verify the genuineness of the block. And after verifying the validity of the block, it is added at the end of the blockchain and it represents the completion of a transaction (Lastovetka, 2021). Figure 2 shows the working of blockchain.

Figure 2. Working of blocks

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## Key Terms in this Chapter

**Protocol** (/dictionary/protocol/23909): A protocol is a set of rules for formatting and processing data in networking. Computer protocols are similar to a common language. Although the software and hardware used by the computers in a network may differ greatly, protocols allow them to communicate with one another.

**Blockchain** (/dictionary/blockchain/57155): A blockchain is a distributed database that is shared across nodes in a computer network. A blockchain is a database that stores data in a digital manner. Blockchains are well-known for their role in maintaining a secure and decentralized record of transactions in cryptocurrency systems such as Bitcoin. The blockchain's unique feature is that it maintains data record integrity and security while also building confidence without the need for a trusted third party.

**Big Data** (/dictionary/big-data/39008): Big data is a vast collection of information that continues to grow exponentially over time. It's a data set that's so large and complex that traditional data management tools can't store or analyze it efficiently. The difference between big data and regular data is that big data is substantially greater.

**Sensors** (/dictionary/sensors/26501): A sensor is a device that detects physical input from its surroundings and transforms this into facts that can be evaluated by humans or machines.

**Cryptocurrency** (/dictionary/cryptocurrency/59926): Any sort of digital or virtual currency that uses encryption to secure transactions is referred to as cryptocurrency. Cryptocurrencies work without a central authority issuing or controlling them, instead relying on a decentralised system to track transactions and create new units.

**Internet of Things (IoT)** (/dictionary/internet-of-things-iot/43226): The internet of things, or IoT, is a network of networked computers devices, mechanical and digital machinery, goods, animals, and people with unique identifiers (UIDs) and the ability to transfer data without human or computer contact.

**Peer-to-peer Network** (/dictionary/peer-to-peer-network/22223): A peer-to-peer (P2P) network is a decentralised communication architecture in which two peers, referred to as nodes, can communicate with each other without the use of a central server.

**Ledger** (/dictionary/ledger/77160): A ledger is a sort of record that is shared, copied, and synchronized across decentralised network members. The distributed ledger keeps track of transactions between network participants, such as the exchange of assets or data.

**Bitcoin** (/dictionary/bitcoin/53524): Bitcoin is a cryptocurrency or virtual currency, that is supposed to operate as money and a form of payment while being independent of any single person, group, or entity, obviating the need for third-party involvement in financial transactions.

**Cloud** (/dictionary/cloud/4036): The phrase "cloud" refers to servers that are accessible over the Internet, as well as the software and databases that run on them. Many data centers throughout the world host cloud servers.

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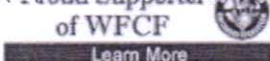
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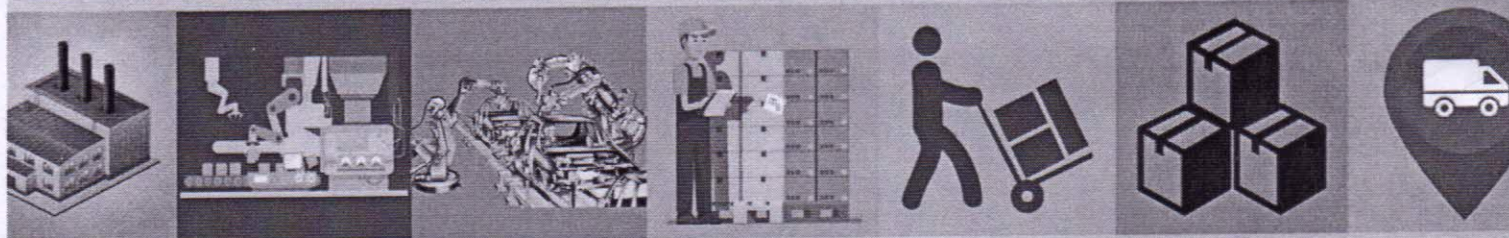
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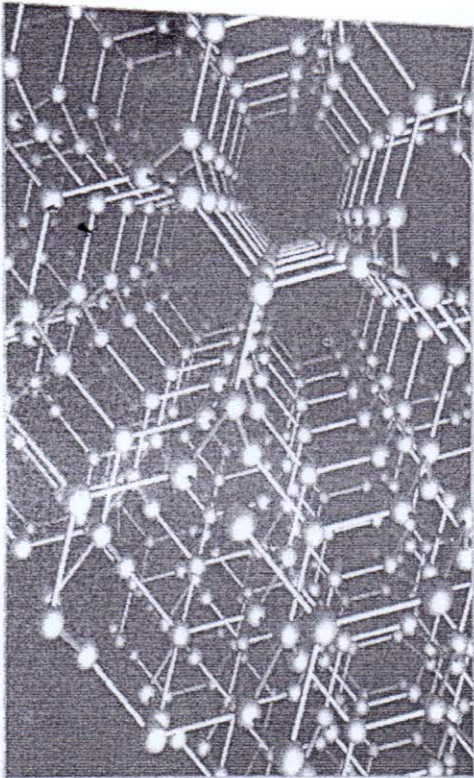
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"Technology is going to disrupt the future of work, perhaps sooner than we thought"

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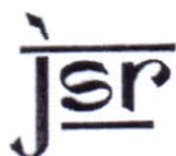
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# Management of Commercial Banks

This book is for the 4th semester of BBA (B&I), GGS IP University as well as other universities where banking is taught. This is an attempt to make students aware about basic concepts of banking as banking sector is growing very fast. This book covers all topics relating to banking like theories and various risk management in banking sector and its system, various international financial institution and their role, international capital market and its instrument, Foreign debt, Developmental role of International Banking and Financial Institutions and various developments in banking sector.

**Dr. Jasbir Singh** is an eminent scholar in the field of Economics and Money & Banking. He (Associate Prof. in Maharaja Surajmal Institute under IP University) is M.A Economics (specialization in Money and Banking), M.A Rural Development, MBA in IBM, M. Phil in Eco. Ph.D in Eco (in Banking), from M. D. University, UGC/NET qualified and 21 years teaching experience in MDU as well IP University. He has published more than 100 research papers in national and international journals. He has presented more than 30 research papers in various national and international conferences. He has attended more than 40 national and international seminar and conferences as like IIT Roorkee. He is Editor in- Chief of the African Journal on Economic and Development Policies (AJEDP) and Member of Editorial Board in Journal: International Invention Journal of Arts and Social Sciences (IJASS), and in Journal: Comprehensive Research Journal of Management and Business Studies (CRUMBS). More than 13 students have completed their M. Phil and more than 10 students their Ph.D under his supervision. Three books have published.

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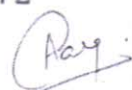
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## AN ENSEMBLE MACHINE LEARNING MODEL FOR AUTOMATIC PREDICTION OF PERCEIVED PERSONAL WELL-BEING OF INDIAN UNIVERSITY STUDENTS DURING COVID-19 LOCKDOWN

Kavita Pabreja<sup>✉</sup>, Shubham Arya<sup>✉</sup> and Parichay Madnani<sup>✉</sup>

COVID-19 has impacted personal well-being globally in a disruptive manner. Frequent lockdowns have slowed down dramatically the economy of every nation. There is a fear of future insecurity cropping up in the minds of the people. The paper aims to restructure the popular Personal Well-being Index (PWI) according to the relevant indicators that impacted students' life in India during the second wave of COVID-19. The students at Delhi state university participated in the research. The researchers use various machine learning algorithms such as Lasso Regressor (LR), Support Vector Regressor (SVR), and Decision Tree Regressor (DTR) to predict the perceived PWI. The R-squared value for LR, SVR and DTR are 0.9103, 0.9159 and 0.5339. Mean squared errors are 0.0034, 0.0035 and 0.0105 respectively. The five most influential determinants of perceived PWI were extracted. An ensemble model of the three mentioned base learners was designed to remove the overfitting and underfitting problems. The algorithm has demonstrated impressive performance, with an R-squared value of 0.9839 and MSE of 0.0014. A GUI-based prediction model was implemented in Python that triggered the ensemble model at the back end to predict PWI based on five questions only, along with recommendations for the respondents.

**KEYWORDS:** Perceived Personal WellBeing, Support Vector Regressor, Decision Tree Regressor, Lasso Regressor, Ensemble Model, COVID19

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## Chapter 2

# Literature Review: A Comparative Study of Software Defect Prediction Techniques



Tarunim Sharma, Aman Jatain, Shalini Bhaskar, and Kavita Pabreja

## 1 Introduction

Over the previous few decades, developers have steadily shifted their attention to software-based systems, with software quality and dependability seen as the most important factor in user functionality. In recent years, there is an increased computerization that has resulted in the creation of a variety of different software; however, measures need to be taken to make sure that the produced software isn't defective. If the source code is complex, chances are there that software will show defects which further leads to failure in software. The scientifically based administration of the software testing phase necessitates the early and correct prediction of software problems. Defect prediction model development is ordinarily utilized in the field of industry and these kinds of models help in additional fault prediction, testing, calculating effort, reliability of software, software quality, assessment of hazards, etc., during the developmental stage. The future direction for research in the software engineering field is detecting faults in the software as it helps developers and testers for locating Software Defects with high accuracy and within time [1]. The most essential task in the software development life cycle model's testing phase is to establish a method for forecasting software failures so that testing and maintenance expenses can be lowered. It determines which modules are prone to errors and requires rigorous testing. For many years, regression techniques have been used to predict defective code snippets, and more recently, machines learning algorithms, both supervised

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algorithms have been presented. It's a type of predictive modeling that looks at the relationship between a dependent (target) and independent variable (predictor). Some of the most frequent regression techniques employed in this field are linear regression, polynomial regression, logistic regression, multivariate regression, and lasso regression. During the diagnostic testing phases, the defect-prone modules are given high attention, while the non-defect-prone modules are evaluated as time and expense allow. Using equations for target classification, the classifier approach explores the classification feature known as the link between the attributes and the training dataset class label. These rules will also be required to determine the labels for future dataset classes. Thus, utilizing classification patterns and a classifier, unknown datasets can be classified. Because of the huge deployment of software, defining software problems, discovering the defect, and recognizing it is a recurring task for researchers. However, the development of algorithms and the prediction of accuracy remains a challenge.

However, these studies have various challenges yet to be met that includes an unbalanced class distribution, noisy data, an appropriate feature set selection, and proper machine learning model validation. An inadequate validation mechanism, less reliable research methodologies, difficulties in dataset class imbalance, coping with noisy data processes, and figuring out a way to combine feature selection and hybridization are all continuing research issues with existing frameworks advised for predicting defects in the software.

The class imbalance of samples is typical in many practical situations. As a matter of fact, most software modules in the majority class are defect-free, which is also true for the Software fault prediction task. There are very few numbers of software modules in the minority group having problems. The main objective of the SDP model is to correctly spot those software modules which are defective, hence accurately recognizing that minority classes are critical ones. As a result, the defect class is in the minority. It is very important to find out this minority class that further helps in detecting the defect in the software failing to do that will impact the quality of software drastically. Another issue is appropriate Feature Selection, which has become a necessary step in many applications as it is one of the data qualities challenges which includes identifying certain unnecessary items such as repetitive and irrelevant attributes. The prediction model's performance is unaffected by unrelated features, but the model's processing time is increased. The unessential sets of features add data which is not readable or outliers to the foretelling model, even if useful information is provided [4]. Furthermore, early research has also shown that presence of redundant features will decline the precision of these prediction models [5, 6]. As a result, selecting the appropriate features can aid data perception and visualization while also lowering test costs, storage needs, training time, and improving prediction model performance [7].

