# Nobel Prize Winners - 2023

Pierre Agostini
Nobel Prize in Physics
For experimental methods that generate attosecond pulses of light for the study of electron dynamics in matter

Jon Fosse
Nobel Prize in Literature
For his innovative plays and prose which give voice to the unsayable

Claudia Goldin
Nobel Prize in Economic Sciences
For improvements to auction theory and inventions of new auction formats.
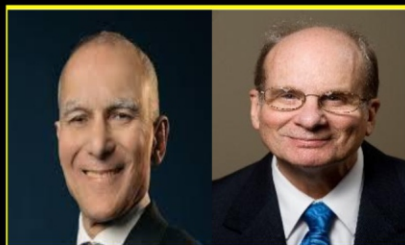
Moungi G. Bawendi and Louis E. Brus
Nobel Prize in Chemistry
For the discovery and synthesis of quantum dots

Drew Weissman
Nobel Prize in Medicine or Physiology
For their discoveries concerning nucleoside base modifications that enabled the development of effective mRNA vaccines against COVID-19
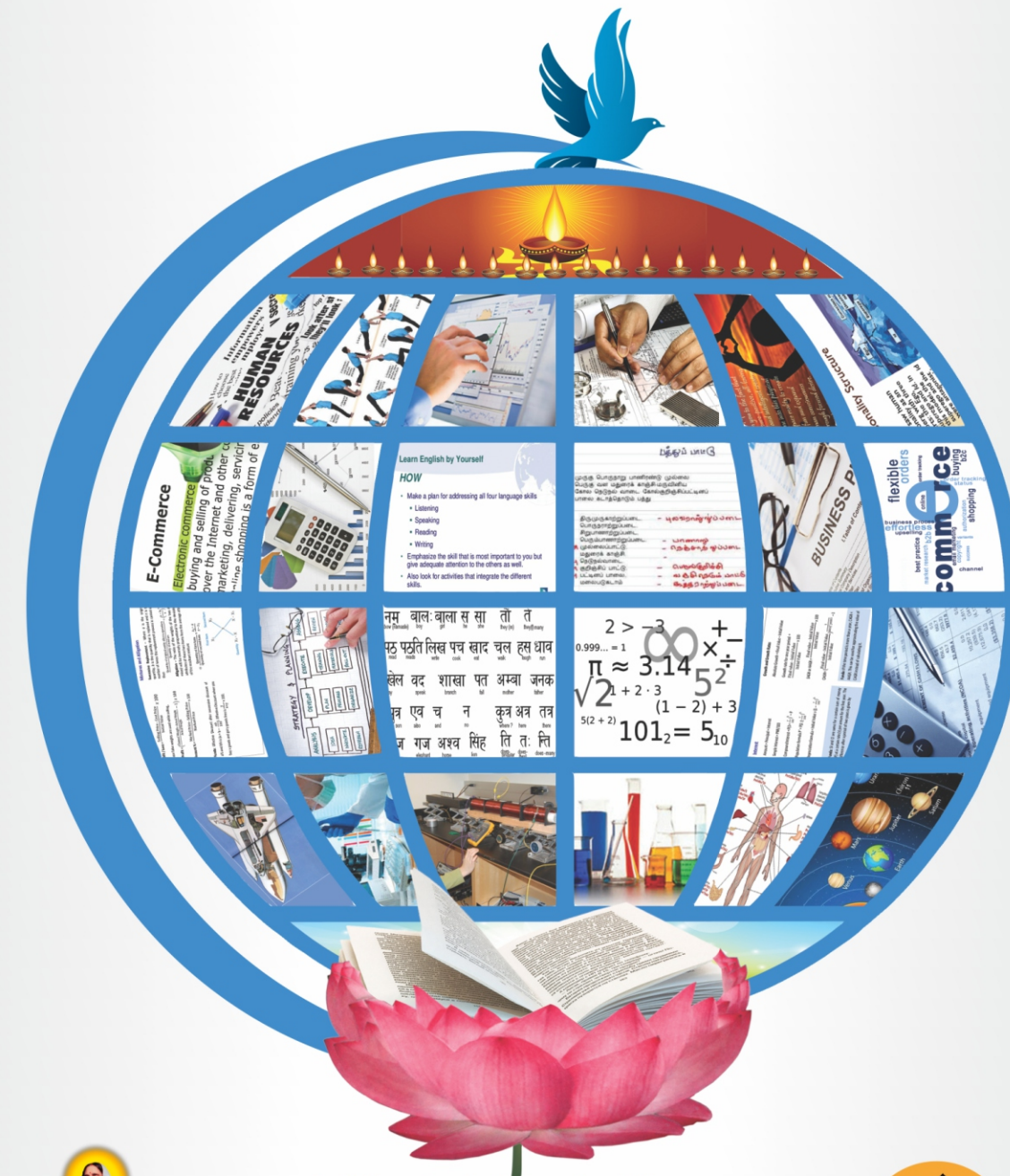
Narges Mohammadi
Nobel Prize in Peace
For her fight against the oppression of women in Iran and her fight to promote human rights and freedom for all

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(2) Chakraborty A, Kar S, Nath D N and Guchhait N 2007 *J. Chem. Sci.* **119** 195

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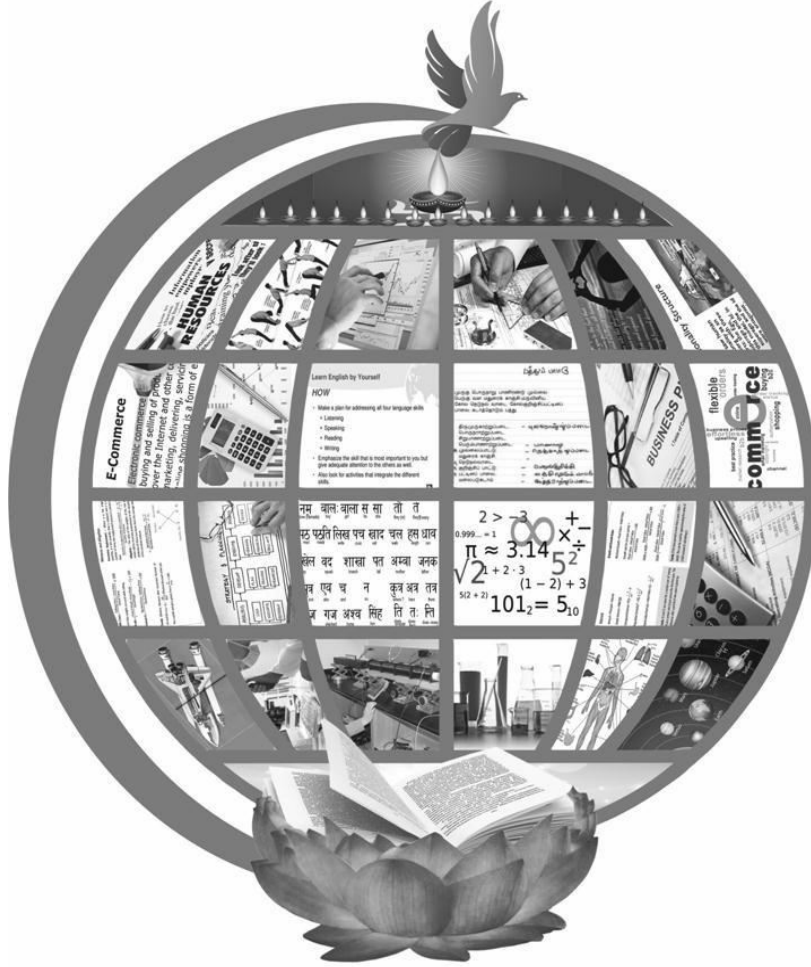If included, should be labeled A, B,…. With equations as A1, A2, B, B2, etc.

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PREDICTION OF HEART DISEASES USING RANDOM FOREST ALGORITHM

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INTRODUCTION

Today even the young people aged 20-30 years are getting affected by heart diseases. About 25% deaths are in the age group of 25-69 year because of heart disease. Recently in 2021, Rahatara Ferdousi predicted the heart disease only with the given data using knn algorithm. The main motivation of doing this research is to present a heart disease prediction model for the occurrence of heart disease. This work is justified by performing a comparative study and analysis using classification algorithms named Random Forest Algorithm.

EXISTING MODEL

Ambika and Latha (2015) proposed Non- Communicable Disease. Here the author promotes the healthy life style through the early diagnosis of NCD's. The author gets intensity results in comparing with other techniques. Ritu et al. (2017) presented a sequential feature selection method for identifying mortality events in patients with heart disease during treatment to find the most critical features. Numerous machine learning methods are utilized, including LDA, KNN, RF, SVM, DT, and GBC. In addition, the confusion matrix, receiver operating characteristic curve, precision, recall rate, and F1-score are also generated to validate the SFS algorithm's results. Experimental findings indicated that the sequential feature selection technique achieves an accuracy of 86.67% for the random forest classifier.

OBJECTIVES

- To develop the application for the prediction of the heart diseases.
- To determine whether a patient should be diagnosed with heart disease.
- To determine the performance of the model for the given input data with the help of given training data.
- To predict the heart disease in real time, the input data is collected directly from the patients.

METHODOLOGY

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┌─────────────────────────┐
│    Read the input data   │
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┌─────────────────────────┐
│      Pre-processing      │
└─────────────────────────┘
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│ Random Forest Algorithm  │◄───────│   Load the training data │
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│ Random Forest Algorithm  │◄───────│   Load the training data │
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│      Classified data     │
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│   Prediction of disease  │
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│    Accuracy assessment   │
└─────────────────────────┘
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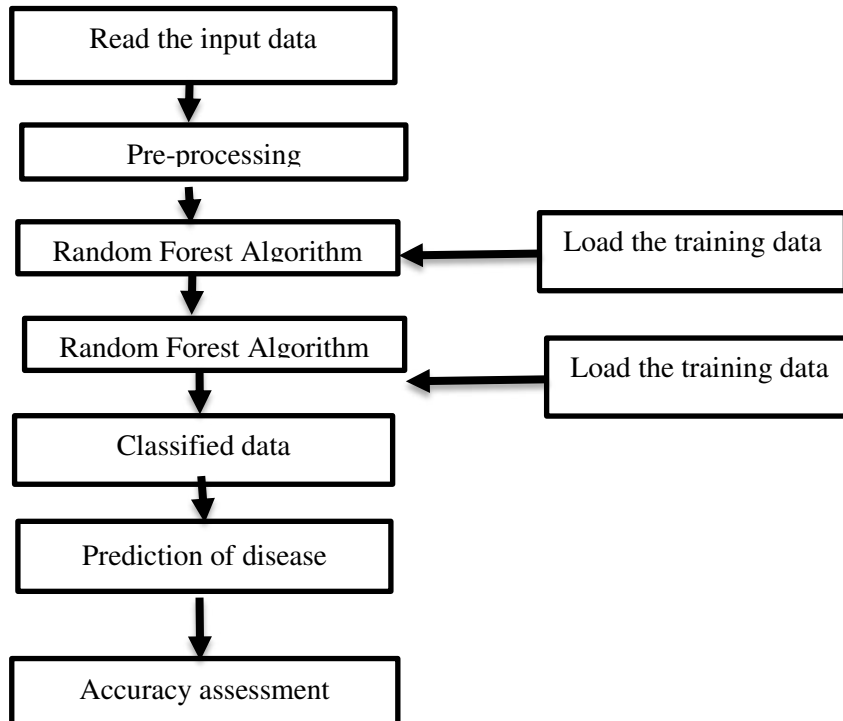
DATA COLLECTION

The input data is collected from the patients directly for a real time prediction of heart disease. Then the input data is pre-processed with the training data which is collected from the Kaggle website.

TRAINING DATA

Training data is an extremely large dataset that is used to teach a Machine learning model. Training data is used to predict the result of the model to extract features that are relevant to specific goals. Support Vector machine is the supervised classification algorithm so it needs the training data to execute the model. For this study, there are 768 patients records collected as training data.

PRE-PROCESSING

As a part of this work, processing was performed on the raw heart diseases data to scale the features using Random Forest Algorithm. Data pre-processing is a process of preparing the raw data and making it suitable for a machine learning model. It is the first and crucial step while creating a machine learning model. When creating a machine learning project, it is not always a case that we come across the clean and formatted data. And while doing any operation with data, it is mandatory to clean it and put in a formatted way. So for this, we use data pre-processing task. A real-world data generally contains noises, missing values, and maybe in an unusable format which cannot be directly used for machine learning models. Data pre-processing is a required task for cleaning the

data and making it suitable for a machine learning model which also increases the accuracy and efficiency of a machine learning model.

RANDOM FOREST ALGORITHM CLASSIFICATION

Random Forest is a popular machine learning algorithm that belongs to the supervised learning technique. It can be used for both Classification and Regression problems in ML. It is based on the concept of ensemble learning, which is a process of combining multiple classifiers to solve a complex problem and to improve the performance of the model. As the name suggests, "Random Forest is a classifier that contains a number of decision trees on various subsets of the given dataset and takes the average to improve the predictive accuracy of that dataset." Instead of relying on one decision tree, the random forest takes the prediction from each tree and based on the majority votes of predictions, and it predicts the final output. The greater number of trees in the forest leads to higher accuracy and prevents the problem of over fitting. It is the most used supervised machine learning algorithm for classification and regression. It uses ensemble learning method in which predictions are based on the combined results of various individual models. Finally voting is used to find the class of the predicted value. It works by two techniques- bagging and boosting. Bagging is the process in which the entire dataset is divided into n different random subsets and each individual decision tree is created on each random subset. The trees predict on different columns and data rows and then these trees are trained to obtain the vote. Boosting is the training of individual models in a sequential way. Each individual model learns from mistakes made by previous model.

RESULTS AND DISCUSSION

The results obtained after applying Random Forest Algorithm in this study gives high accuracy. Each classification algorithm was implemented into two cases. First, they used all of the 14 attributes of the dataset and then they used the selected 10 attributes from the dataset. In order to predict the probability of patients having heart disease in real time random forest classifier plays an important role. It helps in reducing costs by providing effective treatments and to find the parameters value in prediction like accuracy, time and energy consumption. The results indicate that these classification algorithms can be used in diagnosing of many diseases. Thus, treatments of many diseases can be started earlier, and human health can be better protected. The training dataset has been collected from the Kaggle website and for real time prediction the data's are collected from the patients directly. While comparing with the other algorithm the Random Forest Algorithm gives the high accuracy in the prediction of heart disease in real time.

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POWER PLAY OF CLASSES: CULTURAL HEGEMONY IN CHARLES DICKENS A TALE OF TWO CITIES

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ABSTRACT

This research explores the utilization of cultural hegemony in Charles Dickens's *A Tale of Two Cities* (1859), examining it through the lens of Italian critic Antonio Gramsci (1891-1937). Gramsci elucidates the dominance of the ruling class over the ruled class, asserting that cultural hegemony involves the mastery of the middle class and governing groups over lower divisions. He contends that super leaders maintain cultural hegemony not through power and compulsion, but by influencing consent, language, intellectual individuals, and educational tools. In *A Tale of Two Cities*, Dickens portrays the impact on England and France, depicting the tyrannical events of the French Revolution, from its oppressive beginnings to the rebels' retaliation against sovereigns and the king. Dickens also explores aristocratic ideals, emphasizing the role of cultural hegemony in both France and England. Gramsci notes that the upper echelons, through indirect control of mass media, shape societal feelings and values, emphasizing that dominance often occurs through consent rather than compulsion. Ultimately, this study seeks to identify indicators of cultural hegemony and illustrate the tumultuous events of the French Revolution.

Keywords: Cultural hegemony, dominance, language, intellectual, social values.

Charles Dickens's *A Tale of Two Cities* is a literary masterpiece that intricately weaves a narrative around the power dynamics within society, unravelling the complexities of cultural hegemony. This paper delves into the exploration of these power plays, shedding light on how cultural hegemony shapes and influences the characters and events within the novel. At its core, cultural hegemony, as explained through the lens of Italian critic Antonio Gramsci, is the dominance of the ruling class over the ruled class. This study analyses how Dickens illustrates this hegemonic struggle, examining the mastery of the middle class and governing groups over the lower divisions.

The novel serves as a canvas upon which Dickens paints the portrait of societal structures, highlighting the pervasive influence of cultural hegemony in 19th-century England and France. In *A Tale of Two Cities*, Dickens is more focused on the problems England is dealing with than those in France. He's worried about what will happen in the future, not so much about what happened before. Dickens shows that the troubles in London are not as clear as the violent events in Paris. The book also points out the harsh happenings in London, but they're not as extreme as the revolutionary chaos in Paris.

At the beginning of the story, Dickens talks about how things are both dark and light in London and Paris. He explains that Dr. Alexandre Manette was wrongly kept in prison at the Bastille and left there to die. In 1775, Mr. Jarvis

Lorry from Tellson's Bank in London figures out that Dr. Manette, who went missing eighteen years ago, might still be alive. When they go to Paris, they find him at Defarge's house. Dr. Manette has aged a lot, lost his memory, and doesn't seem interested. Mr. Lorry and Lucie bring him back to London. Lucie, with love and care, helps her father recover.

Five years later, in 1780, a young Frenchman named Charles Darnay is accused of being a traitor and a spy. Sydney Carton, in the courtroom, points out the similarities between the prisoner and himself, leading to Darnay's acquittal. Over time, both Darnay and Carton fall in love with Lucie. Lucie marries Darnay, who rejects his family's wealth and lives in London under a different name, working as a teacher. Darnay's uncle, the Marquis St. Evremonde, is infamous for his cruelty.

The French Revolution begins, and Darnay returns to Paris to help his servant, Gabelle, but he gets arrested. Lucie, her daughter, Dr. Manette, and Mr. Lorry hurry to Paris to save Darnay. Madame Defarge, seeking revenge for her family, accuses Darnay, leading to his trial and death sentence. The story concludes with Sydney Carton sacrificing himself to save Darnay's life, fulfilling a promise to Lucie. Carton feels proud about his choice, believing he'll live on in the hearts of the Darnays forever.

The ruling class in *A Tale of Two Cities,* including Dr. Manette, who is profoundly affected by the violent actions of the Marquis and French aristocrats, has subjected certain characters to insult. Gramsci's insights are particularly relevant, as he emphasizes that cultural hegemony is not maintained solely through overt power and coercion but, rather, through subtler means such as consent, language, intellectual influence, and educational tools. The characters in *A Tale of Two Cities* become conduits through which these hegemonic forces are expressed and challenged.

Sydney Carton is under the domination of Stryver who is constantly about to despise him. Carton's nickname is jackal which insults him in the face of other, Stryver is called as a lion. Stryver sees himself as a lion and Carton as the jackal. Bloom describes Carton as, "he may be a jackal, but not by choice. He is a man of good abilities and good emotions, but incapable of his own help and his own happiness" (107). In short, he is not naturally a jackal; instead of the London and Paris mob, he is not nourished by vengeance and slaughter. Stryver works scarce and walks honorably in the sunlight, while Carton quickly traces scraps at night. Though certainly more intelligent than Stryver, Carton requires social beauties and the taste of victory, and will never match Stryver's achievement.

Gramsci expresses that the individuals voluntarily consent to a social system that makes them alienated and weakened. He also stressed that the role-plays a noteworthy part in saving this consent. At the same time, he was mistaken that a specific class of the middle class created hegemony. Gramsci's work can substitute the hegemony of a year with the hegemony of a dominant group, and, by discussing that the current hegemony is more cultivated, decentralized, and stronger than domination by a ruling group. This text file is issued because it keeps people cautious against the hegemonic systems in the present lawful system that prevent alternative classifications that might put up an intimate appropriate with collective obligations to liberalism, justice, health.

Most of the novel's characters are virtually below the political power of aristocrats who impose their culture and beliefs to the commoners in order to keep

their aristocracy. Stryver tries to dominate in the world. He is careless of sacrifice because he is very a selfish man. Carton interestingly makes himself a servant to Stryver. Dickens intricately weaves the ideals of the aristocracy into the fabric of the story, emphasizing the function of cultural hegemony in both nations. The upper echelons, as Gramsci notes, exert influence through indirect control over mass media, educating society about their feelings and values. The novel becomes a mirror reflecting the societal norms and ideals of the time.

In conclusion, "The Power Play of Classes: Cultural Hegemony in Charles Dickens's *A Tale of Two Cities*" unravels the layers of power dynamics within society, as depicted by Dickens. Through an exploration of Gramsci's theories, the paper sheds light on how consent, language, and education become powerful tools in the perpetuation and challenging of cultural hegemony. *A Tale of Two Cities* emerges not just as a historical novel but as a profound commentary on the enduring struggle for dominance and the resilience of the human spirit against hegemonic forces.

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IPL DATA ANALYSIS AND VISUALIZATION USING PYTHON

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INTRODUCTION

Analysis of structured data has seen tremendous success in the past. However, analysis of large scales unstructured data to perform predictions remains a challenging area. The Indian Premier League (IPL) is a Twenty20 cricket league tournament held in India contested during April and May of every year where top players from all over the world take part. The IPL is the most-attended cricket league in the world and ranks sixth among all sports leagues. The idea is to analyse the IPL data hosted by Kaggle to come up with something interesting and useful which I would recommend to the Royal Challengers Banglore Team Management. I have used various graphs and plots for doing this analysis using the Fascinating ggplot2 package. The project utilizes the IPL datasets that allows analyst to incorporate functions that are used by IPL application to fetch and view information. The text file output generated from the console application is the loaded from HDFS (Hadoop Distributed File System) file into HIVE database. Hive uses a CSV-like interface to query data stored in various databases and file systems that integrate with Hadoop. HDFS (Hadoop Distributed File System) is a primary Hadoop application and a user can directly interact with HDFS using various shell-like commands supported by Hadoop. This project uses CSV like queries that are later run on Big Data using HIVE to extract the meaningful output which can be used by the management for analysis.

EXISTING SYSTEM

- In an era of mass computation, we may have sufficient human resources and required Equipment. Still, we are lacking somewhere, we need more accuracy in our work and a faster pace in work is on demand by IT industry.
- Artificial intelligence is one of the solutions of this continuously growing problem. We propose to create some smart machines which are capable of learning the work to be done by Human worker, and do it itself.
- An idea, in which Human creativity and machine capability will combine and create a powerful system, will come into existence which will learn like a normal human being but at a faster pace.
- In addition, a demonstration of advanced technology based on Artificial Intelligence and machine learning.

PROPOSED SYSTEM

BCCI re-introduces the IPL 2011 playing format after confirming that IPL 2020 will be played with 10 teams in total. A total of 74 matches will be played including 4 playoff matches. As of before, the 8 teams will play 60 matches in total where each team will play 14 league matches each, they will face each team twice in the league match. Playing 14 league matches the teams will play a total of 7 matches in their home ground and others in an away ground (which may be the home ground of the opponent team). After introducing an additional 2 teams in the tournament having the home ground comfort seems to be a bit difficult.

DATABASE DESIGN

Player	Base Price	TYPE	COST IN (CR.)	Cost IN $ (000)	2021 Squad	Team
Rashid Khan	Draft Pick	Bowler	15	1950	SRH	Gujarat Titans
Hardik Pandya	Draft Pick	All-Rounder	15	1950	MI	Gujarat Titans
Lockie Ferguson	2 Cr	Bowler	10	1300	KKR	Gujarat Titans
Rahul Tewatia	40 Lakh	All- rounder	9	1175	RR	Gujarat Titans
Shubman Gill	Draft Pick	Batter	8	1040	KKR	Gujarat Titans

RESULTS AND DISCUSSION

This section discusses findings of our proposed model. The results are found by performing the calculations on individual players like batsman, bowler, all- rounder and fielder on different dataset.

Achieved results will help the team management to decide the best playing 11 to win the match. The Dataset used for analysis was collected from https://kaggle.com and has been scrapped from https://stats.espncricinfo.com, where data from 2008 to 2020 was available. Datasets used here are highest scores by a batsman, maximum runs scored in a particular venue, highest average score, against which bowler batsman strike rate is good and about the bowler the most dismissal kind of wickets, the bowling economy and also the Toss factor for every match played in IPL.
TABLE I: Match Attributes TABLE II: Individual player's performance

FUTURE ENHANCEMENT

As discussed Comparing to Scorers, it seems like the agents are unable to learn how to create special candies, an attribute that is a vital part of the player detail and frequently used by human. It is possible for the proximal policy optimization algorithm, using a convolutional neural network as policy, to learn how to create special candies when using a reward function specifically focused on the creation of special player. An interesting future work would be to conduct a deeper reward function analysis. To analyze if it is possible for a sparse reward to learn how to create special player given more training time steps, or if an intermediate, short- term, special candy focused reward function is needed. This

research was, due to computational and limitations, only performed on different levels in the of IPL. In the third and fourth experiment, models were trained on multiple levels to analyze if knowledge could be learnt and used across levels. Given the hypothesis that models trained on even more levels get a deeper understanding of the game is dynamics, an extended research focusing on generalization across levels would be of interest.

CONCLUSION

Selection of the best team for a cricket match plays a significant role for the team's victory. The main goal of this paper is to analyse the IPL cricket data and predict the players' performance. Here, three classification algorithms are used and compared to find the best accurate algorithm. The implementation tools used are Anaconda navigator and Jupiter. Random Forest is observed to be the best accurate classifier with 89.15% to predict the best player performance. This knowledge will be used in future to predict the winning teams for the next series IPL matches. Hence using this prediction, the best team can be formed. This project opens scope for future work in the field of cricket and predicting other important things like best team of players, best venue, best city, best fielding decision to win a match.