Various studies advocate the fact that the quality of the data used will strongly impact the performance of classifiers [8, 9]. As a result, corrupted data in real datasets makes decision-making difficult, and also the ensemble classifiers based on such data result in poor accuracy. In these situations, an ensemble-based framework with noise filtering, feature selection, and data balancing can be effective, and the authors in

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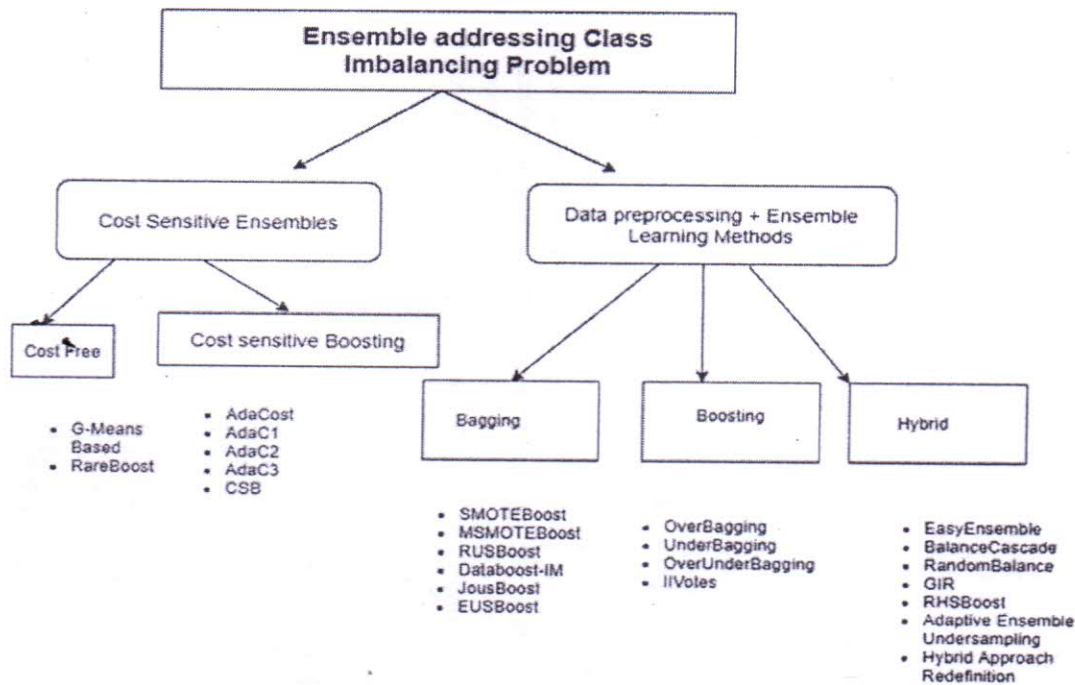


Fig. 2 Ensemble techniques for handling class imbalance problem

that can be adequately evaluated, appropriate features must be excluded from the feature collection. The goal of this study is to combine feature extraction and feature selection methods in order to obtain more accurate findings showing below the experimental framework in Fig. 3. In addition, the research would present cost model tests to reveal patterns in cost behavior on real projects before and after the completion. The proposed methodology may assess the model quality before utilizing it for the final software system.

## 2 Related Work

In today's time, researchers are persistently working in the direction of improving the performance of software defect prediction models. While implementing the machine learning algorithm its accuracy is dependent on the standard of the historical data which is composed of a number of classes, modules, files, etc., which is further categorized as faulty and non-faulty. Researchers have proposed a number of algorithms and techniques for selecting the optimal subset of features which is discussed in Table 1. They use software measurements to effectively identify problematic software modules; however, they don't consider the skewness in the dataset or other usual statistical properties. Ignoring such attributes will significantly affect the performance and accuracy of classifiers. Number of researches is also being done for ascertaining the supreme learning algorithm but datasets canted nature because of class imbalance problem makes these algorithms suboptimal.

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Table 1 Literature review table

| S. No | Author, year, pub             | Title of paper   | Contribution  | Gaps for further improvements  |
|-------|-------------------------------|--|---|--|
| 1     | Suresh Kumar, 2021, IEEE [18] | "Bootstrap aggregation ensemble learning-based reliable approach for software defect prediction by using characterized code feature" | Paper implements bagging algorithm which avoids overfitting and reduces variance  | In future they suggested implementing various deep learning algorithms to process the features set and uncovering all defects present in the product   |
| 2     | Agrawal, 2021, IEEE [14]      | "Metaheuristic algorithms on feature selection: A survey of one decade of research (2009–2019)"                                      | Paper examines metaheuristic algorithms and their fluctuating binary variations employed resolving the problem of selecting best feature sets by various authors                          | Gap is a classification task in which participants have to employ a variety of classifiers and compare them to the most often used ones  |
| 3     | Oluwagbemiga, 2020, IEEE [15] | "A hybrid multi-filter wrapper feature selection method for software defect predictors"  | Study presents using multi-filter wrapper feature selection hybrid framework for dealing with defects in the software for selecting features having irreducible and analytical properties | In future finding more good ways to combine filter and wrapper-based feature selection is still in progress and planning to investigate other data quality issues such as imbalance in class affecting SDP |
| 4     | Goyal, 2020, IEEE [19]        | "Heterogeneous stacked ensemble classifier for software defect prediction"   | Study shows how stacked ensemble improves the SDP classifier's accuracy and prediction capacity by addressing dataset class imbalance   | Work can be reproduced for different datasets using Deep learning structures in future   |

(continued)



Table 1 (continued)

| S. No | Author, year, pub                            | Title of paper   | Contribution   | Gaps for further improvements   |
|-------|--|--|--|---|
| 8     | Jiang et al. 2020, MDPI [21]                 | "Heterogeneous defect prediction based on transfer learning to handle extreme imbalance" | Study shows the Grassmann manifold optimal transfer defect prediction technique (GMOTDP), which combines sampling with the majority method (swim) oversampling, feature selection                  | In future effects of high-class imbalance in semi-supervised software defect predictors on larger datasets will be seen, as well as observing how to combine other supervised learning approaches with sample and algorithm level methods and proposing transfer learning too |
| 9     | Chakraborty and Chakraborty, 2020, IEEE [22] | "Hellinger net: a hybrid imbalance learning model to improve software defect prediction" | Works on mapping of tree to network technique which is similar to deep feed forward neural network for which special distance measure is used in handling this problem known as Hellinger distance | Model is applied on Nasa Datasets only and they didn't take how cost get affected with so early defects detection<br>Further they suggested extension of this work is to apply on other domains and to check semi-supervised settings also                                    |

(continued)



Table 1 (continued)

| S. No | Author, year, pub                        | Title of paper  | Contribution  | Gaps for further improvements  |
|-------|--|---|---|--|
| 12    | Khuat and Le, 2019, IEEE [25]            | "Ensemble learning for software fault prediction problem with imbalanced data"                        | Research learns more about how the various techniques of sampling on getting imbalance data as input affects the accuracy of ensemble classifiers   | ...Future involves diversification of ensemble classifiers with a number of rules designed employing various sampling techniques and changing the strategies for sampling to use with binary classification models |
| 13    | Cai et al. 2019, IEEE [26]               | "An under-sampled software defect prediction method based on hybrid multi-objective cuckoo search"    | In this firstly a multi-objective under sampled technique cuckoo search based on support vector machine is suggested after that 3 under sampled methods were used for selecting non-defective modules | Algorithm they proposed is more compatible for software having limited resources and of high risks, one of their drawbacks. Comparison of the model with the most powerful XGBoost is also not being performed     |
| 14    | NezhadShokouhi et. al in 2019, IEEE [27] | "Software defect prediction using over-sampling and feature extraction based on mahalanobis distance" | Proposes a method for handling class imbalance and feature selection problems known as Mahalanobis distance   | Drawback is paper using traditional metrics like Halstead and McCabe's cyclomatic complexity which are not based on Gaussian distribution so need for good metrics selection arises                                |

(continued)



Blast Algorithm (MBA) is blended with simulated annealing to improve solutions given by MBA. They clearly show that MBA alone does not give good accuracy as it shows when it is hybridizing with other metaheuristic algorithms and strong classifiers. Moreover, the weakness in this implementation is the methods were applied to flat files but the real-world complex problems often handle gigabyte-sized databases.

Nawaz et al. [30] developed an ensemble learning model and compared them with other single machine learning algorithms like SVM, KNN, Decision Tree, Random Forest on Promise Datasets showing an excellent classification accuracy among all. They tested the accuracy on a few datasets and advised that in the future should focus on developing a general ensemble learning model for the rest of the datasets accessible in the Promise repository, with an accuracy of around 97% or higher. Goyal and Bhatia [19] implemented a Heterogeneous stacked ensemble method and compared it with a number of baseline models showing that the model they proposed performs better than that. They stacked three weak and two strong classifiers to improve the prediction but what is lacking in their model is noise filtering and feature selection is not being performed. They have also not shown how defect prediction in the early phase will affect the cost reduction in further phases of software development. Alsawalqah [20] implemented a hybrid classification technique for predicting failures in software. The suggested strategy is developed and tested in two ways. Simple classifiers are used in the first, while ensemble learning is used in the second. They concluded that the ensemble approach performs well as compared to the approach implemented by simple classifiers. Paper did not focus on class imbalance issues and feature subset selection which affects performance further. They further suggested exploring more advanced algorithms in clustering and determining how many clusters should be selected from the dataset for further improvement. Jiang et al. [21] show the Grassmann manifold optimal transfer defect prediction technique (GMOTDP), which combines Sampling with the Majority method (SWIM) oversampling, feature selection, and proposal of transfer learning is also being done in this study as a three-phase heterogeneous software prediction method. The method performs better no doubt but noise handling was missing in their study. They also throw light on class imbalance issues related to semi-supervised and supervised learning as it strengthens the accuracy of these algorithms.

NezhadShokouhi et al. [27] proposed a method for handling class imbalance and feature selection problems known as Mahalanobis distance. Class imbalancing is dealt with by producing diverse synthetic samples for minority class and feature subset selection using metric learning by Mahalanobis distance in which sample data is projected to a new space which is further evaluated with a series of experiments on 12 datasets from Nasa repository. Drawback in this paper is that researchers have used traditional metrics like Halstead and McCabe's cyclomatic complexity which are not based on Gaussian distribution. So, there is a need for good metrics selection from the code itself. Bejjanki et al. in 2020 [23] suggested the class imbalance reduction algorithm to handle the imbalance between defective and non-defective records in the datasets which is further compared with Smote and K-Means Smote and tested on



imbalance problems while predicting defects in the software. It works on mapping of tree to network technique which is similar to deep feed forward neural network. They used a special distance measure in handling this problem known as Hellinger distance. They missed focusing on dimension reduction. Model is applied on Nasa Datasets only and they didn't take into account how costs get affected if defects get predicted so early. The extension of this work that they suggested is to apply on other domains and to check semi-supervised settings also. Kumar et al. [18] showed how to improve software defect prediction using Bagging method which is an ensemble learning technique that proved out to be one of the most effective predictors. Their implementation technique avoids the problem of overfitting which leads to reduction in variance. As a research gap, they have not considered feature selection techniques while performing the prediction which can further enhance the capability of increasing the accuracy of this approach and more over there are many more advanced machine learning techniques like deep learning algorithms that can be implemented to analyze the attributes of software and detect faults with more accuracy in the future. Paper published by Bahaweres et al. [32] discussed the solution of the class imbalance problem, and the researchers used Smote along with Neural Networks in blended form, and further optimized each hyperparameter of these blended form frameworks by implementing the technique of searching randomly. However, there are some caveats: the hyperparameter optimization introduced in this study is random search, which does not allow an algorithm to reach an optimal state because of which the work gets further affected.

### 3 Conclusion and Future Work

Software defect prediction is the most critical and significant activity in the software development process for improving software quality. Timely identification of software defects in the initial phases of development results in enormous savings in terms of time, cost, and effort. As the complexity of the software continues to increase, a wide range of issues arise while performing software defect prediction, such as feature selection, noise filtering, and class imbalance to name a few. Traditionally, researchers have offered numerous ways for dealing with such issues by adopting machine learning techniques both in raw form and in ensemble form. There are still many challenges to be undertaken for improvement of various software performance metrics by adopting metaheuristic algorithms, combining different supervised learning approaches with sample and algorithm level methods; and applying optimization techniques like ant colony optimization. It is equally important to maintain the restrictions related to budget and time. This study is an attempt to summarize the defect prediction techniques used by developers and researchers globally and identify the research gaps for further improvement.



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Sushma Malik ; Anamika Rana ; Monisha Awasthi ; Vijaylakshmi Sajwan All Authors \*\*\*

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**Abstract:**As Internet technology has advanced rapidly in recent years, online shopping has become a convenient method for people to buy and consume desired commodities. However, on... [View more](#)

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##### Abstract:

As Internet technology has advanced rapidly in recent years, online shopping has become a convenient method for people to buy and consume desired commodities. However, online shopping generates a tremendous volume of data, causing consumers to experience data overload. To overcome this problem, Recommender systems (RS) are introduced which are also called intelligent systems. RS plays an essential role in the selection of selective information from the ocean of data for users. Social media play a significant part in users' lives, and users of sites like Facebook, Twitter, and others create a lot of data on these platforms. Customer product reviews influence whether or not a customer decides to buy a product or utilize a service. Customer choices and opinions are influenced by what other customers have to say about them online, on blogs, and on social media platforms. RS consists of two basic filtering techniques namely collaborative and content-based with some limitations like cold start and history of the previous user. To overcome these limitations, this paper introduces a hybrid RS that combines the CF and CB approaches with a sentimental analysis of book tweets. The book's tweets are collected from the Twitter website to conduct the analysis.

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# A Predictive Framework for Temperature Forecasting Using Machine Learning



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Kshitij Sandal, Harsh, and Kavita Pabreja

**Abstract** Weather forecasting plays a significant role in the economy of a country as it affects various sectors viz. agriculture, tourism, trade, energy, transportation, and utility. Traditionally, the weather parameters like temperature, pressure and wind speed are forecasted by formulating mathematical equations based on observational data gathered by doppler radars, radiosondes, and weather satellites and deploying a Numerical Weather Prediction Model. The major limitation of these methods is that everyone does not have access to high-end equipment for forecasting. With the advent of digital technologies, one can scrape the data from the Internet and plug the data into machine learning models and obtain accurate predictions. In recent times, machine learning models are yielding results of high accuracy. This study provides a comprehensive overview of existing forecasting approaches, ranging from the most basic Moving Average to the more complicated ARIMA and Fbprophet models. The objective of this study is to forecast the temperature based on historical hourly forecasts being fed to numerous machine learning models. Various time series forecasting methods have been experimented with and it has been found that FbProphet performs the best with a root mean square error of 0.087 which is quite convincing and impressive.

**Keywords** Temperature forecasting · Machine learning · Predictive modeling · Time series · Meteorology

## 1 Introduction

Weather forecasting is the science of predicting the weather employing physics principles and a combination of statistical and empirical methodologies [1, 2]. An

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Machine learning has also been used widely in electric utility load forecasting as well as in reliability forecasting and also to solving complex time series problems. Industries like agriculture, retail, automotive, and wind power generation are also leveraging machine learning [6–10]. Different machine learning methodologies such as neural networks and support vector machines [11, 12] have been deployed in weather forecasting for the past many years. Most research in weather forecasting to date relies heavily on the highly productive approaches, where the weather systems are simulated via these numerical methods or they rely on famous time series models such as ARIMA, Prophet, and Holt winters method. Moving averages have been developed and used in weather and solar irradiance modeling and forecasting [13]. Voyant et al. predicted solar generation from weather forecasts using machine learning [14] and S. Orita et al. predicted Daily Insolation using a multi-stage neural network [15]. The nucleus of this study lies in predicting the temperature solely based on past periodic values. The best-performing algorithm was determined after a comparison of numerous time series analyses and forecasting methodologies.

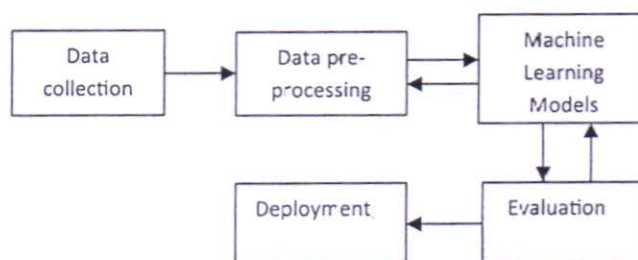
### 3 Research Methodology

The flow chart given in Fig. 1 outlines the research methodology. The first step is the collection of temperature time series data which is followed by data pre-processing. All tasks performed under data pre-processing have been elaborated in Sect. 3.1. The pre-processed data is fed to various machine learning models that are regressors. These regression models forecast the temperature after being trained on 80% of input data and tested with a balance of 20%. The machine learning models are evaluated based on performance metrics and finally, the best one is selected. All these steps are discussed in the following sections.

#### 3.1 Data Collection and Data Pre-processing

Hourly forecast data on temperature has been collected from the public repository Australian Government Bureau of Meteorology [16]. The dataset consists of 2300

Fig. 1 Flow chart depicting the research methodology



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### 3.2 Machine Learning Models

After, completing a crucial step of preprocessing, the four most common yet effective forecasting models were selected. These models are the Moving Average, Holt-Winters, ARIMA, and Prophet methods.

#### Moving Average method

The first technique for predicting the temperature involved using Moving Average. Moving average (also known as rolling average or running average) is one of the widely used time series models which helps to smooth the target variable by filtering out the "noise" which are due to short-term fluctuations. A moving average is a technique that analyses data points by calculating the average of distinct subsets of the entire data set; because it is based on historical values, it is frequently referred to as a trend-following or lagging indicator. In a given time series dataset subset size, that rolls over the data is fixed and the mean is calculated. The first element of the rolling average is calculated by averaging the time series' initial fixed subset. The subset is then adjusted in the next step by "shifting ahead" by one step, removing the first observation of the series, and including the succeeding observation in the subset. Using the Moving average model, the next values in a time series data based on the average of an initial fixed subset of a finite number 'p' is forecasted. Therefore, for all  $i > p$

$$T_{MA} = \frac{T_m + T_{m-1} + \dots + T_{m-(n-1)}}{n} \quad (2)$$

$$= \frac{1}{n} \sum_{i=0}^{n-1} T_{m-i} \quad (3)$$

In Eq. (2)  $T_m, T_{m-1}, \dots, T_{m-(n-1)}$  represents the measured temperature of the previous 'n' days and ' $T_{MA}$ ' represents the moving average of the temperature.

#### Holt-Winters' method

This method is based on the exponential smoothening technique which is an essential step for the smoothening of the time series data using the exponential window function. In the case of moving average, the past observation points are equally weighted while in the case of exponential smoothening the larger weights are attached to more recent observations than the observation from the distant past these exponentially decreasing weights are assigned over time with the help of exponential functions—the smallest weight is associated with the oldest observation:

$$\hat{y}_{(T+1|T)} = \alpha y_T + \alpha(1 - \alpha)y_{T-1} + \alpha(1 - \alpha)^2 y_{T-2} + \dots \quad (4)$$

where  $0 \leq \alpha \leq 1$  is the smoothening parameter and the rate at which the weights decrease is controlled by the parameter  $\alpha$ .



- (c) The **Moving Average** ( $MA(q)$ ) component signifies the error of the model as a combination of the previous error terms  $e_t$ . The value of  $q$  determines the number of terms that are supposed to be included in the model

$$Y_t = c + \theta_1 e_{t-1} + \theta_2 e_{t-2} + \dots + \theta_q e_{t-q} + e_t \quad (11)$$

All the above three components combine up to make the ARIMA model which can be represented as a linear equation:

$$Y_t = c + \Phi_1 y_{d(t-1)} + \Phi_p y_{d(t-p)} + \dots + \theta_1 e_{t-1} + \theta_q e_{t-q} + e_t \quad (12)$$

where ' $y_d$ ' is the  $Y$  which is differenced ' $d$ ' times.

### FbProphet method

**FbProphet** is an open-source forecasting tool that is available in both languages viz. python and  $R$ . It provides easy parameter tuning which helps to generate a meaningful prediction for a variety of problems faced in business scenarios. The prophet at its core is an additive regression model which depends upon historical data and uses time as a regressor. Prophet is laid upon three main pillars:

- (a) **Linear or logistic growth trend:** the trend of the time series is often calculated by fitting a piece-wise linear/logistic function over the data and fitting these functions ensures the time series is not affected by the missing data.

$$g(t) = \frac{C}{1 + \exp(-k(t-m))} \quad (13)$$

$$g(t) = (k + a(t)^T \delta)t + (m + a(t)^T \gamma) \quad (14)$$

Equations (13), and (14) represent the piecewise logistic and linear function respectively which helps to calculate the trend of a time series.

- (b) **Seasonality:** Fourier series are used to fit and predict the effects of seasonality. The equation gives us the intuition of the seasonality component of the prophet.

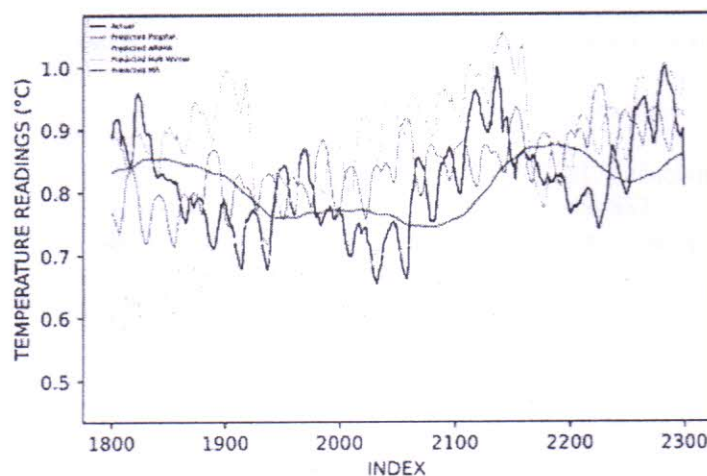
$$s(t) = \sum_{n=1}^N \left( a_n \cos\left(\frac{2\pi nt}{P}\right) + b_n \sin\left(\frac{2\pi nt}{P}\right) \right) \quad (15)$$

' $P$ ' represents the period and  $a_n$  and  $b_n$  are the constants to compute seasonality.

- (c) **Holidays:** Holidays play an important role in time series forecasting, especially in stock/sales prediction. Since we are predicting temperature and holidays will play no role in the process of predicting temperature, so we will not use this feature.



**Fig. 3** Actual and predicted observation of all the chosen algorithms (normalized form)



different values. As we can infer from Fig. 3, ARIMA performed poorly, barely even catching the trend of the time series. Holt winters captured the trend, but could not keep up with the sudden changes in the time series. Prophet being the best performer, captured the trend relatively better and also was able to capture the seasonality present in the graph. Moving Average, although the simplest of all captured the trend of the time series and surprisingly performed better than the complex arima models.

The models' performances were measured based on the Root Mean Squared Error, which can be represented by the following equation:

$$\text{RMSE} = \sqrt{\frac{1}{n} \sum_{t=1}^n (f_t - y_t)^2} \quad (18)$$

where  $f_t$  is the forecasted and  $y_t$  is the actual value at time 't'.

The RMSE values were computed where it was observed that Prophet was the best performer by achieving the least value of RMSE values in both the cases but surprisingly Moving Average performed better than Holt-winter and ARIMA achieving a lower error value. This is a classic case that tells us that it is not how complex an algorithm you choose it is how well one understands the problem and acts accordingly.

Table 2 summarizes the performance of all predictive analysis techniques applied to the time series dataset for both the cases and the best performing model could be identified among the four.

**Table 2** Computed values for the RMSE metric

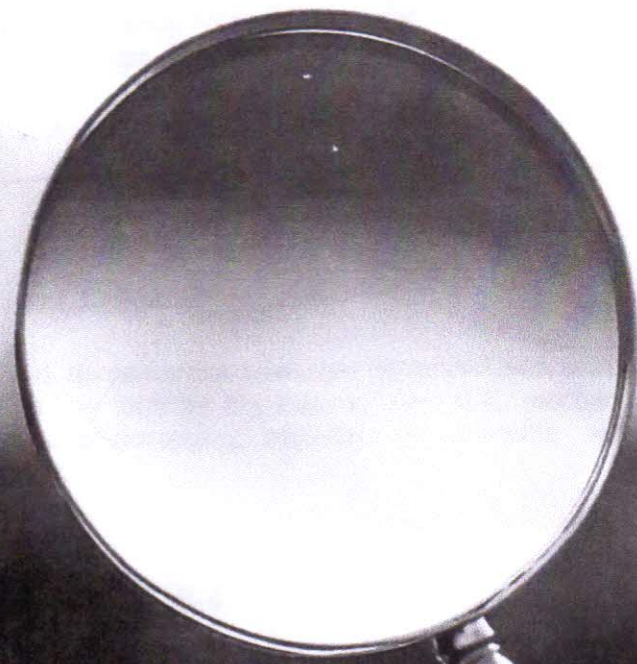
|                      | Moving average | Holt-winters | ARIMA | Prophet |
|----------------------|----------------|--------------|-------|---------|
| RMSE (normalized)    | 0.17           | 0.11         | 0.29  | 0.087   |
| RMSE (un-normalized) | 1.68           | 1.79         | 1.75  | 1.65    |

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# RESEARCH METHODOLOGY



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# PRINCIPLES OF --- MANAGEMENT

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# Regression Testing Approaches, Tools, and Applications in Various Environments

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**Abstract**— In the entire process of developing software, the very crucial aspect is to perform a rigorous testing of the software. Regression testing is a kind of software testing that makes sure an application continues to work as intended even after upgrades, modifications, or improvements to the code. Regression testing evaluates revised software to ensure that the program's altered sections do not cause unforeseen obstacles. When there is a continual transition in the program, this test is critical. This paper discusses regression testing significance, approaches, and the latest tools. As we all know, the most crucial phase of the life cycle of a software development process is the maintenance phase. The core team of developers is responsible for maintaining the product that they provide to their clients during this phase only. Regression tests are needed after the software has been revised. This paper includes a lot of accessible regression testing approaches as well as their categories. The concept of selecting test cases, minimizing test cases, and then prioritizing the same by executing regression testing on them is included in regression testing methodologies and classifications. The emergence of new technology has also technically allowed the education sector to expand. The paper also discusses the significance of regression testing and its use in different environments.

**Keywords**— software testing, regression testing, approaches, environment, latest tools

## I. INTRODUCTION

As there has been a major leap observed in the software industry particularly the technological advancements in the software development in comparison to past few years, the software sector has experienced growth. The creation of top-notch software solutions to meet end-user demands is the next challenge. Software development life cycle maintenance is the most essential phase. The development team is responsible for maintaining the product they deliver to their clients throughout this phase [16]. For doing so, the software maintenance task must be taken up very precisely. Up to two-thirds of the total expenditures associated with the software life cycle are often attributed to software maintenance activities [7]. This further includes the techniques of error rectification, capability additions, capability deletions, and optimization. In the community of software engineers, regression testing is a topic that has received extensive research. It is necessary to do regression testing once the software has been updated or modified. Various academicians have classified regression testing techniques, and thereafter it has to be analyzed to further

explore the prioritization and selection of the test cases for performing the regression testing.