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A STUDY ON AWARENESS OF STARTUP VILLAGE ENTREPRENEURSHIP PROGRAMME OF RURAL ENTREPRENEURS IN TIRUNELVELI DISTRICT

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INTRODUCTION

The Government of India's Start-up Village Entrepreneurship Programme (SVEP) has been initiated with the purpose of assisting entrepreneurs to establish their business enterprises in rural India. The scheme supports existing enterprises as well as new enterprises with their unit establishment at the village level. Besides helping the rural entrepreneurs to access finance, a cadre of Community Resource Persons- Enterprise Promotion (CRP-EP) is also created to provide business support services to rural enterprises. It not only aids in the setting up of enterprises, but also ensures that sufficient handholding support is offered to these enterprises, thereby ensuring their longevity in the market.

Rural enterprises are business entities, which by the means of effective use of local resources, promote revenue generation and act as agents of social change at the grassroots level. These entities not only play a pivotal role in the holistic development of the rural economy but also contribute to the economic growth of our nation. The establishment of a large number of profitable enterprises in a region can bring in government investment, attract private participation, generate local employment, bring partnerships and secure funding apart from channelizing idle savings into business entities.

According to the Government of India, "Any industry located in a rural area, village or town with a population of 20,000 or below and an investment of INR three cores in plant and machinery is classified as a village industry." It is a revised definition of the previous one provided by Khadi & Village Industries Commission. As of March 31, 2022, India has more than 63 million MSMEs, out of which about 94 per cent are micro-enterprises. According to official data released on April 30, 2022, the country's 6.33 crore MSMEs employ about 12 crore workers. According to World Bank Data 2019, about 65 per cent of the Indian population, most of them (about 58 per cent, as per 2018-19 PLFS data) earn their livelihood from agriculture and allied sectors.

The recent reports from the Ministry of Rural Development show that over 41,623 enterprises came up during 2021-2022 under this scheme when India struggled with the COVID-19 pandemic. Currently, this scheme is active in 15 states. Among this, Tamilnadu is one of the notable state, with 26,870 enterprises set up during the period from 2018-19 to October 2022.

OBJECTIVES OF THE STUDY

1. To examine the awareness of SVEP among rural entrepreneurs in Tirunelveli.
2. To study the challenges faced by rural entrepreneurs.
3. To study the objectives and impact of SVEP.

RESEARCH DESIGN AND METHODOLOGY

This research is based on primary and secondary data. The Primary data has collected from by person and through online Google forms. Secondary data have been collected from the websites of Ministry of Rural Development and SVEP. The study is in descriptive in nature. The sample size of the study is 60 rural entrepreneurs in Tirunelveli. The sample was selected in convenient method.

CHALLENGES FACED BY RURAL ENTREPRENEURS

While India has marginally improved its ranking in terms of the ease of doing business index, the challenges and concerns faced by rural entrepreneurs in running and scaling their enterprises persist. The concerns range from the prevalent societal and gender-based biases to a lack of understanding of business, entrepreneurship and access to the requisite skills essential to run such enterprises. The entrepreneurs who have the courage to work on a business idea often face challenges in understanding the needs of the market, the viability of their product and its suitability for manufacture.

Furthermore, those enterprises who manage to establish themselves in the market and generate some early-stage revenue often face difficulties. These range from inconsistent market linkages, severe competition from urban markets, a lack of infrastructural facilities and logistical challenges, inadequate understanding of the government support mechanisms available for them to unskilled labour for the effective delivery of product/service. Other challenges include the availability of working capital, the adoption to technology and the inability to diversify their products range.

The Government of Tamil Nadu launched its Start-up Policy with a mission "to create, support and nurture a vibrant start-up ecosystem in Tamil Nadu resulting in innovation and entrepreneurship driven employment and economic growth, facilitating the creation of at least 5000 start-up including 10 global high growth start-ups by 2023". The vision of the State's start-up policy launched in 2018 is "to make Tamil Nadu a Global Innovation Hub and the most preferred destination for start-up by 2023"(refer to Figure A for achievements of Tamil Nadu start-up ecosystem). In addition to sharing its start-up policy, the Tamil Nadu Government has also defined the "Core policy objectives" which include:

- Encourage, facilitate and support the emergence of at least 5000 technology start-ups in the State
- Extend dedicated support to at least 10 global high growth start-ups developing innovative technology solutions for high social impact in sectors like sanitation, food, clean energy, healthcare, and education
- Establish support infrastructure and strengthen the existing mechanism in the thrust areas: Transportation & Logistics, Electrical & Electronics, Health Care and Biotech, Agriculture, Renewable energy, Climate change, Fintech, Textile, Information Technology (IT), Internet of Things (IoT), Artificial Intelligence (AI), Machine Learning (ML) and Software-as-a-Service (SaaS)
- Network (public and private) stakeholders
- Collaborate with educational institutions to promote entrepreneurship among the youth Maximise industry engagement
- Provide adequate incentives and resources to start-ups, facilitators, mentors and investors to promote start-up culture

- Reduce the existing regulatory and tax burden on start-ups in the field of labour, pollution and building norms and base these on self-certification Nurture budding start-ups defined as START STEPs to graduate into start-ups
- Partner with reputed investors across India and the globe to invest in Tamil Nadu start-ups Brand start-up hubs in geographically distinct locations – Chennai, Coimbatore, Salem-Erode, Madurai, Trichy-Thanjavur, and Tirunelveli.

OBJECTIVES OF START-UP VILLAGE ENTREPRENEURSHIP PROGRAMME (SVEP):

As 60% of India's population lives in rural areas, the SVEP will stimulate economic growth and promote rural entrepreneurship, creating immense job opportunities and helping support the rural economy. Given below are the primary objectives under the SVEP:

TO ENABLE RURAL INDIANS TO SET UP BUSINESSES:

The SVEP aims to promote village entrepreneurship using integrated ICT approaches and tools. It plans to use these tools for training and building employment capacity. The programme intends to offer consulting services to rural enterprises and promote businesses that focus on manufacturing, services and trading. It also aims to encourage businesses to use a mix of traditional and new talent to help them sustain in an increasingly competitive environment. The rural enterprises will be encouraged to satisfy existing as well as new rural consumption, driven by government goals such as the RURBAN programme and Swachh Bharat Abhiyan.

TO DEVELOP LOCAL RESOURCES:

Rural entrepreneurs will be assisted by building local resources. The programme's main objective is to develop local resources by training a pool of village-level community cadre and by ramping up the capacity of the National Rural Livelihood Mission (NRLM) and Self-Help Groups (SHGs).

TO PROVIDE EASY ACCESS TO CAPITAL:

Rural entrepreneurs will be provided help with obtaining financing for their business from the NRLM, SHGs, federations, and banking systems, including the proposed MUDRA bank.

TO HANDHOLD RURAL ENTREPRENEURS:

Rural enterprises will be helped by visits from the Community Resource Persons-Enterprise Promotion (CRP-EP) for the first six months of their operation. Rural entrepreneurs will also have access to a panel of experts who will provide guidance and tips for the enterprise to flourish.

ECONOMIC IMPACT OF START-UP VILLAGE ENTREPRENEURSHIP PROGRAMME(SVEP):

The SVEP has taken an all-inclusive approach, focusing on marginalised communities, women and those with low educational status. The programme has created a positive economic impact for many entrepreneurs, providing bank credits worth Rs. 1,530 billion (US$ 20.15 billion) to over 104,000 enterprises. According to the SVEP, 99% of the enterprises were profitable, with only 1%

breaking even and incurring zero losses. About 57% of families' total household income came from SVEP-supported enterprises.

The overall objective of SVEP is to implement the Government's efforts to stimulate economic growth and reduce poverty and unemployment in the villages by helping start and support rural enterprises.

The key objectives of SVEP are:

- To enable rural poor to set up their enterprises, in its proof of concept phase, by developing a sustainable model for Village Entrepreneurship promotion through integrated ICT techniques and tools for training and capacity building, enterprise advisory services and to provide loans from banks/SHG & federations. These enterprises may be individual or group enterprises and should cover manufacturing, services and trading. These enterprises should cover traditional skills as well as new skills. They should also cover existing consumption and production of rural areas and should also cover new consumption and production of the rural areas, including the new consumption driven by government's priorities like RURBAN mission, Swachh Bharat Abhiyan, etc.

- Develop local resources by training a pool of village level community cadre (CRP EP) and build the capacity of the NRLM and SHG federations to monitor and direct the work of the CRP-EPs.

- Help the rural entrepreneurs to access finance for starting their enterprises from the NRLM SHG and federations, the banking systems including the proposed MUDRA bank.

- Handhold the rural entrepreneurs/ enterprises in the initial six months of start-up, with visits from the CRP-EP's supported by guidance from an advisory panel of experts for the relevant enterprise.
  The SVEP would also work with the input and output supply chains for farm produce, artisanal products and other goods & services to help increase rural incomes.

Implementation of Scheme

- Create a Block Resource Centre – Enterprise Promotion (BRC-EP); The BRC should act as a nodal centre to implement SVEP. Block Level Federation (BLF) to come up under NRLM could be one of institutional platforms for BRC.

- Cluster Level Federation (CLF) /VOs shall hold the entity till BLF comes into existence. BRC should follow a self-sustaining revenue model.

- BRC to be assisted by CRP-EP and the Bank Coordination System (Bank Mitra). BRC to provide resource and reference material including videos, manuals etc.

- Help enterprises get bank finance using tablet based software for making the business feasibility plan, doing credit appraisal and tracking business performance.

- Use the Community Investment Fund (CIF) to provide seed capital for starting the business till it reaches a size where bank finance is needed.
- SVEP implementation at the block level to consist of the following sets of processes:
- New Enterprise Development
- Support for existing enterprises
- Block level activities
- Other project activities

DATA ANALYSIS AND INTERPRETATION

TABLE-I The demographic Profile and Awareness level of the Respondents

S.No	Variable	Responses	No.of Respondents	Percentage
1	Age	Above 20	18	30.0
		21 to 30	14	23.3
		31 to 40	28	46.7
		Total	**60**	**100**
2	Education	Primary School	5	8.3
		Secondary School	19	31.7
		Degree	36	60.0
		Total	**60**	**100**
3	Residential status	Rural	24	40
		Urban	15	25
		Semi-Urban	21	35
		Total	**60**	**100**
5	Awareness level of SVEP scheme	Well Known	15	25
		Not Aware	42	70
		Already a beneficiary	3	5
		Total	**60**	**100**

RESULTS AND DISCUSSION

The study has some suggestions for ensuring the sustainability of rural enterprises established under this scheme such as ensuring bank linkage support when they are in need to additional finance in order to reduce the financial burden arising from using informal source of finance at higher interest rates, within the SVEP guidelines itself there is a scope for giving loan twice to a credible entrepreneur so ensure the same, ensure marketing support to entrepreneurs doing traditional business such as handicraft works etc.

- The State Government may hold quarterly sensitization workshops for various Government departments and officials to encourage them to interact with

startups to understand their concerns. More than 10 Sensitization workshops for State Government officials conducted More than 200 Government officials sensitised on the startup landscape in the State More than 10 State-supported Incubators trained through capacity development workshops Tamil Nadu | Leader 27

- The State may train State-supported incubators through capacity development workshops by collaborating with incubators from other states to explore mutual learning opportunities. This training can be conducted by industry experts to mitigate operational and functional impediments.
- The State could develop the capacity of incubators through various training programs. These incubator training may put forth evolutionary incubation techniques to address changing times leading to changing dynamics for start-ups to conduct business. The State may cover topics related to Intellectual Property Rights, Business Incubation Model, Designing programs for start-ups, setting up virtual incubation services, Incubator management training, etc.
- The State may conduct monthly virtual programs spread across various districts to sensitize potential investors on investment in start-ups. These programs could be knowledge sharing sessions and one-onone interactions to facilitate investor connections. With the pandemic affecting investment spirit, these programs may be designed to channel investment from within the community to support local innovators sustainably using local resources.

CONCLUSION

Rural entrepreneurship plays a crucial role in addressing the socio-economic problems of rural poverty, unemployment, inequality and low-economic growth. There have been lot of studies related to rural entrepreneurship in almost all the developing countries across the world. In a developing country like India, studying the impact of a particular government is of great concern. The study evaluated the Start-up Village Entrepreneurship Programme and it is revealed that this scheme has a significant impact on rural people especially weaker or underprivileged sections of society and helped them to improve their social and economic status to some extent. But most of entrepreneurs are not aware of this startup programme so, the government should organize the multiple awareness and training programmes for implementing this scheme widely.

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AGRICULTURAL WASTE MANAGEMENT AND ITS IMPACT ON AGRI-PRODUCTION

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ABSTRACT

India is predominantly an agriculture-based country where there is a huge load of agricultural wastes and by-products. The wastes and by products generated from agriculture are basically organic in nature containing almost all essential plant nutrients. This is enough scope for recycling of the wastes and incorporation of the agricultural by products into the crop filed for maintaining the biological cycle. The management of agricultural waste has become very important because the inappropriate disposal yields negative effects on the environment. The resource recovers from agricultural waste which converts waste into available resources and reduce the waste and new resource consumption. This review summarizes the researches of papers that is agricultural waste and waste chemical characterization, agricultural waste material, adsorption, waste energy, composting, waste biogas, agricultural waste management, and others. To provide practical information to maximize the benefits and minimize negative impacts of handling waste. The impacts of agricultural land use are far-reaching and extend to areas outside production. This paper provides an overview of the ecological status of agricultural systems across the India in the light of recent policy changes. The main danger to agro-ecosystems' ecology is the degradation of soil, water, and air, which lessens biological diversity in agricultural landscapes. This was attributed to agricultural policy targeted at the environment, improved environmental legislation, and new market opportunities. The impacts also extend to surrounding terrestrial and aquatic systems through water and aerial contamination and development of agricultural infrastructures.