Over 70% of the testing budget is spent on regression testing, and testing accounts for more than 40% of the cost of maintaining software [3]. Regression testing is considered to be a crucial component of the maintenance of any software, even though it takes a lot of time. This type of testing verifies that newly upgraded software does not introduce unforeseen problems. Regression testing is defined to be the most widely used techniques for guaranteeing the highest of the qualitative software products during the relevant phases of software development cycle, which is further used by all software companies [6]. Both manual and automated testing are used in software industry for regression testing. Due to a lack of expertise, businesses frequently select automatic testing tools for regression that are insufficient for their objectives [11]. It is crucial for ensuring the quality of the software to be developed, but this will lead to higher cost and will increase the sizable amount of the expenditures associated with software manufacturing. Additionally, managing this regression testing process requires a significant amount of engineer work. An emphasis of this study is on the identification of the tools and techniques of regression testing. Minimization of the test case suite, selection of the Regression test and prioritization of Test case are just a few of the approaches that have been proposed and created to help in the identification of regression testing procedures and remarkably reducing the cost of regression testing.

The major aspect included in this paper is to address the overview and the detailed concept of the process of regression testing including the various methods of performing the tests and the available present-day technologies. Regression testing though is a very costly, but highly essential, component of software testing [10]. We have discussed the commonly accepted notion of regression testing and how various academics have conceptualized and treated this concept. In this portion of the paper there are many different types and categories of regression testing methodologies. We have looked at how to choose and rank test cases for regression testing, as well as implement the relevant search algorithms for this purpose. In addition, we discussed how to evaluate different regression testing techniques, as well as the challenges that these approaches face, in order to better understand how they work. Then we will move toward how we could minimize cost and increase

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# Childhood and Growing Up

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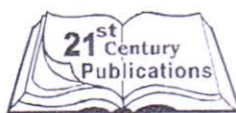
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# Higher Education in India

Trends, Challenges and Opportunities



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# HIGHER EDUCATION IN INDIA (Trends, Challenges and Opportunities)

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# Continuous Professional Development and Teacher Education

*"Who dares to teach must never cease to learn."-John Cotton Dana*

## Abstract

*It is impossible to move through this life or world without education. Education is pre-requisite for any nation and teacher or rather empowered teacher is the backbone of this entire system. The quality of education depends on the quality of its teachers. No denying the fact that there is a wide chasm between the expectations and ground realities. The endless challenges and issues of pre and post employment, exploitative employment conditions, adhocism and poor salaries (ever wonder about bargaining with teachers about salary at the time of job interview! Yes, you heard that right!). In addition to these issues there is absenteeism, outdated teacher knowledge and skills, lack of teacher professionalism and commitment. Still this notion of **empowered teacher** can move mountains. The quality and standard of education in a country can be gauged by the way it manages its teachers' quality by initial preparation and continuous professional development.*

**Keywords: Continuous, Professional, Professional Development, Teacher Education**

## Introduction

Education is a process of enlightenment and empowerment of every individual, society and nation as a whole. Though it is institutionalised and specific for certain period of time but has its long lasting impact on entire life as it assists not only to adapt but to excel in ones environment by contributing significantly. Kothari Commission (1964-66) has righteously said, "Of all the different factors which influence the quality of education and its contribution to nation development, the quality, competence and character of teachers are undoubtedly the most significant." A nation is built by its citizen and citizens are moulded by the education system where teachers play the pivotal role. A teacher can be inspiring and transforming. National Education Policy 2020 also affirms that, "Teachers truly shape the future of our children-and, therefore, the future of our nation" thereby reaffirming that teachers play pivotal role in nation-building by creating value laden and highly qualified human resource in their classrooms. For this herculean task teachers must equip themselves with all the necessary skills and continuous professional development provides these opportunities to all the teachers.

## Professionalism and Education

Literal meaning of professionalism can be understood as a way of doing a job that shows great skill. It is being trustworthy, ethical, up-to-date and competent. With reference to education it can be understood as a continuous process that adds value to teacher's career throughout. It becomes more relevant and effective when the teacher conducts himself/herself through reflective practice and analyse the impact of training on his/her teaching or it can be said that when a teacher is able to measure the outcome of the training and use them further in her teaching and learning process. These development plans must be the part of teacher's planning based on his/her need, having clarity with respect to the objectives that he/she wish to achieve. It should be based on achievable goals and targets and must be in sync with their current position and specific subject needs.

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## Destination Marketing

### Creating Memorable Tourism Experiences

This new volume provides a snapshot view of destination marketing, the art of using marketing to create memorable experiences for travellers at specific destinations. The book begins with an introduction to destination marketing that discusses its origin, how it evolved into its present state, important definitions, destination marketing environments, destination value chains, consumer behavior, along with information on segmentation, targeting, and positioning for destinations.

The authors cover the various tourism attractors, the most common of which include heritage tourism, agro-rural tourism, natural/scenic attractions, man-made attractions, spiritual/religious tourism, wildlife tourism, business tourism, festivals, art and culture tourism, sports and adventure tourism, wellness and medical tourism, culinary tourism, special interest tourism, and stopover tourism. The destination marketing mix is also discussed, covering the seven Ps of destination marketing. Promotional tools are discussed as well as destination branding methods along with various brand elements: destination names, URLs, symbols, characters, slogans, and jingles.

The book also addresses destination marketing organizations (such as convention and visitor bureaus that help promote and market local attractions), performance measurement tools; the use of social media and digital marketing; tried-and-true strategies for destination marketing, such as segmenting, targeting, and positioning; the role of sustainability in destination marketing; the gap between theory and practice in destination marketing; and the future of destination marketing, with a view to advancements in technology as well as health and safety issues.

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# Applications of Artificial Intelligence in the Attainment of Sustainable Development Goals



Nisha Solanki, Archana Chaudhary, and Dinesh Bhatia

## Introduction to Artificial Intelligence and Sustainable Developmental Goals (SDGs)

In its basic form, artificial intelligence is a multidisciplinary strategy that combines computer science with substantial datasets to solve problems. AI not only is confined to systems that think and act like humans but also provides rationalised thinking to act accordingly. With the emergence of new technologies in the nineteenth century, lots of progress is made in computer sciences which has influenced society Hanson III and Marshall [7]. The majority of technologies were beneficial; however, some have a detrimental impact on society which needs to be criticised rationally and needs to be worked on so that loopholes may be overcome. Artificial intelligence has attained breakneck speed and made progress in every aspect of life and has supercharged humanity. The AI makes further benchmark by incorporating more data computing and other applied areas such as image progressing, artificial neural network (ANN) and Internet of things (IoT). This multiplier effect of AI can accelerate the achievement of objectives and goals of SD Hanson III and Marshall [7]. The application of AI having multiplying effect allows the achievement of the SD goals. This plays an extremely important and a decisive role in the evolution of

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## CROP DIVERSIFICATION IN PUNJAB: A SPATIO TEMPORAL ANALYSIS

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**Abstract:** The Punjab state in India is famous for its rich agrarian status. The crop diversification indicates how much different types of crops a farmer is growing on a given piece of land. In the present study, we have made an attempt to analyse the crop diversification for different Agro-climatic zones of Punjab. We have used two indices to measure the level of crop diversification, these are, Herfindahl Index and Entropy Index for the different years and showed the trend in over the period of time. The results for both the indices indicates the farmers are moving towards wheat, paddy and vegetables at the cost of other crops. This indicates monoculture implying farmers are moving from crop diversification to crop specialization. We have also tried to highlight the problem of depleting water level in the state and worsening the condition. Keeping the high dependence of farmers on ground water level in Punjab, the crop specialization is for wheat, paddy and vegetables that consumes more water and severely affecting the biodiversity as well.

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## **Introduction**

Indian economy has always known for its agriculture sector. The agriculture sector acts as a pillar in achieving economic development in terms of food security and removing poverty. The share of agriculture in GDP of India is decreasing since independence but the rural India is still dependent on agriculture sector for their livelihood and employment. Even in the times of COVID-19, among the other two sectors, manufacturing and service sector, the agriculture sector was the least hit by the pandemic and showed a positive growth rate. The total food grain production in India was 3087 lakh tonnes in 2020-21.

India has experienced high growth in the agriculture sector due to the green revolution technology in 1960s and has become self-sufficient in food grain country. It is a challenge for the agriculture sector to sustain the food supply to feed the second most populated country in the world. However, rise in agricultural activity has caused several environmental challenges also like loss of biodiversity, land degradation, over irrigation, etc. that creates threat for the future of agriculture sector at the regional levels.

Crop diversification provides a wide variety of crop choice in a given area and to improve productivity & minimize the risk. Crop diversification is generally regarded as a practice wherein the farmer shifts from traditionally low earning crops to high earning crops. There could be several factors behind crop diversification. The price could be one of the factors, when the price of certain crop is relatively more to other crops, then farmers would prefer to grow the crop that has higher price in the market. The infrastructure related factors, profitability, weather conditions, government policies, etc. are the determinants for the crop diversification.

### **Punjab: Rich Agrarian State in the Country**

Punjab is a state situated in northern part of India sharing its border with other states like Jammu & Kashmir, Rajasthan, Haryana. It has an area of 50,362 Km square. The climate of Punjab is mostly influenced by the Himalayas and Thar Desert. The three rivers Sutlej, Ravi and Beas flows through the state. The annual normal rainfall received by Punjab is 61.9 cm and around 75% of it is received in the monsoon time period. The state is highly dominated by agriculture and thus the agriculture sector consumes 85% of total water consumption in the state. The state is facing depletion of ground water because of over-exploitation of it by the farmers through tube wells.

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# Generation of power system using renewable resources for sustainable development leading upcoming technologies: an analysis

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**Abstract**—The appraising emanation and extension of renewable energy in contemporary scenario spatulation of electricity through natural resources (wind, solar, hydropower) has proliferate. In 2022, 41.4% of energy proportions stationed is through renewable sources. In accordance with statistics only 3.2% of the summation electricity is being generated by nuclear sources in 2021. Because of contaminating pollutants, carbon aggravation and ozone layer attenuation switching for sustainability is the wholly approach. Sustainable vitality fragments are indispensable to have staunching liability mount proficiency for averting immense scale deactivation of renewable energy. To minimize carbon energy 100% call for application of renewable energy is anticipated, by introducing same as dominant technology. In this research paper we would be highlighting the power generation using renewable resources and it's ameliorating exigency by visible increment of its fabrication. Furthermore, divergent renewable genesis for its withal production, and the determinants which snags its generation while delineating the enumeration of production in different states in India heeding their requisite. Almost 175GW renewable energy is being targeted by the termination of 2022 as its network is explored progressively. The scrutiny out-turn bespeak that the sustainable form of energy can never be disused neither supplant. We also pinnacle the journey of power systems in India across various states and territories and the corresponding analysis of the respective hinderances, climatic conditions and demand-supply of electricity in past decades and the sources of scrutiny and their evolution in present scenario. Emanating of technologies in accordance with its sustainability with respect to the development in power system i.e., electricity progression.

**KEYWORDS:** power generation, renewable resources, analysis, non-renewable resources, electricity, progressive growth, development in current scenario, upcoming technologies.

## I. INTRODUCTION

Initiation of electricity from renewable resources subsist to pullulate progressively from past one decade, twain in arrant enormity together with an immense fragment of nation inception, even with electricity and energy utilization peculiarity equated with covid-19 pervasive. Aggregated leccy production in India in 2022 is 4,07,797MW and as a part of total production 1,23,423.746MW is produced by renewable sources [1]. The share of renewable power generation [hydro, wind, solar, BM power/Cogen, waste to energy and hydro power] exceeded 30%, illustrating the humongous growth as well as an aspiration for fulfilling the inclination target. In this ensemble decade renewable electricity generating technologies has constituted its

immense growth which further spearhead the installation capacity of these technologies. In 2021 electricity causation by renewable sources is around 103.05GW, while in 2022 is progressed around 163GW already [2][3]. India is the world's 3<sup>rd</sup> largest nation as a producer of renewable energy with 40% of the total installed electricity proportions coming from non-fossil fountainhead [10] {solar likewise 48.55GW, wind approximately 40.03GW, small hydro like as 4.83GW, while large hydro 46.51GW, even biopower 10.62GW and same conveys to nuclear as 6.78GW} [4].

The aim of this entire research is too extant the analysis, in consistency of statistics, tabular and graphical representation, on the progression and fabrication towards renewable energy by cooperating the existing and Avant-grade technologies. Both technologies and methodologies change frequently and it shows variations from original entity, so incorporating originality in emerging technologies has been scrutinized.

## II. ENQUIRING BREAKTHROUGH TOWARDS RENEWABLE ENERGY

The energy efficient resolution requirement is much withal in consequence with sustainability if we discern the per capita utilization of energy. From past one-decade, proportionately exhaustion of energy is augmenting at CAGR (compound annual growth rate) of 39.91% (IBEF, 2022), and specifically that we procure 60% of the uninterrupted energy from unsustainable resources i.e., non-renewable energy, this robust extension could unquestionably strangle the whole nation preferably, thus inventive infusions to extricate this power development retaining the economic evolution burgeoning. The strive to enlarge vulnerability on renewable power sources is definitely an enormous stride ahead which exhibits a substantial consciousness amidst the originators of strategy with regard to RES. This compos mentis will certitude navigate alternative blueprint resolutions, for instance in the burgeoning and contrivance the numerous power initiating structures. Farther this will uplift the stipulation of the ingenious consequence [6]. By bringing up alternative fount of energy, it can be concluded as Renewable energy sources (RES). Without any outpouring or hazardous waste is gravitate to dispense limpid energy. In, India renewable energy sources are as follows:

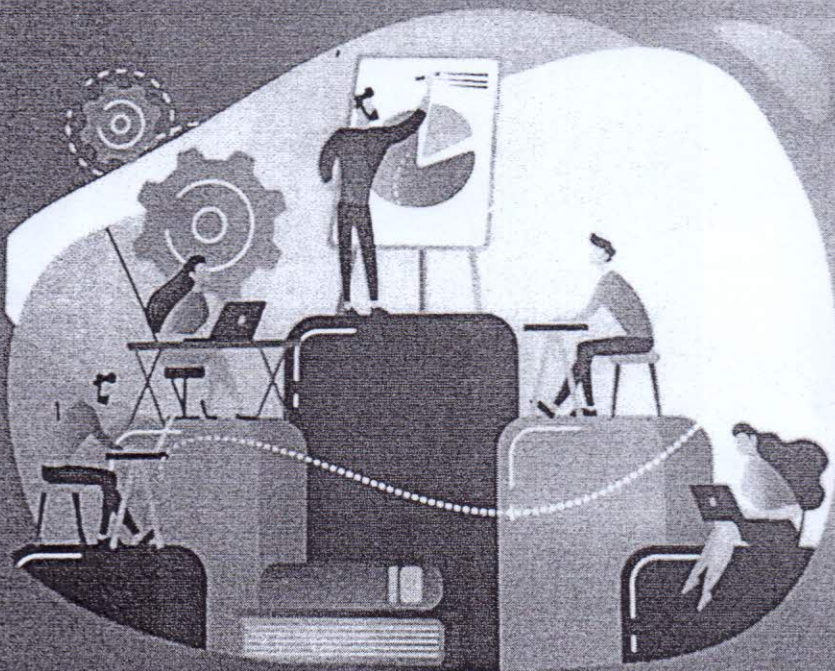
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*Training and Development by Dr. Monika Tuxhir Bohra, Dr. Jisha Nerya*

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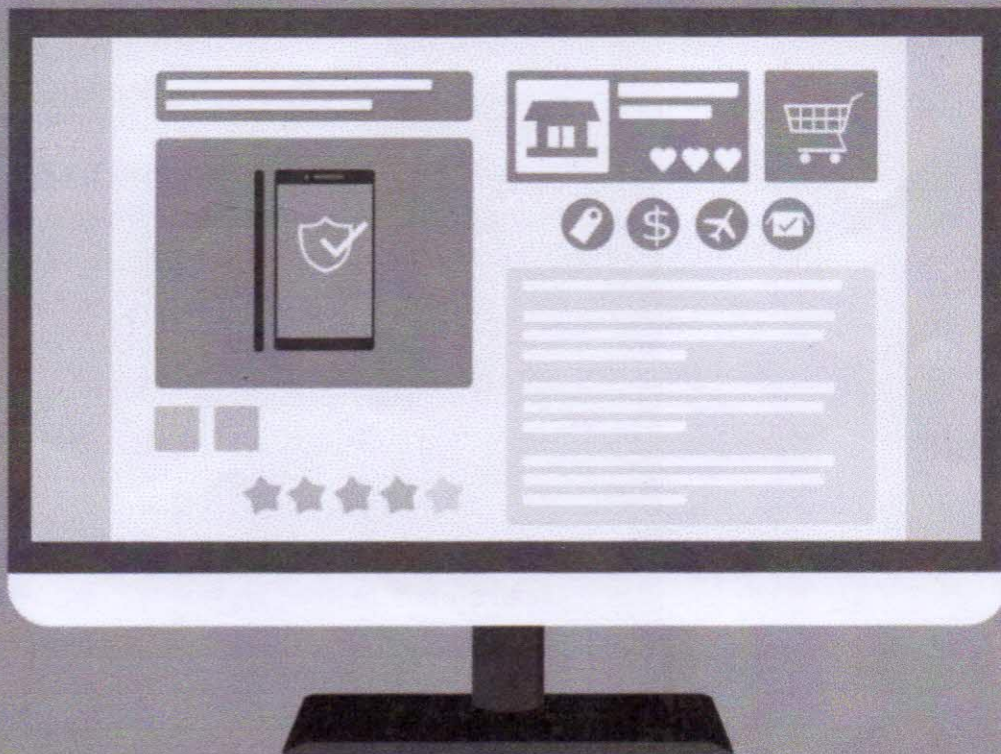
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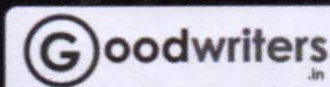


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# ONLINE SEXTORTION: A NEW THREAT IN CYBERSPACE

By

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## Introduction

Men are harassed, but women are more frequently the targets<sup>335</sup>. Some Internet users become so enamored with the virtual world in various settings that they desire to spend more and more time there, often at the expense of their offline relationships<sup>336</sup>. The reason they are so absorbed may not be totally clear to them. They are unable to articulate their addiction with any accuracy.

One's life is not being consumed by a chat room or email, but rather by the underlying, subliminal dynamic it has sparked<sup>337</sup>. Undoubtedly, the Internet has both positive and harmful sides<sup>338</sup>. Its advantage is that it makes it possible to enrich and enhance how people function in many different ways. On the downside, using the Internet can put people in danger and expose them to significant hazards<sup>339</sup>.

Promises and dangers faced by female Internet users (users) are noted in the context of women utilizing the Internet<sup>340</sup>. The free, legal, useful, and joyous use of the Internet is thought to be seriously hampered by sexual harassment and offense, which not only drive away users but also seriously affect those who stay online whether out of choice or obligation.

A large number of teenagers and young adults have become enthralled by the sexting trend<sup>341</sup>, however, it may put people at risk by posing a threat to those who believe it is safe to engage in

<sup>335</sup>. Barry S. Roberts and Richard A. Mann, 'Sexual Harassment in the Workplace: A Primer' (2015) 29(2) ALR < Sexual Harassment in the Workplace: a Primer (uakron.edu) > accessed 1 October 2022

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# Role of Banks In the Development of Rural Haryana

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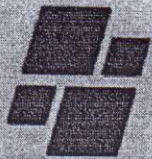
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Who is my biggest inspiration

My Husband  
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Who has always been my pillar of support

My Mother  
(Indira Tehlan)

For being my first teacher who taught me the real essence of life : spirituality

My all family members & friends

For encouragement.

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## About The Author



Dr. Aanchal Tehlan is specialized in field of Mathematics, her area of specialization includes numerical analysis, fuzzy mathematics & artificial intelligence. Dr. Aanchal Tehlan have more than 8 years of teaching & research experience. She has worked in reputed institutes like Netaji Subhash Institute of Technology & Delhi Technological University. She has written many research papers published in various SCOPUS & ESCI Journals. She has also received copyright for her research article and published patent in Indian Patent Journal, Govt of India. She has written and edited more than five books. She has worked on International research projects in collaboration with the Government of Sweden, Europe. Her credentials include Ph.D. (Mathematics), Honors in Mathematics from Jesus & Mary College, University of Delhi, Masters in Pure Mathematics from Lady Shri Ram College, University of Delhi. Her area of interest includes fuzzy sets, information theory & artificial intelligence.

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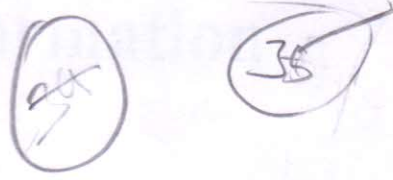
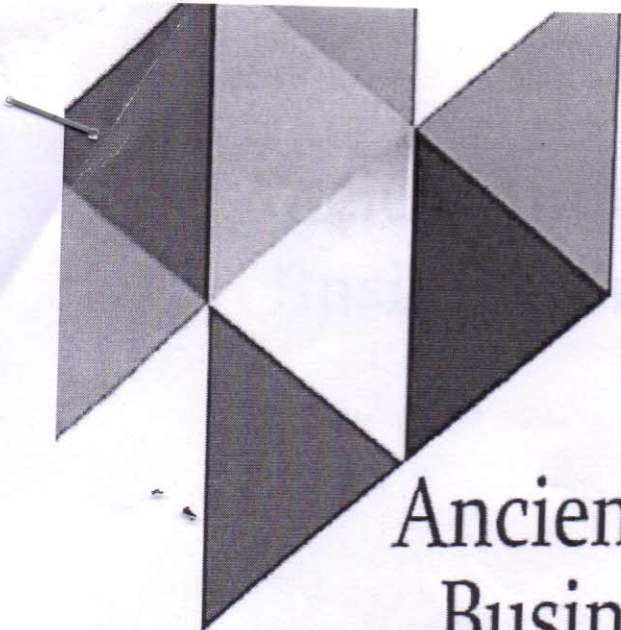
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# Ancient Indian Wisdom for Business Transformation



**Editors**

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**Sanjay Dhingra**

**Deepti Prakash**

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# **Ancient Indian Wisdom for Business Transformation**

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## Role of India's Management Education in Nation Building

**Shruti Bhuttani<sup>1</sup>, Gaurav Bhardwaj<sup>2</sup>, Monisha Khanna<sup>3</sup>**

<sup>1</sup>Assistant Professor, Jagannath International Management School,  
Vasant Kunj, New Delhi.

<sup>2</sup>Assistant Professor, Maharaja Surajmal Institute, JanakPuri, New Delhi.

<sup>3</sup>Student of Management Studies, Jagannath International Management School,  
Vasant Kunj, New Delhi.

### Introduction

As said by APJ Abdul Kalam that in the end, education in the truest sense is the search for the truth. The pursuit of knowledge and enlightenment is an endless one. Indeed, Indian culture has a remarkably deep and rich body of knowledge that dates back thousands of years. Numerous intellectual and spiritual traditions have their roots on the Indian subcontinent, and as a result, the world has benefited from a great corpus of books and ideas that come from these traditions. Indian civilization has also made significant contributions in other fields of knowledge. Mathematics and astronomy flourished in ancient India, with notable contributions such as the concept of zero, decimal numerals, and the development of the decimal system. Indian astronomers made accurate observations of celestial bodies and formulated sophisticated models to understand their movements.

The concept of "knowledge of India" would encompass information about ancient India, its contributions to current India, its accomplishments and problems, and a comprehensive understanding of India's future ambitions in terms of education, health, the environment. As per the Nation Education Policy 2020, These elements are integrated in a scientific and precise manner in the school curriculum wherever pertinent. Tribal knowledge, as well as indigenous and conventional learning methods, is all included in Indian Knowledge Systems through hastronomy, architecture, medicine, mathematics, agriculture, philosophy, games, sports, yoga, literature, engineering, linguistics. Students in secondary school might choose to take an interesting course on Indian Knowledge Systems. In schools, competitions may be arranged to teach various themes and subjects using enjoyable native games. At the appropriate times during the academic year, video films about inspiring Indians from the past and present who have made

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### About the Book

This book of "Business Research" provides a refreshing insight to the basic aspects of research methodology. This book offers in-depth coverage of topics such as concept of research problem alongwith the nuances of research questions, sampling designs, measurement as well as scaling. Exercises and model papers are also provided in this book for the ease of readers. This book is useful not only for students who are pursuing their studies but also for those working in the educational institutions and corporate world.

### About the Author



Dr. Sanjay Kumar is working as a Principal in Saraswati College of Professional Studies (PG College), Ghaziabad, Uttar Pradesh. He is a postgraduate in Education Management, Commerce and Marketing Management. He is also UGC-NET qualified in Education, Commerce and Management. He has a doctorate degree in Business and Management from JNU, Jaipur. He has completed his marketing research and analysis course from IIT Roorkee under NPTEL in 2017. He was gold medalist with 93% marks. He possesses more than 23 years of rich experience in academics, administration, research, accreditation and online education. He has authored 4 text books and 5 edited books. He has contributed more than 10 research papers in UGC notified national and international journals. One of his papers "Understanding different issues of unit of analysis in a Business Research" has more than 70 citations. He has been invited as expert speaker, keynote speaker and resource person in more than 20 national and international conferences, seminars, training programs and faculty development programs. He has developed an online 30 hours "Certified Digital Teacher Course". He has successfully conducted more than 30 online workshops on Digital skills. He has been awarded seven times for his contribution in Education and Society. He is a chief editor of two national level journals-1. EduLink : Journal of Multidisciplinary Research and 2. The CTE National Journal : Journal of Multidisciplinary Research. He is president of Council for Teachers Professional Development (CTPD), Program Director of Social Development and Research Foundation (SDRF) and Secretary General of Council for Teacher Education Foundation (CTEF), Delhi-NCR Chapter.