KEY WORDS: Agricultural waste, problems, Biogas, Chemical characterization, Composting, Waste management, Aquatic ecology, Ecosystem services, climate change and Biodiversity.

INTRODUCTION

Agricultural wastes are defined as the residues from the growing and processing of raw agricultural production such a fruits, vegetables, meat, poultry, dairy products, and crops. They are the non-product outputs of production and processing of agricultural products that may contain material that can benefit man but whose economic values are less than the cost of collection, transportation, and processing for beneficial use.

Agricultural waste otherwise called agro-waste is comprised of animal waste (manure, animal carcasses), food processing waste (20% of maize is canned and 80 % is waste), crop waste (corn stalks, sugarcane biogases, drops and culls from fruits and vegetables, pruning's) and hazardous and toxic agricultural waste (pesticides, insecticides and herbicides, etc.). Estimates of agricultural waste arising are rare, but they are generally thought of as contributing a significant proportion of the total waste matter in the developed world. Expanding agricultural production has naturally resulted in increase quantities of livestock waste, agricultural crop residues and agro-industrial by-products. As earlier noted, agricultural development is usually accompanied by wastes from the irrational application of intensive farming methods and the abuse of chemicals used in cultivation, remarkably affecting rural environments in particular and the global environmental in general. The waste generated is dependent on the type of agricultural activities carried out. Agricultural waste is the material obtained due to crop production or from plant growth. In the past this biomass and agricultural waste were either burnt or naturally converted into organic fertilizer under favourable condition. But now in these days biomass produced from agricultural waste are used to generate energy because it carries great potential to convert into energy. The effective utilization of agricultural waste is a good option to convert this waste in energy. For this efforts have been made and many more are under way, it requires guidelines concerning the utilization of agricultural biomass for energy purposes an optimal production. Some of these crops ma compete for land and other resources with traditional crops, while other crops may be grown on marginal lands or even ecologically degraded areas and thus have a positive effect on the environment. Sources of agricultural biomass, utilization structure of agricultural biomass, the volume of production of solid biomass, biogas and bio fuels, cultivation area of energy crops. Biomass is one of the renewable resources that are found in nature in abundant quantity it may be used as one of the most energy resource and can be converted into more reformed resources. Utilization of agricultural waste is very important concern especially when the world scenario of energy demand gap is being reported.

REVIEW OF LITERATURE

1. USDA, (2013) the diversification of agriculture and animals, which includes rice, maize, poultry, cattle, etc. And to further convert the aforementioned into items that are ready for consumption in order to meet the world's population's desire for food, a significant amount of agricultural waste from livestock and agriculture was produced. Agricultural waste products can occasionally produce harmful greenhouse gases such carbon dioxide, ammonia, methane, and nitrous oxide.

2. Sagar et al., 2022; Praharaj et al., (2022) Agricultural waste water is also another threat to agro-ecosystem if not reused scientifically by proper treatments. Efficient sewage and sludge management can also be considered.

3. Sarkar, Ranjan, and Pau. (2019) discussed the synthesis, characterization, and applicability of surface-modified biochar, an eco-friendly and economic adsorbent.

4. Wojcik, Stachowicz, and Maslon. (2018) used Use of wood biomass ash for sludge conditioning research. Siddiqui et al. used thermogravimetric pyrolysis to analyse the. Use new agricultural leftovers to create cost- and environmentally-friendly, highly efficient gasoline.

5. Postai and Rodrigues. (2018) Studied waste of the fruits of Eugenia umbelliflora in a batch system, as alternative adsorbents for removing the dyes methylene blue and rhodamine B from aqueous solution.

6. Oszust et al., (2019) assessed included functional and genetic diversity through the characterization of the catabolic potential and structure of the microbial community's inhaiting the examined organic wastes and their relative biogas residues.

7. Kambli et al. (2018) studied physicochemical and morphological Properties of the fibers extracted from corn husk and compared with other cellulosic fiber, like cotton, and lignocelulosic fiber, like jute.

8. Deng et al., (2018) demonostrated a facile and eco-friendly strategy to transform biomass wastes into superior carbon electrode materials for high performance supercapacitors.

9. Kaya (2018) evaluated eco-friendly and low-cost biowaste adsorbent obtained from waste tea stem was presented as an alternative to the current expensive methods of removing pyronin B dye from aqueous solution.

10. Sahu, Dube, and Mohanty (2018) used an agriculture waste, that is, froundnut shell for the preparation of Mg metal ion supported heterogeneous catalyst.

11. Fiorelli et al., (2018) studied different thermal-physical-mechanical properties and microstructural characteristics of multilayer particleboards.

12. Christoforou et al. (2018) studied catalytic and non- catalytic fast pyrolysis of dried olive husk and olive kernels. African countries are increasingly interested in biofuels to provide access to energy. The development of local technologies using local resources for biodiesel production can be a promising solution.

OBJECTIVES

- For the protection of environment through effective waste management technology.
- To prevent air, water and soil pollution.
- To protection of human and animals health, well being and environment.
- For ensuring the recycle system and waste to energy production.
- For the promotion of solid food and agricultural waste management.

AGRICULTURAL WASTE GENERATION

As earlier noted, agricultural development is usually accompanied by wastes from the irrational application of intensive farming methods and the abuse of chemicals used in cultivation, remarkably affecting rural environments in particular and the global environmental in general. The waste generated is dependent on the type of agricultural activities carried out.

WASTES FROM CULTIVATION ACTIVITIES

While tropical climate is favourable for growing crops, it also supports the development of insects and weeds. This situation creates a high demand for pesticides in order to kill insects and protect against the spread of epidemic disease, this need often lead to abuse of pesticides by farmers. After using pesticides, most of the bottles and packages holding these pesticides are thrown into fields or ponds. According to an estimate made by the plant protection Department about 1.8 % of the chemicals remain in their packaging.

These wastes have the potential to cause unpredictable environmental consequences such as food poisoning, unsafe food hygiene and contaminated farmland due to their potentially lasting and toxic chemicals. In addition to this, existing stagnant or unused pesticides and pesticide packages with residue from the orginal contents poses serious environmental consequence in that they could be stored or buried in the wrong way which may leak or enter the environment through osmosis and thereby affecting the environment.

In agricultural production for example, fertilizers play an important role in maintaining the productivity and quality of plants. Inorganic fertilizer is inexpensive and characterized by high productivity. However, many farmers apply more fertilizer to their crops than the amount needed by the plants. In livestock waste, water volume accounts for 75-95% of total volume, while the rest includes organic matter, inorganic matter, and many species of microorganisms and parasite eggs. Those germs and

substances can spread diseases to humans and cause many negative effects on the environment.

WASTE FROM AQUACULTURE

The growth in aquaculture has led to an increase in the use of feeds for improved production. The amount of feed used in a system is the most important factor used in determining the quantity of waste generated. The wastes that result from the use of aquaculture feeds are discussed in this section of the report and it is a summary of the information provided by one of the major wastes generated in aquaculture is metabolic waste which could be dissolved or suspended. In a properly managed farm, approximately 30% of the feed used will become solid waste.

Feeding rates are dependent on the ambient temperature. Increase in temperature results in increased feeding which gives rise to increased generated waste. Water flow patterns in production units are important for waste management because a proper flow will minimize the fragmentation of fish faeces and allow for rapid settling and concentration of the settle able solids. This can be critical because a high percentage of non-fragmented faeces can be quickly captured which will greatly reduce the dissolved organic waste.

WASTE UTILIZATION ROUTES

Agricultural waste utilization technology must either use the residues rapidly, or store the residues under conditions that do not cause spoilage or render the residues unsuitable for processing to the desired end product. There are a number of applications to which these wastes can be used.

1. Fertilizer Application :

The utilization of animal manures for fertilizer has a definite impact on input energy requirements at the farm level. Manure could supply 19, 38, and 61% of nitrogen, phosphorus and potassium in chemical fertilizer. However, fertilizer use of manures from large confinement is associated with high energy costs for transport, distribution, storage facility requirement, odour problems and possibility of groundwater contamination.
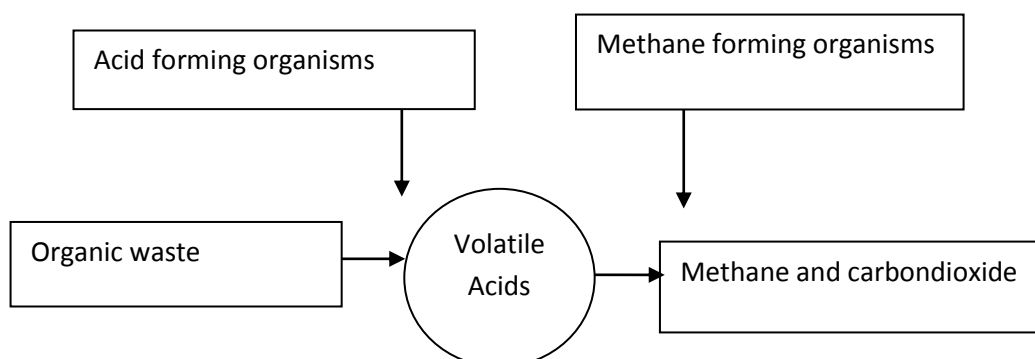
Methane production by two stage microbial fermentation

2. Pyrolysis

In pyrolysis systems, agricultural waste is heated up to a temperature of 400-600 C in the absence of oxygen to vaporize a portion of the material, leaving a char behind. This is considered to be a higher technology procedure for the utilization of agricultural wastes. Others are hydro-gasification, and hydrolysis. They are used for the preparation of chemicals from agricultural waste as well as for energy recovery. Particular interest to agriculture are the preparation of alcohols for fuel, ammonia for fertilizers, glucose for food and feed. Pyrolysis of agricultural waste yields oil, char and low heating value gas.

3. Animal feed

In most developing countries, the problem with animal feed is in the limited availability of protein sources although great efforts are being made to find alternative supplements. Crop residues have high fiber content and are low in protein, starch and fat. Therefore, the traditional method o f increasing livestock production by supplementing forage and pasture with grains and protein concentrate may not meet future meat protein needs. Use of the grain and protein for human food will compete with compete with such use for animal feed. These problems may be circumvented by utilizing residues to feed domesticated animals.

4. Direct combustion

The simple act of burning agricultural waste as fuel is one of the oldest biomass conversion processes known to mankind. Complete combustion of agro-waste 'consists of the rapid chemical reaction of biomass and oxygen, the release of energy, and the simultaneous formation of the ultimate oxidation products of organic matter-CO_2 and water'.

Typical poultry waste management options:

A poultry farm is used here to describe a typical waste management system showing the application of each component function of an AWMS. The poultry waste management system is as described in holistic view of the various waste management options for poultry production.

1. Production

Wastes associated with poultry operations include manure and dead poultry. Depending upon the system, waste can also include litter, wash-flush water, and waste feed.

2. Collection

The manure from poultry operations is allowed to accumulate on the floor where it is mixed with the litter. The manure litter pack forms a "cake" that generally is removed between flocks. The litter pack can be removed frequently to prevent disease transfer between flocks.

3. Storage

Litter from poultry operations is stored on the floor of the housing facility or outside the housing facility. When it is removed, it can be transported directly to the field for land application. If the manure from layer operations is kept reasonably dry, it can be stored in a roofed facility. If it is wet, it should be stored in a structural tank or an earthen storage pond.

CONCLUSION

Agricultural wastes are residues from the growing and processing of raw agricultural products are non-product outputs of production and processing and may contain material that can benefit man. These residues are generated from a number of agricultural activities and they include cultivation, livestock production and aquaculture. Proper waste utilization will assist in developing our agricultural sector and provide viable bio fuel resource for many.

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Unveiling the Essence of the "Cool Girl" Theory in Gillian Flynn's *Gone Girl*

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In the literary realm, Gillian Flynn's "Gone Girl" resonates profoundly, not merely for its suspense-laden narrative but for the complex portrayal of its characters. Among them, the enigmatic "Cool Girl" theory has garnered attention, sparking discussions and analyses across various platforms.

Deconstructing the Cool Girl Persona:

Flynn's portrayal of the "Cool Girl" challenges traditional archetypes, delving into the intricacies of female characters who adopt personas that blend with societal expectations. This persona embodies an amalgamation of traits—a woman who exudes effortless charm, indulges in stereotypically male interests, and presents herself as laid-back and accommodating without losing her allure.

Layers of Complexity in Amy Dunne's Cool Girl:

The novel's protagonist, Amy Dunne, serves as a pivotal embodiment of the "Cool Girl." Her character unfurls layers of complexity, exploring the façade she crafts to conform to societal expectations and, simultaneously, to manipulate perceptions. Flynn ingeniously dissects the "Cool Girl" facade through Amy's narrative, unraveling the challenges of societal pressures and the inner turmoil it conceals. This portrayal transcends mere literary character development, extending into a profound critique of societal norms.

Societal Commentary on Gender Expectations:

The "Cool Girl" theory doesn't merely exist within the confines of fiction; it mirrors societal norms and addresses the dichotomy between authentic self-expression and societal expectations. Flynn's narrative serves as a lens, offering poignant commentary on the pressures individuals—particularly women—face to conform to predefined roles.

Impact on Contemporary Culture:

Flynn's portrayal of the "Cool Girl" resonates in contemporary culture, sparking discussions in various spheres. From social media

discourse to academic analyses, the theory prompts introspection into the authenticity of personas people adopt and the underlying societal pressures.

The Cool Girl Theory: A Literary and Societal Discourse

The profound impact of Flynn's exploration of the "Cool Girl" theory extends beyond literary critique. It serves as a catalyst for societal dialogue, challenging conventional gender roles and urging a re-evaluation of societal expectations placed upon individuals.

Conclusion:

In the rich tapestry of *Gone Girl*, the "Cool Girl" theory emerges as a multifaceted exploration of societal norms, gender roles, and the facade individuals craft to navigate these expectations. Gillian Flynn's masterful storytelling not only captivates readers but also serves as a mirror to societal intricacies and challenges.

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THE POWER OF BLOCKCHAIN IN VOTING SYSTEMS – AN OVERVIEW

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ABSTRACT

In an era where the integrity of electoral processes is paramount, this project proposes the development of a Blockchain Voting System. Traditional voting methods often face challenges such as fraud, manipulation, and lack of transparency. Leveraging blockchain technology, this system aims to provide a secure, transparent, and tamper-resistant platform for conducting elections. Additionally, the system emphasizes accessibility and inclusivity, ensuring a broad range of users can securely participate in the electoral process. The Blockchain Voting System seeks to revolutionize the electoral landscape, aligning with the principles of open governance and fair electoral practices. By providing a decentralized, verifiable, and user-friendly solution, the project contributes to the advancement of transparent and secure democratic processes.

Key features: decentralized identity management, transparent and tamper-proof voting records, smart contracts for election rules, a user-friendly interface, robust security measures, verification mechanism, and integrity.

INTRODUCTION

General Introduction:

Traditional voting systems have long been the backbone of democratic processes, but concerns regarding security, transparency, and fraud have led to the exploration of innovative alternatives. One such groundbreaking solution is the integration of blockchain technology into voting systems.

Blockchain Basics:

a. **Decentralized Identity Management:**
   - Empower users with control over their personal information through cryptographic keys.

b. **Transparent and Tamper-Proof Voting Records:**
   - Use blockchain to create an immutable and transparent ledger of votes.

- Each vote recorded as a transaction, preventing alterations or deletions.

c. Smart Contracts for Election Rules:
- Utilize smart contracts to encode election rules and automate the voting process.
- Ensure transparency and auditability in the execution of smart contracts.

d. User-Friendly Interface:
- Develop an intuitive and user-friendly interface for voters to securely cast their votes.
- Provide clear instructions on the voting process with confirmation of votes cast.

e. Security Measures:
- Implementing the cryptographic techniques to secure vote transmission and prevent unauthorized access.
- Regular audits and updates of security protocols to address emerging threats.

a. Verification Mechanism:
- Enable voters to independently verify their votes and provide a public interface for overall result integrity verification.

b. Accessibility and Inclusivity:
- Ensure the voting system is accessible to a diverse range of users, including those with disabilities.
- Implement multi-language support for a broad user demographic.

Review of Literature:

Shahzad et al., proposed the BSJC proof of completeness as a reliable electronic voting method. They used a process model to describe the whole system's structure. On a smaller scale, it also attempted to address anonymity, privacy, and security problems in the election. However, many additional problems have been highlighted. The proof of labor, for example, is a mathematically vast and challenging job that requires a tremendous amount of energy to complete. Another problem is the participation of a third party since there is a significant risk of data tampering, leakage, and unfair tabulated results, all of which may impact end-to-end verification. On a large scale, generating and sealing the block may cause the polling process to be delayed.

Gao et al. has suggested a blockchain-based anti-quantum electronic voting protocol with an audit function. They have also made modifications to the code-based Niederreiter algorithm to make it more resistant to

quantum assaults. The Key Generation Center (KGC) is a certificateless cryptosystem that serves as a regulator. It not only recognizes the voter's anonymity but also facilitates the audit's functioning. However, an examination of their system reveals that, even if the number of voters is modest, the security and efficiency benefits are substantial for a small-scale election. If the number is high, some of the efficiency is reduced to provide better security.

ARCHITECTURE DESIGN
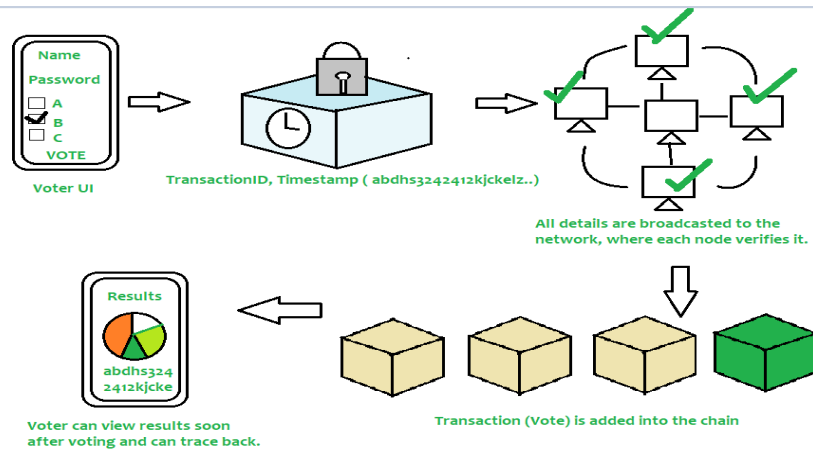
Fig 1: Blockchain voting process

Fig. 1 shows voter needs to enter his/her credentials in order to vote. All data is then encrypted and stored as a transaction. This transaction is then broad casted to every node in network, which in turn is then verified. If network approves transaction, it is stored in a block and added to chain. Note that once a block is added into chain, it stays there forever and can't be updated. Users can now see results and also trace back transaction if they want. Since current voting systems don't suffice to security needs of modern generation, there is a need to build a system that leverages security, convenience, and trust involved in voting process. Hence voting systems make use of Blockchain technology to add an extra layer of security and encourage people to vote from anytime, anywhere without any hassle and makes voting process more cost-effective and time-saving.

BENEFITS OF BLOCKCHAIN IN VOTING

a. Increased Transparency and Trust:

Blockchain's transparency feature allows voters to trace their votes through the decentralized network, ensuring that each vote is accurately recorded. This transparency builds trust in the electoral process, addressing concerns about hidden agendas or manipulations.

b. Reduced Fraud and Manipulation:

The immutability of blockchain makes it extremely difficult for malicious actors to alter or delete votes. Cryptographic algorithms secure each transaction, providing a robust defense against fraud and manipulation that may compromise the integrity of traditional voting systems.

c. Accessibility and Convenience:

Blockchain-based voting systems can enhance accessibility for voters. Remote and secure voting options become feasible, potentially increasing voter turnout. The convenience of voting from the comfort of one's home or through mobile devices can revolutionize the democratic experience.

d. Security Measures:

Blockchain relies on cryptographic techniques to ensure the security of data. Each vote is encrypted, and the decentralized nature of the network makes it resistant to hacking attempts. The cryptographic safeguards not only protect the votes but also maintain the anonymity of the voters.

CHALLENGES AND CONCERNS

While the potential benefits are immense, the adoption of blockchain in voting systems faces challenges. Resistance to change, regulatory hurdles, and the need for widespread technological literacy are among the primary obstacles. Moreover, concerns about cybersecurity risks, such as potential attacks on the blockchain network, must be addressed for successful implementation.

REAL-WORLD EXAMPLES

Several countries and organizations have embraced blockchain in voting experiments. Estonia, for instance, has implemented blockchain for e-governance, including digital voting. Learning from such examples can provide valuable insights into the practical application and challenges of integrating blockchain into large-scale voting systems.

FUTURE IMPLICATIONS

The integration of blockchain in voting systems could reshape the landscape of democratic processes. As technology advances, the potential for more secure, transparent, and efficient elections becomes increasingly promising. The adaptation of blockchain may not only enhance the electoral experience but also lay the foundation for more inclusive and participatory democracies.

CONCLUSION

In conclusion, the development of a Blockchain Voting System represents a transformative step towards ensuring the integrity, transparency, and accessibility of electoral processes. By combining the decentralized nature of blockchain technology with robust identity management, transparent voting records, and smart contracts, the proposed system aims to address longstanding challenges in traditional voting methods. The comprehensive methodology outlined above underscores the importance of meticulous planning, collaboration with stakeholders, and a user-centric approach. The commitment to user-friendliness, security, and inclusivity reflects a dedication to creating a voting system that is accessible to a diverse range of users, including those with varying abilities and linguistic backgrounds. The iterative process of user testing and feedback ensures that the system is not only technically sound but also meets the practical needs and expectations of its users. In essence, this project envisions a future where blockchain technology serves as a cornerstone for democratic governance, fostering a voting environment that is not only secure and transparent but also inclusive and user-centric. Through these concerted efforts, the Blockchain Voting System aspires to redefine the standards for electoral integrity and contribute to the evolution of democratic practices worldwide.

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ROLE OF ICT IN AGRICULTURE SECTOR WITH SPECIAL REFERENCE TO TIRUNELVELI CITY

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Abstract

Agriculture is the backbone of our country. Though its contribution to GDP is just around 14 per cent, over half of our country's population depends on agriculture for their livelihoods. The rising food prices have pushed people back into poverty. The growing global population, expected to hit 9 billion by 2050, has heightened the demand for food and placed pressure on alreadyfragile resources. Feeding that population will require a 70 per cent increase in food production. Agriculture faces a range of modern and serious challenges, particularly in developing countries exposed to price shocks, climate change, and continued deficiencies in infrastructure in rural areas. It is in this context that ICTs play a crucial role in helping people meet the demand for increased food production. ICTs can play a very crucial role by disseminating information to farmers to help them make better well informed decisions. Through ICTs people can obtain the latest up-to-date information, learn and practice sustainable farming.

Keywords: Agriculture, GDP, Information and Communication Technologies

Introduction

Agriculture is facing new and severe challenges in its own right. With rising food prices that have pushed over 40 million people into poverty since 2010, more effective interventions are essential in agriculture (Anonymous, 2011a). The growing global population, expected to hit 9 billion by 2050, has heightened the demand for food and placed pressure on already-fragile resources. Feeding that population will require a 70 percent increase in food production (Anonymous, 2009). Agriculture faces a range of modern and serious challenges, particularly in developing countries exposed to price shocks, climate change, and continued deficiencies in infrastructure in rural areas. Climate change has also played an acute role by making prediction of natural events very uncertain. Farmers can no longer rely on timeworn coping strategies when all of their familiar benchmarks for making agricultural decisions— the timing of rains for planting and pasture, the probability of frost, the duration of dry intervals that spare crops from disease are increasingly less reliable. Severe and

unexpected weather is shrinking already-limited yields and promoting migration from rural areas and rural jobs. Weather-related events leave developing-country governments, which lack the resources and the private sector investment to provide risk management instruments, to cope with major crop failures and the displaced victims only after the fact.

ICT tools in Agriculture

Information and Communication Technology (ICT) is the powerhouse of the world economy. It has been recognized as a tool for mainstream development to enhance the economic and social status of the citizens of Bangladesh under Vision 2021. ICT stands for Information and Communication Technology, it refers to any electronic means of capturing, processing, storing and disseminating information. Cell phones, computers, the internet, and networks, hardware and software, satellite systems, and videoconferencing or distant learning are all examples of information and communication technology (ICT). Information has become an important input in the growing knowledge-intensive agriculture. Information is even more important for smallholder wealthy poor farmers and producers, who are facing the challenge posed by income growth with limited resources in their struggle for livelihood and sustenance . ICT has become the most influential means of disseminating the information people need worldwide. ICT plays an important role in disseminating knowledge and attitudes among the rural population and disseminating a wide range of information and advice. The widespread use of modern information technology for communication between researchers, extension workers and farmers needs to be promoted so that technology and information can be transferred in an affordable manner. ICT has many promising applications in agricultural extension. It could bring new information services to rural areas where farmers, as users, will have more control over existing information channels than ever before. The use of ICT has been recognized as an important pillar of agricultural expansion and an essential input process for imparting knowledge (information) and advice as an input for modern agriculture in the current situation of the rapidly changing world. Agricultural extension which on the one hand relies heavily on the exchange of information between farmers and between them and on the other hand has identified a wide range of other actors as an area where ICT can play an important role.