Dr. Sarita Chaudhary is currently working as an Associate Professor & Head of MBA Department at Maharaja Surajmal Institute of Technology, New Delhi, India. She has MBA with specialization of Marketing from Dr. Bhanu Rao Ambedkar University, Agra, Uttar Pradesh and Ph.D from Chaudhary Charan Singh University, Meerut, Uttar Pradesh. She is bestowed with excellent communication skills and multi-skill abilities in various facets of academics and administration. She has holds 22 years of rich experience in academic, research and corporate. Her areas of interest are Marketing, Consumer Behaviour, Sales and Distribution and Retail Management. She had been convener and guest speaker at various National and International Conferences. She has published many National and International papers. Her work is published in various journals of international repute and high indexing such as Springer, Elsevier, and Scopus, etc. with many citations and download. Apart from scholarly contribution she has organized many workshops/seminars, industrial visits, industrial tie-ups etc. Her research interests include Marketing, Management, NGO Management, Consumer Behaviours, and related areas of Business Management. She is actively publishing and writing papers in these areas.

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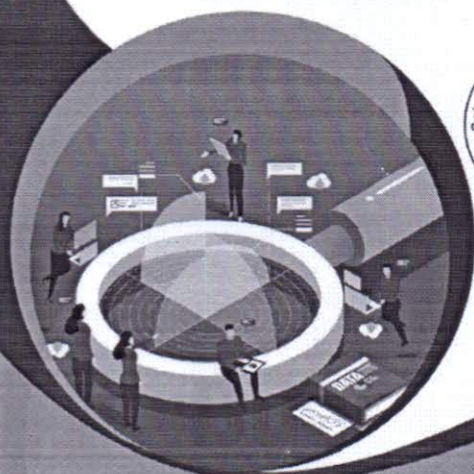
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## The Impact of Digital Marketing on Sales of Businesses: An Empirical Study with Special Reference to Pathshala

Dr. Richa Arora\*, Dr. Dimpy Sachar,\*\*  
Dr. Richa Nangia,\*\*\* Dr. Rashmi Singel\*\*\*\*  
& Dr. Suman Yadav\*\*\*\*\*

### ABSTRACT

Digital marketing was an already trending technique of marketing but it has got a huge boost due to the COVID 19 pandemic. There are multiple marketing techniques that can help boost lead generation and conversion process. Pathshala, one of India's education market place where people can manage, search, advertise and sell educational products and services has implemented various digital marketing techniques. The present study assesses the impact of digital marketing in generating more leads and high conversion rate thereby efficiently assisting businesses by increasing their productivity. For this purpose, primary data is collected through structure questionnaire on five point Likert scale from the students who have pursued atleast one course from Pathshala. Convenient sampling method which is a non-probabilistic method is used and further data analysis is done using Cronbach's reliability test, correlation using SPSS software. Results show the strong correlation relationship between digital marketing practices and productivity of a business.

**Keywords:** Digital Marketing, Covid-19 Pandemic, Sales, Productivity, Pathshala.

- 
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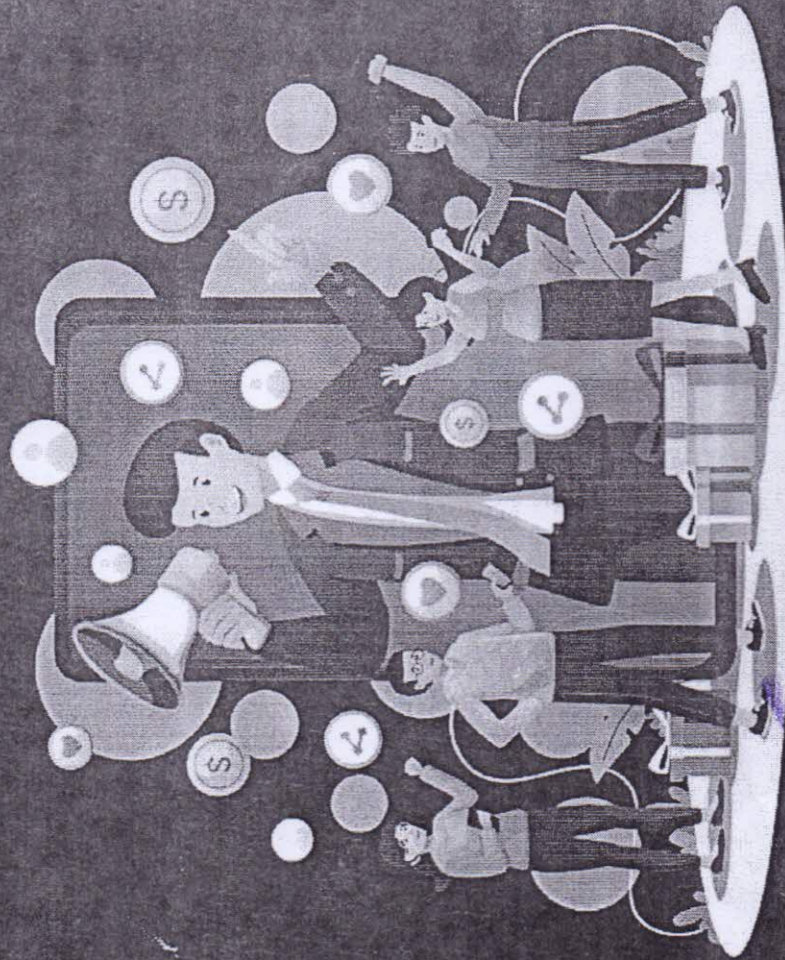


# DIGITAL MARKETING

## DIGITAL MARKETING

Digital marketing refers to the promotion of products, services, or brands using various online channels and digital technologies. It encompasses a wide range of strategies and tactics aimed at reaching and engaging a target audience, generating leads, increasing brand visibility, and driving conversions. Digital marketing leverages the power of the internet and digital platforms to deliver marketing messages to potential customers.

Digital marketing offers businesses a cost-effective and highly targeted approach to reach and engage their target audience. It allows for precise audience segmentation, real-time campaign monitoring, and the ability to adapt strategies quickly based on data-driven insights.



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## Chapter 12

# Challenges Faced by Affiliated Institutions (Tier- II) in Outcome-Based Education (OBE) Implementation: A Literature Survey

Sunil Kumar

 <https://orcid.org/0000-0002-8881-2761>

GITAM School of Business, GITAM University (Deemed), Visakhapatnam, India

Anshu Lochab

Maharaja Surajmal Institute, New Delhi, India

Manoj Kumar Mishra

O.P. Jindal University, Raigarh, India

### ABSTRACT

*The objective of this study is to identify the issues affiliated institutions faced during the effective implementation of outcome-based education (OBE). The literature from both empirical and conceptual papers has been taken in order to derive out the challenges before and during the implementation phase of OBE. Evident gaps in the initial phase of implementation were identified. Affiliated institutions faced many challenges in the way of OBE implementation. Lack of resources and inability to adopt change have become major hurdles on the way to OBE implementation. The present study is conducted on Affiliated Management Institute. The same can be replicated for other disciplines as well. The structured projected in the study will guide the management institutions in elevating their quality level.*

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Anshu





## Chapter 4

## Essentials of Data Wrangling

Menal Dahiya, Nikita Malik, Sakshi Rana

Book Editor(s): M. Niranjanamurthy, Kavita Sheoran, Geetika Dhand, Prabhjot Kaur

First published: 14 June 2023 | <https://doi.org/10.1002/9781119879862.ch4>Data Wrangling: Concepts,  
Applications and Tools

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## Summary

Fundamentally, data wrangling is an elaborate process of transforming, enriching, and mapping data from one raw data form into another, to make it more valuable for analysis and enhancing its quality. It is considered as a core task within every action that is performed in the workflow framework of data projects. Wrangling of data begins from accessing the data, followed by transforming it and profiling the transformed data. These wrangling tasks differ according to the types of transformations used. Sometimes, data wrangling can resemble traditional extraction, transformation, and loading (ETL) processes. Through this chapter, various kinds of data wrangling and how data wrangling actions differ across the workflow are described. The dynamics of data wrangling, core transformation and profiling tasks are also explored. This is followed by a case study based on a dataset on forest fires, modified using Excel or Python language, performing the desired transformation and profiling, and presenting statistical and visualization analyses.

## Recommended

## Data Wrangling Dynamics

Simarjit Kaur, Anju Bala, Anupam Garg

## Data Wrangling: Concepts, Applications and Tools, [1]

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## 16. An Empirical Investigation of Capital Structure in Indian FMCG Sector.

Priyanka

Assistant Professor, Department of Commerce, Maharaja Surajmal  
Institute, Janakpuri, New Delhi, India

**Abstract:** One of the most essential choices that a business must undertake is concerning its capital structure or fundraising. The concept of an ideal capital structure has been the topic of numerous researches, but there is no consensus on what it signifies. In this study, an endeavour has been undertaken to highlight the variables that determine the capital structure choices made by Indian FMCG companies. Nine of the top FMCG firms with operations in India were the focus of the research. These companies are all S&P BSE (FMCG) Fast Moving Consumer Goods Index constituents and are all listed on (BSE) Bombay Stock Exchange. The research encompasses a decade, commencing 2011–12 to 2020–21. Six independent variables—profitability, tangibility, liquidity, company size, sales growth, and non-debt tax shield—and one dependent variable—the debt equity ratio—have been utilized in the study. The data is analysed with the help of E-Views 12. The determinants influencing the capital structure of the organizations have been determined employing



## 129. Hospitality Industry in India after COVID-19 with special focus on Tourism.

43 35

**Dr. Anita Sharma**

Associate Professor, Maharaja Surajmal Institute (GGSIPU), India

**Abstract:** It is a matter of great happiness that hospitality industry is reviving after serious unwanted effects of COVID-19. Despite being the worst effected sector by the COVID -19 the revival of the sector is giving a great relief to the industry and the country as well. The epidemic has affected local communities generally, affecting not just foreign exchange earnings (FEE), but also regional developments and job possibilities. With worldwide demand falling as a result of travel restrictions, which include the closing of various borders to stop the spread, the travel and tourism industry is among the most affected. The purpose of this article is to examine the effects of COVID-19 on the hospitality sector in India, with a focus on tourism.

**Keywords** - COVID-19, Tourism, Hospitality and Coronavirus

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## 9. Analysis of the factors of donations: In special reference to Delhi.

Pooja Singh<sup>1</sup>, Seema Shokeen<sup>2</sup> and Samiksha Garg<sup>1</sup>

<sup>1</sup>Department of computer applications, Maharaja Surajmal Institute, Delhi,  
India.

<sup>2</sup>Department of business administration, Maharaja Surajmal Institute,  
Delhi, India.

**Abstract:** Donation is a streamlined technique to straddle the aperture allying the affluent and the impoverished. Those who have surfeit money desiderate to succour the deprived to convene their rudimentary requisite. It is a manoeuvre that the natives of a palatinate can clutch to bestow to the burgeoning of mankind. Donation is a largesse for the obligatory to convenience a genesis. It may apprehend copious configurations, encompassing coinage, appurtenance namely: apparels, plaything, sustenance, etc. or may appease medicinal exigency. Numerous handouts anticipate on benefaction to corroborate their exertion inscribing bizarre aggregation of world's imperative snags. We disseminate a narrative analytical interpretation to deduce what arbitrations and intercessions oeuvre to accrue humanitarian donations. We assemble enjoinders





## 4. A WhatsApp Bot Designed for Small Health Clinics

Tarunim Sharma<sup>1</sup> and Vinita Tomar<sup>2</sup>

<sup>1</sup>Assistant Professor, Department of Computer Science, Maharaja  
Surajmal Institute, New Delhi, India

<sup>2</sup>Assistant Professor, Department of Computer Science, Maharaja  
Surajmal Institute, New Delhi, India

**Abstract** - In our modern era, seeking medical care has become an integral aspect of our lives. It is widely recommended by physicians to schedule regular monthly appointments with a healthcare professional to maintain optimal health. In line with this, many individuals choose to visit a doctor who has been providing care and oversight for them over the past few years, establishing a trusted relationship. These doctors can be found in hospitals or even in small neighborhood clinics, providing personalized and accessible healthcare services. The focus of this project is centered around a specific small neighborhood health clinic, catering to the local community's medical needs. To enhance convenience and accessibility, a specialized bot has been developed. This bot offers a range of functionalities, including booking appointments with the doctor of choice, scheduling COVID vaccine slots, accessing and downloading previous prescriptions for easy reference, and facilitating the seamless

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# 1. Comparative Analysis of various AI Chatbots.