Scientists have functionally defined ICT-based media as an umbrella term that includes computer hardware and Software, digital broadcasting and telecommunications technology as well as online or offline digital data storage, and the contemporary social networking aspect. It contains a wide range of components, such as TVs, radios, cell phones, and policies and laws that govern the widespread use of these media. ICT can bridge the communication gap between development workers, rural

organizations and farmers. It can enhance local knowledge demand and information exchange and research-extension-farmer connectivity and improve quality decisions that affect rural as well as agricultural and rural development.

ICT initiatives for agriculture

Easykrishi Private Ltd

Easykrishii is a young enterprise that uses digital interventions with an aim to change agricultural practices from Reactive Mode to Proactive Mode. It is a consortium of 12 FPOs and 150 Ground Organizations. 14 In a world of declining land-holdings, we realize aggregation of agricultural resources is the only way to keep this planet sustainable for human survival. Aggregation ensures viability and profitability of Agriculture.

Krishi community radio station

Community radio means broadcasting with the objectives of serving the cause of the community in the service area by involving members of the community in the broadcast of their programmes. Community radio is a people's venture which reflects the hopes, aspiration and concerns of a community, generally ignored or overlooked by the mainstream media. People decide and articulate their communication needs and priorities themselves. It is a democratic mode of communication which enhances the participation of the people in the development process and helps in capacity building.

M-Kisan

Under the National e-Governance Plan-Agriculture, an SMS Portal was inaugurated by the Hon"ble President of India in 2013 which provides mobile based services to farmers. While mobile phones have deeply penetrated into rural India, the use of internet facilities is still very limited. In this context, mobile messaging is a very effective tool which can reach the interiors. Hence m-KisanSMS Portal for farmers was created which enables all central and state government organizations in agriculture and allied sectors to give information/services/advisories to farmers by SMS in their language on agricultural practices and specific needs of farmers4 . The main objective of mKisan is the use of mobile technologies to strengthen farmer-extension-expert linkages in India. mKisan is part of the mAgri initiative and it looks at issues of dissemination of information without intermediaries to focus on scale and content quality management.

Review of Literature

1. Tettey (2013) examined the usage of the mobile phone in the business of farmers within AkuapemNorth District in the Eastern region of Ghana with a sample of 100 farmers. It was found that the use of the mobile phone has improved customer relation, enhanced communication with suppliers, extension officers and customers, and it has also increased farmers profit. The study proved challenges such as inability to have access to calling cards regularly, fluctuation in network receptions and constant energy to charge their mobile phone for rural agriculturalists.

2. Anonymous (2011) reported five main trends that have been the key drivers for the use of ICT in agriculture, particularly for poor producers: low-cost and pervasive connectivity, adaptable and more affordable tools, advances in data storage and exchange, innovative business models and partnerships and the democratization of information, including the open access movement and social media. These drivers are expected to continue shaping the prospects for using ICT effectively in developing country agriculture.

3. Labonne and Chase (2009) reported that, purchase of mobile phones in Philippines increased the growth rates of the incomes in the range of 11-17 per cent significantly as evident from the World Bank study. This is due to the stronger bargaining position of the farmers in the existing trade relationships in addition to being able to seek out to other markets. Another study found that purchase of mobile phones in Morocco increased the average incomes by 21 per cent (Ilahiane, 2007).

4. Aker (2008) found that cell phones reduced the grain price dispersion across markets by a minimum of 6.4 per cent and reduced intra-annual price variation by 12 per cent. Cell phones have a greater impact on price dispersion for market pairs that are farther away and for those with lower road quality.

Objectives:
 To find out the ways the farmers can use ICTs.
 To find out the farmers perceived benefits from the use of ICT.

 Methodology:
        The present study was based on the survey using schedule, questionnaire, observation and conducting interview as well as collection of data from the secondary sources of information, i.e. Institution's Websites/Home page, Annual reports, etc.

Data Analysis:
TABLE 1.1 Demographics of Sample Respondents

Characteristics	Categories	No. of responses	Percentage
Gender	Male	70	70
	Female	30	30
Age group	Below 30	10	10
	30-40	50	50
	Above 40	40	40
Educational qualification	Upto X	34	34
	XII	30	30
	Degree	22	22
	Others	14	14

(Source : Primary Data)

Demographic features of the surveyed respondents are given in the Table 1.1. Majority i.e. 70% of the respondents are male. The age composition of the respondents points that majority i.e. 50% belongs to the age group of 30-40. The educational qualification of the majority respondents are upto X std.

Table 2: Sources of agricultural information

S.N	Particular	No.of responses	Percentage
1	Other progressive farmers	44	44
2	Radio /Television	27	27
3	Newspaper	11	11
4	Extension worker	18	18
	Total	100	100

Source : Primary data

The above table shows that 44% of the respondents are other progressive farmers. 27% of the respondents are Radio /Television, 11% of the respondents are Newspaper, 18% of the respondents are extension worker. Majority of the respondents are sourced information from other progressive farmers

Table -3 Constraints in using ICT tools

S.No	Particular	No.of responses	Percentage
1	Lack of availibility of ICT facilities	11	11
2	High cost of internet service	27	27
3	Lack of personal interest	13	13
4	Low bandwidth speed of internet	49	49
	Total	100	100

Source: Primary Data

The above table shows that 11% of the respondents are lack of availibility of ICT facilities. 27% of the respondents are high cost of internet service, 13% of the respondents are lack of personal interest, 49% of the respondents are low bandwidth speed of internet. Majority of the respondents are low bandwidth speed of internet.

Findings of the study
- ❖ Majority 70% of the respondents are male.
- ❖ Majority 50% belongs to the age group of 30-40.
- ❖ The educational qualification of the majority respondents are research scholar.
- ❖ Majority of the respondents are sourced information from other progressive farmers
- ❖ Majority of the respondents are low bandwidth speed of internet.

Suggestions
- ❖ These ICT initiatives are meeting the selected portions of the population and they have to be popularized to meet the large sections of the community.
- ❖ Use of mobile application is very limited among the farmers. This needs to be analysed and promoted extensively amongst the farmers. e-literacy schools need to be established for this purpose.
- ❖ Alternative modes of communication need to be established in places where power and internet connectivity turns out to be barriers.
- ❖ Development of infrastructure is crucial for the widespread dissemination of ICT benefits.

Conclusion

The application of ICT in agriculture has emerged an important pillar of agriculture extension focusing on the enhancement of agricultural and rural development through improved information and communication processes. Effective utilization of ICT has potential to make the rural communities prosperous as it enables the dissemination of requisite information in user friendly form, easy to access, cost-effective ways at the right time. ICT presented unprecedented opportunities to empower small land holder's farmers by strengthening their capabilities in marketing their products and all agricultural works. Despite these opportunities when it come to building trust and collaboration, face – to – face communication remains hard to beat, Because for rural farmers communication is still about building personal relationship only, not for conveying the information. Using ICT services, indicating that all farmers, irrespective of their landholding size, were using them. It means that farmers' landholding size has no bearing on their frequency of use of ICT services. From these results, it is important to encourage the use of ICT tools in rural level, by

some measures such as: ICT infrastructure development, training on ICT tools use towards farmers, especially smallholder for setting market information.

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A COMPREHENSIVE STUDY OF HIGH AND LOW VISCOUS LIQUIDS

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ABSTRACT

Viscosity is one of the most significant property of fluids, which dictate a lot about the fluid behaviour when it is deformed by the action of shear stress. It determines the viscosity of different fluids by measuring the amount of time it takes steel balls to travel through given distances through the liquids and then compare them with the original values. The purpose of this experiment is to understand the principle of measuring viscosity of a liquid using the fallingsphere method and to understand the viscosity of liquid and the theoretical principle measurement by calculating viscosity value through an experiment. The contents of the experiment, the viscosity of the steel ball is measured when the test ball reaches the constant velocity by holding the test liquid to measure the dynamic velocity and dropping the test ball bead free. To calculate the viscosity of the liquids, like high viscous liquid and low viscous liquids.
Key words : Viscosity-high viscous-low viscous

ABOUT LIQUIDS

A liquid is a nearly incompressible fluid that conforms to the shape of its container but retains a (nearly) constant volume independent of pressure. The volume is definite if the temperature and pressure are constant.

When a solid is heated above its melting point, it becomes liquid, given that the pressure is higher than the triple point of the substance. Intermolecular (or interatomic or interionic) forces are still important, but the molecules have enough energy to move relative to each other and the structure is mobile. This means that the shape of a liquid is not definite but is determined by its
container.

The volume is usually greater than that of the corresponding solid, the best known exception being water, H_2O. The highest temperature at which a given liquid can exist is its critical temperature.

CHARACTERISTICS OF LIQUIDS

Liquids can vary substantially from each other. For example, olive oil weighs more than vinegar and is much thicker, causing it to pour more slowly. Despite the differences between liquids, they can generally be characterized by a set of common physical properties and they are as follows:

- **COHESION**

    The molecular entities that make up a liquid attract each other to varying degrees due to the intermolecular forces that bind them together. Cohesion can be seen in a liquid's surface tension, which is what holds water together in drops or makes it possible to float a pin on its surface

- **ADHESION**

    Attractive forces can exist between a liquid and another substance to varying degrees, depending on the type of liquid and the other substance. Adhesion also explains capillary action, the tendency for liquid to ascend narrow cylinders or permeable substances.

- **VOLUME**

    Although liquid conforms to the shape of its container, it maintains a relatively fixed volume. A change in pressure or temperature might alter the volume slightly. This behavior is much different from gas, which expands to fill its container.

- **COMPRESSIBILITY**

    Strong intermolecular forces hold liquids together, similar to solids, resulting in a highly dense substance that makes a liquid fairly incompressible

- **VISCOSITY**

    A liquid's ability to flow is one of its fundamental characteristics. However, the degree to which it flows depends on its viscosity, which varies according to its molecular size and intermolecular forces. This is considered as an important characteristic in liquids for determining viscosity

VISCOSITY

Most fluids offer some resistance to motion, and we call this resistance "viscosity." Viscosity arises when there is relative motion between layers of the fluid. More precisely, it measures resistance to flow arising due to the internal friction between the fluid layers as they slip past one another when fluid flows.

Viscosity can also be thought of as a measure of a fluid's thickness or its resistance to objects passing through it. A fluid with large viscosity resists motion because its strong intermolecular forces give it a lot of internal friction, resisting the movement of layers past one another. The viscosity of liquids decreases rapidly with an increase in temperature, and the viscosity of gases increases with an increase in temperature. Thus, upon heating, liquids flow more easily, whereas gases flow more slowly. Also, viscosity does not change as the amount of matter changes, therefore it is an intensive property, which does not change when the amount of matter is increased or decreased.

The unit of viscosity is **Nsm-2 or Pascal seconds**

TYPES OF VISCOSITY
Viscosity is the measure of fluid's friction to its flow. There are two ways to measure the fluid's viscosity as follow
- Dynamic Viscosity
- Kinematic Viscosity

DYNAMIC VISCOSITY
- This is also known as absolute viscosity.
- It measures the fluid's resistance to flow when an external force is applied
- The unit of dynamic viscosity is Pascal-seconds.
- Its SI unit is newton-second per meter square (Nsm-2).
- Its dimension is [ML-1T -2]

KINEMATIC VISCOSITY
- It measures the resistive flow of a fluid under the weight of gravity.
- It is expressed as the ratio of fluid dynamic viscosity to its density. The unit is m2 s -1 .
- Its dimension is [ML2T -1].

COEFFICIENT OF VISCOSITY
The ratio of the shearing stress to the velocity gradient of the fluid is called the coefficient of viscosity η. Hence the coefficient of viscosity is given by

η = F . d / A . v

IMPORTANCE OF VISCOSITY
1) The oil used as a lubricant for heavy machinery parts should have a high viscous coefficient.
2) Blood circulation through arteries and veins depends upon the viscosity of fluids.
3) The highly viscous liquid is used to damp the motion of some instruments.
4) It determines the internal resistance of fluid.
5) It maintains the performance of machine and automobile by determining the thickness of lubricating oil or motor oil

APPLICATIONS OF VISCOSITY
- The highly viscous liquid is used to damp the motion of some instruments and is used as brake oil in hydraulic brakes.
- Blood circulation through arteries and veins depends upon the viscosity of fluids

METHODOLOGY
STOKE'S LAW

According to Sir George Stokes, "the force acting between the liquid and falling body interface is proportional to velocity and radius of the spherical object and viscosity of fluid". Stoke's law explains the main reason why raindrops falling from the sky do not harm us on the ground. Stokes law is an extremely important concept that is a part of physics.

Stokes law discusses the active force applied on a body when it is dropped in a liquid. Initially, because of low viscous force, this velocity of the falling body remains low. But, as the spherical body falls with its effective weight, it gains acceleration, and this velocity of the body increases gradually. Stoke's Law is an equation that expresses the velocity of small spherical particles in a fluid medium. The law is established by taking into account the forces acting on a certain particle as it falls through a liquid column under the influence of gravity.

In fluid dynamics, **Stokes' law** is an empirical law for the frictional force also called drag force

STOKE'S METHOD FOR VISCOSITY

For the determination of high viscous liquids we get through **stoke's method.**

APPARATUS REQUIRED
- ❖ A long cylindrical glass jar
- ❖ High viscous fluid (Gingelly oil, castor oil, etc.,)
- ❖ Stop watch
- ❖ Spherical ball
- ❖ Screw gauge
- ❖ Scale

PROCEDURE
- ❖ A long cylindrical glass jar with markings is taken.
- ❖ Fill the glass jar with the experimental liquid.
- ❖ Two points A and B are marked on the jar. The mark A is made well below the surface of the liquid so that when the
- ❖ ball reaches A it would have acquired terminal velocity V.
- ❖ The radius of the metal spherical ball is determined using screw gauge.
- ❖ The spherical ball is dropped gently into the liquid.17
- ❖ Start the stop clock when the ball crosses the point A. Stop the clock when the ball reaches B.
- ❖ Note the distance between A and B and use it to calculate terminal velocity.
- ❖ Now repeat the experiment for different distances between A and B. Make sure that point A is below the terminal stage.

HIGH VISCOUS LIQUIDS FOR EXPERIMENT

We have taken the highly viscous liquids for determining coefficient of viscosity by Stoke's method.

1. Castor oil
2. Gingelly oil

CASTOR OIL

Castor oil is a vegetable oil pressed from castor beans. It is a colorless or pale yellow liquid with a distinct taste and odor. Its boiling point is 313 °C (595 °F) and its density is 0.961 g/cm3. It includes a mixture of triglycerides in which about 90% of fatty acids are ricinoleates. Oleic acid and linoleic acid are the other significant components.

Castor oil and its derivatives are used in the manufacturing of soaps, lubricants, hydraulics, resistant plastics, waxes and polishes, nylon, and perfumes. In the food industry, food-grade castor oil is used in food additives, flavorings, candy (e.g., polyglycerol polyricinoleate in chocolate).

GINGELLY OIL

Gingelly oil is also known as **sesame oil.** In South India, it is commonly called as Nalla Ennai. It is extracted from raw sesame seeds (non-roasted).

Applications of stokes method

❖ To determine the terminal velocity, the size and the density of sphere and liquid.
❖ The stoke' s method is a technique used to measure the viscosity of a liquid

POISEUILLE'S LAW

The law states that the velocity of a liquid flowing through a capillary is directly proportional to the pressure of the liquid and the fourth power of the radius of the capillary and is inversely proportional to the viscosity of the liquid and the length of the capillary

POISEUILLE'S METHOD FOR VISCOSITY

There are two ways for determining the coefficient of viscosity in Poiseuille's method.

1. Newtonian fluid in laminar flow
2. Weight drop method

We track the weight drop method by applying poiseuille's law for determining viscosity coefficient of low viscous liquids.

APPARATUS REQUIRED

❖ Capillary type viscometer
❖ Stop clock
❖ Fluids to be examined (Water, Kerosene,etc.,)

- ❖ Travelling microscope
- ❖ Scale

PROCEDURE
- ❖ The capillary type viscometer is filled with the liquid to be examined.
- ❖ The liquid is allowed to flow in a beaker by drop by drop.
- ❖ The time taken for the liquid to reach the distance of difference of 5 cm is noted.
- ❖ The distance of point B from the end of the capillary h2 is noted
- ❖ The radius of the capillary tube is noted by using travelling Microscope.

LOW VISCOUS TAKEN FOR EXPERIMENT
We have taken low viscous liquids for measuring viscosity coefficient by Poiseuille's method.
And they are,
- (i) Water
- (ii) Kerosene

Water
Water is the major source for living. It is an inorganic compound with chemical formula H_2O.
- • It is an **Universal solvent.** It is colorless, odourless and tasteless liquid.
- • It has its uses in various aspects such as industries, household and irrigation.
- • About 60% of our body is made up of water and it regulates body temperature, regulates blood levels, etc…
- • Water covers about 71% of Earth's surface and 97% of Earth's water is found in oceans.

Kerosene
1. Kerosene also spelled **kerosene**, also called **paraffin** or **paraffin oil.**
2. It is flammable hydrocarbon liquid used as a fuel. Kerosene is typically pale yellow or colourless and has a notunpleasant characteristic odour.
3. It is obtained from petroleum and is used for burning in kerosene lamps and domestic heaters or furnaces, as a fuel or fuel component for jet engines, and as a solvent for greases and insecticides.

APPLICATIONS OF POISEUILLE'S LAW
- • It can be used to calculate the blood flow rate in arteries and veins, which is important for understanding blood pressure and cardiovascular health.

- It can be used to predict the flow rate of fluids through pipes of different diameters and lengths, which is important for designing fluid systems such as pipelines, plumbing and hydraulic systems.
- It is commonly used in microfluidic systems which involve the manipulation of small volumes of fluid on a micro-scale.
- It can be used to calculate the airflow rate in ventilation systems, which is important for designing heating, ventilation and air conditioning systems.
- It is extensively used in the design and optimization of micro channels, which are small channels with diameters on the order of micrometers

RESULT AND DISCUSSION

Finally we have determined the value of the viscosity of the liquids. For that we use the Stoke's method and Poiseuille's method and the value are in determine by our self. The observed parameter value of viscosity of the liquid are tabulated in the Table(1&2). It is observed by as in the project andbelong to the **"A COMPREHENSIVE STUDY OF HIGH AND LOW VISCOUS LIQUIDS".**

SUMMARY AND CONCLUSION

In this project we gathered the high viscosity liquids, such as castor oil and Gingelly oil are thick fluids with a high resistance to flow. They are often used in various applications, including lubricants, adhesives, sealants, and high viscosity food products. Understanding the rheology of these viscous materials is crucial for designing the right equipment to handle, measure, and control their flow.

For instance, high viscosity pumps are designed to handle the increased shear stress and flow resistance of these liquids. Similarly, Viscometer are used for accurate viscosity measurement. The viscosity index is a key parameter in fluid dynamics, influencing factors like drag reduction and flow rate**.** Moreover, the use of high viscosity oils and polymer solutions in high viscosity applications requires careful consideration of factors like flow rate and viscosity control. Thus, the study of high viscosity liquids and low viscous liquids is not just about understanding their properties, but also about their practical applications and the challenges involved in their handling and use.

Finally, we conclude that in high viscous liquids, Castor oil is greater than Gingelly oil. In the low viscous liquids , kerosene is greater than water.

Low viscous liquids:

LIQUIDS	RANGE OF VISCOSITY
Water	$0.0171 \ Nsm^{-2}$
Kerosene	$0.71 \ Nsm^{-2}$

High viscous liquid

LIQUIDS	RANGE OF VISCOSITY
Castor oil	2.1459 Nsm^{-2}
Gingelly oil	0.3421Nsm^{-2}

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A STUDY ON FINANCIAL LITERACY LEVELS AMONG WOMEN STUDENTS PURSUING UNDERGRADUATION IN TIRUNELVELI CITY

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INTRODUCTION

Financial Literacy is the understanding of financial components and skills largely classified as budgeting, investing, taxation, loans, subsidies etc., and other personal financial management leading to wealth generation and wellbeing of individuals. As the management of money or wealth is very much important, as it affects the lifestyle and make the world a better place for them to live. Each and every person, especially women, should know and hone their financial management literacy skills to lead their life in a decent and peaceful manner. Financial Literacy helps individuals to comprehend various financial concepts and enables them to manage their funds or family wealth effectively and efficiently. Financial awareness is an important life skill to acquire, as it improves one's potential in decision making and thus individuals become self-sufficient. With this awareness, financial stability can be accomplished and the dependents of the individual feels safe and well guided. The term personal financial awareness refers to the person's ability to focus and manage their personal finance effectively. Self-awareness on finance is very much important as it helps people in managing their financial affairs and to improve their standard of living. It also enables us to make wiser and more informed spending and saving decisions. Both men and women should have sufficient financial knowledge to effectively participate in money related activities to themselves and their family. With rising costs and inflation, families live well, if they are financially literate, especially women. The upbringing of children by a financially aware mother will cater their ambitions well and the society led by educated and financially aware women will definitely be a flourishing society.

STATEMENT OF PROBLEM

The research study has been studied and analyzed to solve the below mentioned problems:

1. Why undergraduate women students have been taken for this study?

Undergraduate women students are going to face the real world soon after completing their degree courses. Most of them shall attain the age of almost 21 and some of them will get married to start their family life

or they started a career in business or through a job. In one way or other, all of them are forced to manage their money or family wealth. The impact of personal finance management knowledge in their personal life as a development tool will help in their family responsibilities or career responsibilities.

2. What are the benefits of attaining Financial Knowledge to women students?

While attaining the knowledge of personal financial management the women students are able to understand the various loan schemes offered by banks under various categories including special benefits for women entrepreneurs so that they can make their decisions wisely by availing these facilities instead of using the high interest local market loan scams. On studying various investment methodologies, the women students are taking firm decisions on investing their hard-earned money in safe heavens instead of losing their money in luring advertisements, which are offering higher interest rates than realistic ones as approved by RBI. Women must attain the knowledge of tax planning to mitigate their tax liabilities, utilizing tax deductions and exemptions. Insurance Planning is another important aspect. Is investing in Gold is really worth? By understanding the economy of India as well as the geo-political world scenarios the avenue of investing from home and earn a reasonable income with security to their principal money gives greater freedom and joy in their future family life and socio-economic improvement around them.

OBJECTIVES OF THE STUDY

The present study with reference to the financial literacy adequacy and awareness among women students aims the following;

- To find the levels of financial literacy among undergraduate women students.
- To impart necessary training to create skillsets to manage their personal finance.
- To know their opinion on increasing their financial knowledge.
- To know their surety on management of their own finances in future.

REVIEW OF LITERATURE

Hanson and Olson (2018) explored the relationship between financial literacy and family communication patterns through an online survey for a sample of 96 United States college students between the ages of 18 and 26. The results suggest that conversations within the family regarding financial matters provide important knowledge regarding financial matters and may be a factor to consider in designing any financial

literacy curriculum. In further support of such discussions, an attitude towards financial products has also been shown to influence student's financial literacy levels.

Abhishek Janvier Frederick et al, (2017), explained about the tax planning is important for every assessee to reduce their tax liability and compliance with the income tax rule. To enjoy the benefits of tax planning the assessee must know different provisions of tax savings schemes available in the law. This paper studies the awareness of working women, towards tax benefits schemes and the investment pattern towards tax benefits schemes in Allahabad. The matters of investment, future financial planning and investment for tax benefits are generally taken care by the male members of the family. But in the present scenario there is a need for understanding the complexities of finance by female study, therefore to target this need the present study is being conducted to measure the awareness of working women in related to Tax saving schemes. The study is all about understanding the customer's awareness to the tax benefit schemes. And also, to understand the investment pattern of customers towards these tax benefits.

Analysis and Interpretation

Table: 1 Distribution of respondents' details

Classification	Particulars	No. of Respondents	Percentage
Age	18 years	20	20
	19 years	25	25
	20 years	30	30
	21 years	15	15
	22 years	10	10
	Total	**100**	**100**
Loans	Housing loan	15	15
	Agricultural loan	25	25
	Jewel loan	25	25
	Personal loan	30	30
	None of the above	05	05
	Total	**100**	**100**
Financial Literacy	To lead a financially good and secured life	40	40
	To learn about the investment for your future needs	20	20
	To buy the right kind of insurance	10	10
	All of the above	30	30
	Total	**100**	**100**

Source: Primary Data

From the above table, out of 100 respondents, 20 percentage of the respondents belongs to the age group of 18 years, 25 percentage of the respondents belongs to the age group of 19 years, 30 percentage of the respondents belongs to the age group of 20 years and 15 percentage of the respondents belongs to the age group of 21 years, 10 percentage of the respondents belongs to the age group of 22 years. It is highly stated that the majority of the respondents are in the age group of 20 years.

From the analysis, 15 percentage of the respondents family have their housing loan, 25 percentage of the respondents family have their agricultural loan, 25 percentage of the respondents family have their jewel loan, 30 percentage of the respondents family have their personal loan and 05 percentage of the respondents family do not have any kind of loans. It is highly stated that majority of the respondents family have Personal loan.

40 percentage of respondents stated that the financial literacy is required to lead a financially good and secured life, 20 percentage of respondents stated that the financial literacy is required to learn about the investment for your future needs, 10 percentage of respondents stated that to buy the right kind of insurance and 30 percentage of respondents stated that all of the above. It is highly stated that large number of respondents had stated the need of financial literacy to lead a financially good and secured life.