Menal Dahiya, Nikita Malik<sup>✉</sup> and Nitish Kumar

Dept. of Computer Applications, Maharaja Surajmal Institute, New Delhi,  
India-110058

**Abstract:** Artificial Intelligence (AI) bots are increasingly present in our daily lives, with applications being used in customer service and personal assistants. However, with so many types of AI chatbots out there, finding the best chatbot for a specific task can be difficult. This research paper provides a detailed analysis of five AI chatbots: ChatGPT, Bard, BotPress, Dialogflow and Bing AI. The paper analyzes the features, capabilities and functionality of each bot in different scenarios, comparing and contrasting them. The study aims to help users choose the best AI chatbot for a specific task by providing a detailed assessment of each chatbot's strengths and weaknesses. The study concludes with recommendations based on the findings, which can guide users in choosing the right AI chatbot for their needs.

**Keywords:** Artificial Intelligence, Chatbots, Performance.

**Introduction**

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[10]. Rohit Trivedi, Shafi Khadem, (2022), "Implementation of AI techniques in microgrid control environment: Current progress and future scopes," Energy and AI, Volume 8.

## 31. Ethical Leadership: A Catalyst for Organizational Success

Shavita Deshwal

Associate Professor and Head, Department of Business Administration,  
Maharaja Surajmal Institute, New Delhi, India

**Abstract:** This paper explores the concept of ethical leadership and its significance in fostering organizational success. Ethical leadership is characterized by integrity, transparency, accountability, and the promotion of ethical behaviour within an organization. The paper provides an in-depth analysis of the theoretical foundations of ethical leadership, examines the key dimensions and attributes of ethical leaders, and explores the impact of ethical leadership on various organizational outcomes. Furthermore, the paper discusses the models of ethical decision making and role of values and morality. Through this research, it becomes evident that ethical leadership is not only a moral imperative but also a strategic advantage for organizations in today's complex and dynamic business environment.

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## 29. Nurturing Entrepreneurial Mindsets among Millennials from a Teacher's Perspective

**Dr. Anviti Rawat and Dr. Preeti Malik**

Assistant Professor, Department of Commerce, Maharaja Surajmal  
Institute, New Delhi, India

**Abstract:** The world is in state of unrest. The COVID-19 pandemic has impacted every corner of the globe, profoundly impacting our human resources, job structures, economies, societies as well as one's personal lives. The pre and post COVID -19 times have brought drastic changes in skill set requirements among the millennials. In the past focus was on basic academic skills of reading, writing and arithmetic that shifted to refocusing on life skills and then ultimately to entrepreneurial skills for developing future citizens as job creators and not just job seekers. An entrepreneurial mindset—attitudes and behaviors that encapsulate how entrepreneurs tend to think and act—enables one to identify and capitalize on opportunities, change course when needed, and view mistakes as an opportunity to learn and improve. If a student decides to become an entrepreneur, an entrepreneurial mindset is essential. Last but not the least in the paper a survey has also being conducted to identify the different usage of pedagogical techniques for fostering entrepreneurial mindset among students.

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## 25. Ethical Business Practices: A Road map for Integrated Sustainability.

**Dr. Dimpy Sachar<sup>1</sup>, Ms. Kanika Chaudhary<sup>2</sup> and Sneha Kashyap<sup>3</sup>**

<sup>1</sup>Assistant Professor, Department of Computer Applications, Maharaja Surajmal Institute, New Delhi, India

<sup>2</sup>Assistant Professor, Department of Business Administration, Maharaja Surajmal Institute, New Delhi, India

<sup>3</sup>BBA (Gen) Student, 6<sup>th</sup> Semester, Maharaja Surajmal Institute, New Delhi, India

**Abstract:** The purpose of this research paper is to explore the concept of ethical business practices as a roadmap for integrated sustainability. The paper focuses on the importance of ethical business practices in ensuring the sustainability of organizations in the long run. The paper presents a conceptual framework that integrates ethical business practices and sustainability, and analyses the literature on the topic. As the world becomes increasingly aware of the need for sustainable development, businesses are starting to prioritize ethical practices to achieve integrated sustainability. This paper explores the importance of ethical business

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## 71. Micro Finance in India: A Bibliometric Study

Chetna Grewal

Assistant Professor, Maharaja Surajmal Institute, New Delhi, India

**Abstract:** Microfinance has emerged as a powerful tool for promoting financial inclusion and fostering economic development, particularly in developing countries like India. Microfinance institutions (MFIs) in India aim to provide financial services to the unbanked and underprivileged segments of society, including small entrepreneurs, self-help groups (SHGs), and low-income individuals who lack access to formal financial institutions. Microfinance in India operates on the principles of financial inclusion, social development, and sustainable livelihoods. By extending credit to marginalized communities, especially women, it fosters gender equality, poverty reduction, and inclusive growth. This paper tries to seek clarification on how much studies have been done in Indian economy with regard to micro-finance by extracting the data from Scopus database and have detailed bibliometric analysis of production over the years, profuse authors in the field and main keywords used in those papers.

**Keywords:** Micro-finance, Bibliometric, India, Scopus database

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## 124. Sustainable Competitive Advantage a Roadmap to Success: Case Based Approach.

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<sup>1</sup>Ms. Ayushi Tomar and <sup>2</sup>Dr. Beena Devi and <sup>3</sup>Dr. Anshu Locha

<sup>1</sup>Student, Maharaja Surajmal Institute, New Delhi, India

<sup>2</sup>Assistant Professor, Maharaja Surajmal Institute, New Delhi, India

<sup>3</sup>Assistant Professor, Maharaja Surajmal Institute, New Delhi, India

**Abstract:** In an increasingly interconnected world, globalization has opened up new opportunities for international startups to expand their operations across borders. In today's hypercompetitive business environment, organizations strive to achieve a sustainable competitive advantage to drive long-term success and growth. This research paper explores the concept of competitive advantage as a key determinant of organizational success and examines the components, challenges, and opportunities associated with its attainment. To illustrate these aspects, three prominent case studies—Patanjali, Amul, and Jio—were analysed, showcasing how these organizations leveraged competitive advantage to achieve remarkable success in their respective industries.

The paper begins by discussing the foundational components of competitive advantage. These include unique capabilities, resources, strategic positioning, innovation, and customer-centricity. By effectively aligning these components, organizations can differentiate themselves from competitors and create value for their target market. Next, the challenges in attaining and sustaining competitive advantage are explored. These challenges encompass changing market dynamics, evolving customer expectations, technological advancements, competitive



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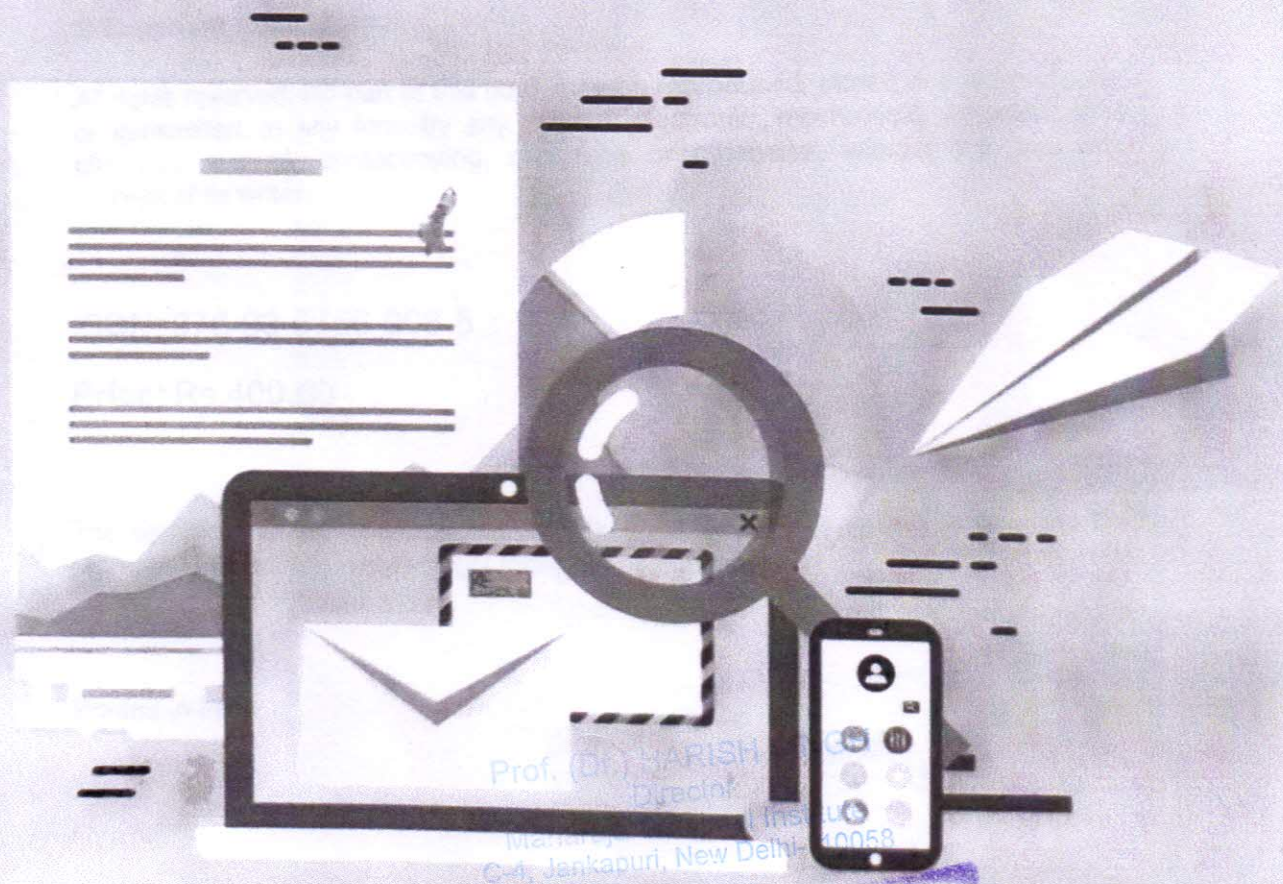


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## Research and Applications Towards Mathematics and Computer Science Vol. 2

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### Role of Artificial Intelligence and Machine Learning for Enabling IoT-Enabled Healthcare Systems

Aanchal Tethan : Ankita Moharana : Govil Sankar Chintapalli : P. Arockia Mary : Snigdha Rani Behera

Research and Applications Towards Mathematics and Computer Science Vol. 2, 1 July 2023, Page 46-58

<https://doi.org/10.9734/aplmaths/v2i5880c>

Published: 2023-07-01

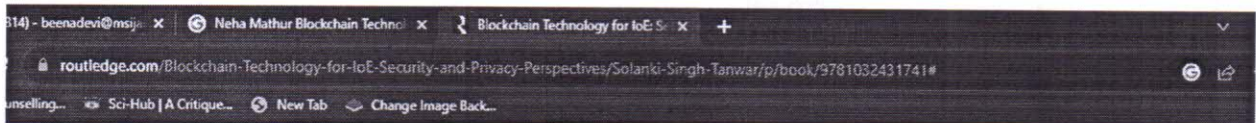
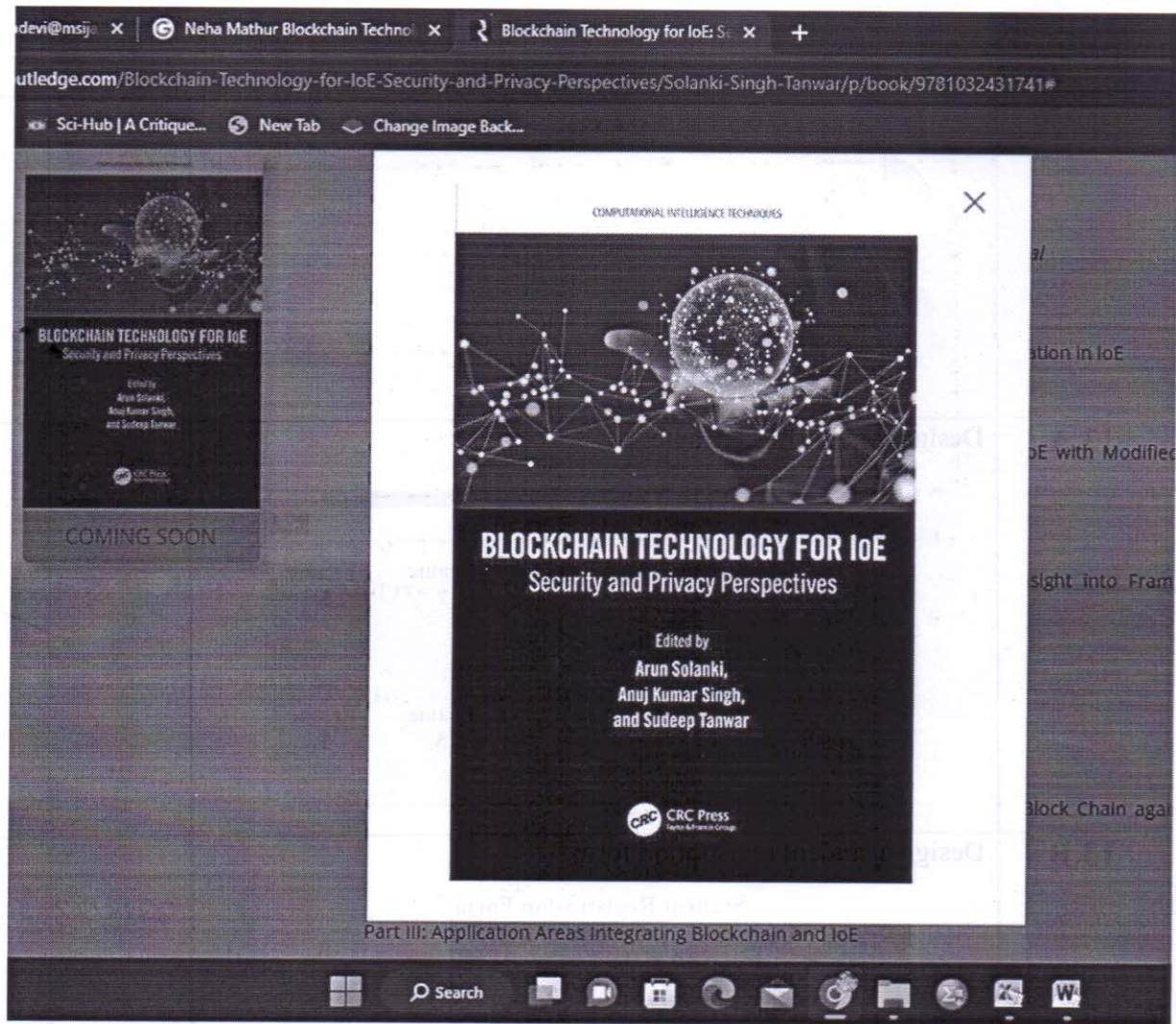
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#### Abstract

The Internet of Things (IoT) and artificial intelligence (AI) technologies are a natural match for future expansion. IoT uses the Internet to link everything in the globe. IoT devices have limitless information in chips and sensors since there are many linked devices, which means there is a lot of data that can be used to empower individuals in all facets of their life. The significant amount of data created by IoT devices is too much for even humans and computer algorithms to analyse and analyse. Algorithms for machine learning and artificial intelligence so aid in controlling them. The functional answer in controlling the numerous linked IoT components is provided by AI. Learning capabilities and limitless data processing that are produced by IoT devices are the crucial concern. The Businesses are employing machine learning (ML), a potent branch of artificial intelligence (AI), to solve this problem. The smart systems give an accurate forecast for applying ML to IoT data. IoT AI applications help businesses reduce unscheduled downtime, create new services and products, run more efficiently, and manage risk better. In healthcare, smart homes, autonomous cars, agriculture, and marketing, this combination is mostly employed. This survey study addresses healthcare applications based on artificial intelligence (AI) and the Internet of Things (IoT) in these numerous applications. Additionally, it presents a review of several IoT AI algorithms for early illness prediction in the medical field.

**Keywords:** IoT; healthcare system; data analytics; security; real time data and active device





Milind Udbhav, Meenu Vijarania, Swati Gupta, Akshat Agarwal, and Yash Chawla

Chapter 2. Security Requirements, Issues, and Challenges in IoT

Ravi Verma, Gaurav Soni, Sandeep Sahu, and Kamlesh Chandravanshi

Chapter 3. IoT and Blockchain Convergence for Enhanced Security

Rahul Samanta, Arindam Biswas, Atul Bandyopadhyay, and Gurudas Mandal

Part II: Blockchain-Based Security Mechanisms for IoT

Chapter 4. Security Model and Access Control Mechanisms for Attack Mitigation in IoT

**Neha Mathur** and Shweta Sinha

Chapter 5. Enhancement of Security of Messages in Blockchain-Based IoT with Modified Proof-of-Authentication (MPoAh)

Narendra Kumar Dewangan and Preeti Chandra

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मैं जी भर लिया, मैं मन से मरुं, लौट कर आऊंगा कूच से क्यों डरूँ।

# अटल रत्न

(प्रशस्ति पत्र)

22 दिसम्बर, 2022

राजर्षि, राजनीति के शिखर पुरुष,  
भारत रत्न श्री अटल बिहारी वाजपेयी

जी की पण्य स्मृति में

## डॉ. प्रीति प्रल्लिक

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मैं उल्लेखनीय योगदान के लिए 'अटल रत्न' से अलंकृत  
करते हुए हम आपकी ओजस्वी, तेजस्वी, यशस्वी प्रतिभा  
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Dr. Virendra Singh

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(संयोजक)

Neelam Singh

श्रीमती नीलू सिन्हा

संस्थापिका

प्रखर गंज

Dr. Gurmit Singh

डॉ. गुरमीत सिंह सूरा

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(प्रशस्ति पत्र)

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भारत रत्न श्री अटल बिहारी वाजपेयी

जी की पुण्य स्मृति में

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को

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में उल्लेखनीय योगदान के लिए 'अटल राज' से अलंकृत  
करते हुए हम आपकी ओजस्वी, तेजस्वी, यशस्वी प्रतिभा  
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Director, MSI

Er. Kaptan Singh  
President, SMES

This certificate is awarded during the Annual Day 2023, held on April 15, 2023

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डॉ. हरीश जी (शिक्षा एवं समाजसेवा)

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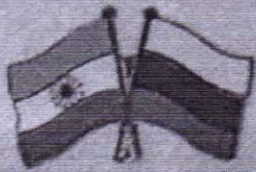
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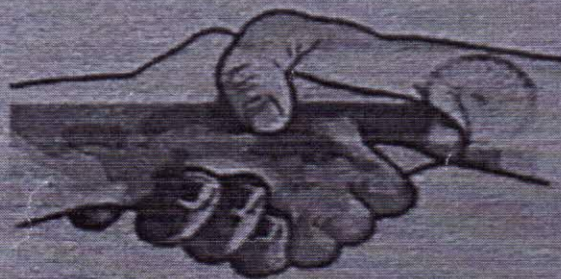
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# 31st Haryana State Masters Athletic Championship

Regd. No. 02691



on 24th and 25th December, 2022 at Tau Devilal Stadium, Gurugram

Organised by :

District Gurugram Master's Welfare Association

Under the aegis of

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Masters Athletic Federation of India, Haryana

Affiliated to :



Certified that Sh./Smt. DR. RAJESH GUL Age Group 50+ of Distt. GURUGRAM has participated in

31st Haryana State Masters Athletic Championship held on 24th to 25th December, 2022 at Tau Devilal Stadium, Gurugram & secured the

following position :-

Event

Position

Performance, Time & Distance

5000m

Second

36.54

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Director  
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Rajender Beniwal  
Working President, MAFI, Haryana

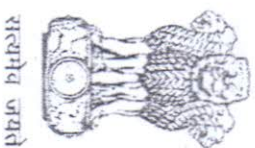
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CHAIRMAN

23.03.2023

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RANJEET SINGH

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# 31st Haryana State Masters Athletic Championship

Regd. No. 02691



on 24th and 25th December, 2022 at Tau Devilal Stadium, Gurugram

Organised by :

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Under the aegis of

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C-4, Jankapuri, New Delhi-110058

Director  
Maharaja Surajmal Institute  
C-4, Jankapuri, New Delhi-110058

Event

Position

Performance, Time & Distance

5000m

SECOND

36.54

Rajender Beniwal

Working President, MAFI, Haryana

Charanjit Singh

General Secretary, MAFI, Haryana

Raghubir Singh Beniwal

Treasurer, MAFI, Haryana

P. C. Dahiya

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Co-authored by:

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Ms. Ananya Arora, Guru Gobind Singh Indraprastha University

at 14th National Conference on Contemporary Issues in Business,  
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for her praiseworthy contribution

in

**Holistic Development & Growth of Students**

CONDUCTED CAREER TALKS, ORGANIZED WORKSHOPS, AUTHORED BOOKS & MANUSCRIPTS

Dated this

8th Day of January 2023

(Dr.) HARISH SINGH  
Director  
Maharaja Surajmal Institute  
G-4 Janakpuri, New Delhi-110058



Ref No.: TWU/23/IN/801R

*Baucher*

*Arch-Bishop*

Arch-Bishop (Prof.) Denis L.C. Josephson.  
Chancellor, Trinity World Educational Province



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awarded to

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Ph.D

Assistant Professor

Department of Bcom(Hons)

Maharaja Surajmal Institute

C-1/174, IIIrd Floor, Janakpuri, New Delhi

*in recognition of valuable contribution to the academic  
community and the students*

*Nanjesh Bennur*  
Nanjesh Bennur  
Chairman, InSc

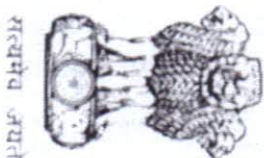
Director  
Maharaja Surajmal Institute  
C-4, Janakpuri, New Delhi-110058

Prof. (Dr.) HARISH SINGH





(समिति के सदस्य)



# NETAJI SUBHASH CHANDRA BOSE MEMORIAL AWARD *Certificate of Excellence*

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This Certificate of Excellence is awarded to Dr. Pooja Singh ji  
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Delhi on 23rd of January, 2023 at Constitution Club of India, Rafi Marg, New Delhi  
to Celebrate Netaji Subhash Chandra Bose Birth Anniversary on the occasion of  
Parakram Diwas.

JAGDISH YADAV  
CHAIRMAN

7.3  
Azadi Ka  
Amrit Mahotsav

MAKE  
INDIA  
NO.1

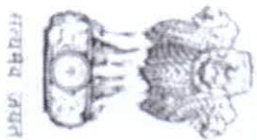
Director  
Maharaja Surajmal Institute  
New Delhi-110058  
4, Janakpuri.

RANJEET SINGH  
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16



77  
Azadi Ka  
Amrit Mahotsav



# CERTIFICATE

## COMMISSION FOR OTHER BACKWARD CLASSES

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Delhi on 23rd of March, 2023 at Martyr's Day (23rd March) At -Vikas Minar, I.P. Estate,  
New Delhi-110002

JAGDISH YADAV  
CHAIRMAN

23.03.2023

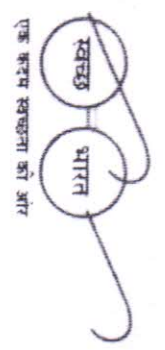
RANJEET SINGH  
SECRETARY

Director  
Maharaja Surajmal Institute  
New Delhi-110052

*Dr. Pooja Singh*

Prof. (Dr.) JAGDISH SINGH  
Director





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# सामाजिक समरसता एवं न्याय सप्ताह के उपलक्ष्य पर भारत रत्न डॉ० भीमराव अम्बेडकर स्मृति सम्मान

तिथि:- 13/04/2023 स्थान:- टैक्निया सभागार, मधुबन चौक, नई दिल्ली

शिक्षा, संगीत, खेल, पत्रकारिता, समाजसेवा, राजनीति, विधि एवं न्याय, लोक प्रशासन आदि के माध्यम से डॉ० भीमराव अम्बेडकर जी के संदेशों को जन-जन तक पहुंचाने में उल्लेखनीय योगदान देने के लिए

डॉ० शीति अलिक (अटाराना सूरजनक्षी)

को भारत रत्न डॉ० भीमराव अम्बेडकर स्मृति सम्मान से अलंकृत करते हुए आपकी ओजस्वी, तेजस्वी, यशस्वी प्रतिभा का अभिनंदन करते हैं।

अरुण शर्मा

कर्म सिंह "कर्म" (अध्यक्ष) डॉ० भरत झा (संयोजक)

आदित्य नाथ झा मेमोरियल ट्रस्ट



Director  
Maharaja Surajmal Institute  
Jalgaon New D

Director

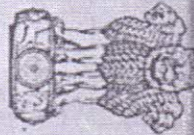
Director  
Maharaja Surajmal Institute  
C-4, Janakpuri, New Delhi-110058



(सम्राट् प्रेरणा)



सम्राट् प्रेरणा



# NETAJI SUBHASH CHANDRA BOSE MEMORIAL AWARD

## *Certificate of Excellence*

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(GOVT. OF NATIONAL CAPITAL TERRITORY OF DELHI)

5th FLOOR, VIKAS MINAR, I.P. ESTATE, NEW DELHI-110002

This Certificate of Excellence is awarded to DR. SEEMA SHOKEENfrom Maharaja Surajmal Institute by Commission for Other Backward Classes.

Delhi on 23rd of January, 2023 at Constitution Club of India, Rafi Marg, New Delhi  
to Celebrate Netaji Subhash Chandra Bose Birth Anniversary on the occasion of  
Parakram Diwas.

JAGDISH YADAV  
CHAIRMAN

75  
Azadi ka  
Amrit Mahotsav

MAKE  
INDIA  
NO.1

RANJEET SINGH  
SECRETARY

Director  
Maharaja Surajmal Institute  
C-4, Janakpuri, New Delhi-110005



  
Azadi Ka  
Amrit Mahotsav



# CERTIFICATE

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23.03.2023

Director  
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RANJEET SINGH  
SECRETARY

Prof. (Dr.) HARISH SINGH  
Director  
Maharaja Surajmal Institute  
C-4, Janakpuri, New Delhi-110058