RESPONDENTS PRIORITY TOWARDS FINANCIAL KNOWLEDGE ACQUISITION:
TABLE 2

RESPONDENTS PRIORITY TOWARDS FINANCIAL KNOWLEDGE ACQUISITION

PARTICULARS	Very important	Important	Neutral	Of little importance	Unimportant	SCORE
Budgeting	22(110)	26(104)	18(54)	19(38)	15(15)	321
Taxation	25(125)	20(80)	13(39)	18(30)	24(24)	304
Savings	20(100)	17(68)	23(69)	18(36)	22(22)	295

SOURCE: Primary Data

INTERPRETATION

Table 2 discloses that the importance on increasing their financial knowledge by the respondents. Budgeting gets the first place with the score of 321. Taxation gets the second place with the score of 304 and the savings gets the third place with the score of 295

It is highly stated that budgeting is the highest priority by the respondents towards financial knowledge acquisition.

ANALYSIS OF FINANCIAL LITERACY NEEDS WITH AGE GROUP

The following are the hypothesis framed to test the relationship between the variables.

H0: There is no significant difference between the financial literacy needs and the age group.

Ha: There is a significant difference between the financial literacy needs and the age group.

TABLE 3
ANALYSIS OF FINANCIAL LITERACY NEEDS WITH AGE GROUP

NEEDS / AGE GROUP	To lead a financially good and secured life	To learn about the investment for your future needs	To buy the right kind of insurance	All of the above	TOTAL
18	8	4	2	6	20
19	11	5	2	7	25
20	13	6	2	9	30
21	5	3	2	5	15
22	3	2	2	3	10
TOTAL	40	20	10	30	**100**

SOURCE: Primary Data

INTERPRETATION

Level of Significance = 5% 0.05 Table value = 1.782
Calculated value = 1.288

Since the calculated value is 1.288 is lesser than the table value 1.782. There is no significant relationship between the financial literacy needs and the age group. Hence, Null Hypothesis H0 is accepted and the Alternative Hypothesis Ha is rejected.

FINDINGS:
- Out of 100 respondents, 30 percentage of the respondents belongs to the age group of 20 years.
- Out of 100 respondents, 40 percentage of the respondents belongs to third year of their under graduation.
- Out of 100 respondents, 30 percentage of the respondents family have their personal loans.
- Out of 100 respondents, 95 percentage of the respondents know the effectiveness of card facilities.
- Out of 100 respondents, 40 percentage of the respondents highly stated the need of financial literacy level as to lead a financially good and secured life.
- Out of 100 respondents, 61 percentage of the respondents stated that they know about the share market investment.

➢ Out of 100 respondents, 55 percentage of the respondents stated that their reason for purchasing insurance is to protect from the loss they incurred.

➢ Out of 100 respondents, 85 percentage of the respondents are saying yes that gold is very much attractive on the basis of investment.

➢ Out of 100 respondents, 47 percentage of the respondents belongs to the group that the EMI is neither good nor bad.

➢ Out of 100 respondents, 30 percentage of the respondents belongs to the age group of 20 years.

➢ Out of 100 respondents, 34 percentage of the respondents are not too sure in managing their own finances in future.

➢ Out of 100 respondents, 53 percentage of the respondents stated that increasing their financial knowledge is very much important.

SUGGESTIONS

Many people have different levels of financial literacy but here are some suggestions to improve the level of fin**ancial knowledge.**

- **Subscribe to financial** newsletters.
- Read personal finance books.
- Use social media.
- Start keeping a budget.
- Talk to a financial professional.
- Understand credit scores.
- Gain control over your debt.
- Pay yourself first to grow your savings.

CONCLUSION

Young generation these days are more creative and technology savvy than the older generation socially and financially. To conclude, financial literacy possesses the power to impact a nation's economy at large. Like when you ride a bike or a car you must know the road, similarly, when you earn or have any passive income, it is a must to have the basic financial literacy to grow not just as an individual but together as a nation. The result reveals that the key driven on investment among young generation is significantly based on independent variables selected. Finally, the limitations and recommendations are included to help further researchers to have a better finding of the result.

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சக்கைப் புதினத்தில் விளிம்புநிலை மாந்தர்களின் வாழ்வியல்

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ஆய்வுச்சுருக்கம்

நாம் வாழும் மண்ணில் மனித இனமானது பிறப்பு, நிறம், தொழில், இனம், சாதி போன்ற பல காரணங்களால் ஏற்றத்தாழ்வு கொண்டுள்ளது. இவ்வகையான ஏற்றத்தாழ்வு காரணமாக மனிதன் காலந்தோறும் அதிகார மையத்தால் ஒடுக்கப்பட்டு வருவதை எல்லாத் தளங்களிலும் நாம் பார்க்க முடிகிறது. இவ்வாறு ஒடுக்கப்பட்ட, ஓரங்கட்டப்பட்ட, தனிமைப்படுத்தப்பட்ட மனிதர்கள் விளிம்புநிலை மாந்தர்களாக அறியப்படுகின்றனர். விளிம்புநிலை மக்களின் வாழ்வியல் சிக்கல்கள், பெண்நிலைப்பாடுகள், இதற்கான எதிர் குரல்கள் போன்றவற்றைப் தற்கால இலக்கியங்கள் பதிவு செய்து வருவதன் வாயிலாக விளிம்புநிலை மக்கள் பற்றிய செய்திகளை தெளிவாக அறிந்து கொள்ள முடிகிறது. இலக்கியங்கள் தோன்றம் பெற்ற காலத்திலிருந்தே விளிம்புநிலை மக்களின் வாழ்வியல் நிலைகள், சமூகப் போராட்டங்கள் போன்றவற்றைப் பதிவு செய்யப்பட்டு வந்தாலும், விடுதலைக்குப்பின் வெளிவந்த இலக்கிய வகைகளான மரபுக்கவிதைகள், புதுக்கவிதைகள், புதினங்கள், சிறுகதைகள் போன்றவை விளிம்புநிலை மாந்தர்களின் வாழ்வியல் சிக்கல்களை எடுத்துரைப்பனவாக இருக்கின்றன. அவ்வகையில் இரண்டாயிரத்திற்குப்பின் வெளிவந்த கலைச்செல்வியின் சக்கை புதினமானது, நசிந்து போன விவசாயிகள் மற்றும் கோரைப்பாய் நெசவு தொழிலாளர்கள் சொந்த ஊரை விட்டு இடம்பெயர்ந்து, கல் உடைக்கும் தொழிலை செய்து வருவதனைக் குறிப்பிடுகின்றது. இவ்வாறு தொழிலை அடிப்படையாக வைத்து உருவாக்கம் பெற்ற விளிம்புநிலை மாந்தர்களின் வாழ்வியல் நிலைகள் இக்கட்டுரை வழி ஆராயப்படுகிறது.

முன்னுரை

வாழ்க்கையின் குறிக்கோளை இயம்புவதே இலக்கியம். சமூகத்திலுள்ள மனிதனின் வாழ்க்கையைப் படம் பிடித்துக் காட்டுவன இலக்கியங்களாகும். சமூகத்தில் ஏற்படும் மாற்றங்களை நுண்மையாகப் பதிவு செய்வது இலக்கியத்தின் பணியாகும். மனிதகுலம் சந்திக்கின்ற வாழ்வியல் சிக்கல்களை இலக்கியங்கள் பிரதிபலிக்கின்றன. அவ்விலக்கிய வகைகளில் குறிப்பிடத்தக்கது புதினமாகும். புதினங்கள் வாயிலாக ஆசிரியர்கள் சமூகத்திலுள்ள பிரச்சனைகளை மட்டுமின்றி அதற்கான தீர்வுகளையும் எடுத்துக்கூறி மக்களை விழிப்படையச் செய்கின்றனர். புதினங்கள் மனிதனது வாழ்க்கையை மட்டுமன்றிச் சிக்கல்களையும், அதற்கான தீர்வுகளையும் கூறுவனவாக அமைந்துள்ளது. அவ்வகையில் கல் உடைக்கும் தொழிலாளர்களான விளிம்புநிலை மாந்தர்கள் முதலாளி வர்க்கத்தினரால் ஒடுக்கப்பட்டும், ஒரங்கட்டப்பட்டும் ஏழைகளாகவும், அடிமைகளாகவும், அதிகாரமற்றவர்களாகவும், தீண்டத்தகாதவர்களாகவும், மாசுபடுத்தப்பட்டவர்களாகவும் இருக்கின்றனர். இவர்களின் வாழ்வியல் நிலைகளை கலைச்செல்வியின் சக்கை புதினம் வாயிலாக ஆராய்வதே இக்கட்டுரையின் நோக்கமாக அமைகின்றது.

விளிம்பு நிலை மக்கள்

புறக்கணிக்கப்பட்ட மக்கள் பற்றிய ஆய்வுகளை (Subaltern Studies) இந்தியாவில் தோற்றுவித்தவர் ரணஜித் குஹா மற்றும் சூசி தாரு, தேஜஸ்வினி நிரஞ்சனா ஆகியோராவர். 1980 ஆம் ஆண்டு ரணஜித்குஹா மற்றும் அவரது குழுவினரால் அறிமுகம் செய்யப்பட்ட ஒரு வரலாற்று ஆய்வு முறையே அடித்தள மக்கள் ஆய்வு. இது விளிம்புநிலை ஆய்வு என்றும் அழைக்கப்பட்டு வருகிறது. ஆங்கிலத்தில் 'Subaltern Study' என்று கூறுவர்.

விளிம்புநிலை மக்கள் Marginalized people என்று அழைக்கப்படுகின்றனர். இவர்கள் மிகுதியும் கிராமப்புறங்களில் வாழ்கிறார்கள். இம்மக்கள் சாதியினாலும் சமயத்தினாலும் பலவித ஒடுக்குமுறைக்கும் சுரண்டலுக்கும் ஆளாகித் தலைமுறைத் தலைமுறையாத் துன்புற்று வருகிறார்கள். மேலும் இவர்கள் நிலங்கள் ஏதுமற்று வசதி படைத்த உயர் சாதியினரின் கீழ் கூலிவேலை செய்து வாழ்க்கை நடத்துகின்றனர். **"விளிம்பு என்பது வர்க்க**

அடிப்படையிலான வரையறை அல்ல. அது சாதி, பால்,
அரசியல், பொருளாதாரம் எனப் பல்வேறு கூறுகளால்
கீழ்நிலைப்படுத்தப்பட்ட சக்திகளைக் குறிப்பது ஆகும். விளிம்புகள்
எப்போதும் ஒரு ஒப்பீடான கருத்தாக்கம் ஒரு மையத்திற்கு விளிம்பாக
இருக்கும் ஒன்று அதனினும் விளிம்புடன் ஒப்பிடும் போது அது
மையமாக அமைகிறது." (வேல்சாமி, (தொ.ஆ), அ.மார்க்ஸ், (க.ஆ),
விளிம்புநிலை ஆய்வுகளும் தமிழ்க்கதையாடல்களும், ப-21) '
விளிம்புநிலை' குறித்தும் 'விளிம்புநிலை மக்கள்' குறித்தும்
மக்களிடையே பலவிதமான கருத்துகள் நிலவுகின்றன. எனினும்
பொதுவாக 'விளிம்புநிலை' என்பது தொழில் மற்றும் இனரீதியாக
தாழ்ந்து இருப்பதும் 'விளிம்புநிலை மக்கள்;' என்பது தொழில் மற்றும்
இனரீதியாக தாழ்ந்து இருக்கும் மக்களைக் குறிப்பதாகவும்
கருதுகின்றனர். ஆனால் உண்மை நிலை இதுவன்று தொழில் மற்றும்
இனரீதியாக மட்டுமன்று இதுபோன்ற இன்னும் பல நிலைகளில் கீழ்
நிலையில் வாழக்கூடிய மக்களும் இதில் அடங்குவர்.

சமூக ரீதியாகவும், பிறப்பு ரீதியாகவும், இழிவாகக் கருதி,
அவர்களின் உரிமைகளையும் உணர்வுகளையும் நசுக்கி, சமுதாயத்
தளத்தில் ஒதுக்கித் தள்ளப்படும் வர்க்கத்தினர் சார்ந்த மக்கள்
விளிம்புநிலை மக்கள் எனலாம். வாழ்க்கை எனும் தொடர் ஓட்டத்தில்
சமூகத்தால் ஒடுக்கப்பட்டவர்கள், வாழ்வின் விளிம்பிற்குச்
சென்றவர்கள், சமூகத்தால் அங்கீகரிக்கப்படாதவர்கள் சமூகத்தின்
பார்வையில் ஒரு பொருட்டாகவே கவனிக்கப்படாதவர்கள்,
அடக்குமுறைச் சமுதாயத்தில் அடங்கியே உள்ளவர்கள்
ஆணாதிக்கத்தின் பிடியில் சிக்கித்தவிக்கும் பெண்கள், சாதிய
அடிப்படையில் அடித்தளத்தில் உள்ள மக்கள் போன்றோரை
விளிம்புநிலை மக்கள் என வரையறைப்படுத்தலாம்.

கல்லுடைக்கும் தொழிலாளர்களின் நிலை

இல்லாத ஏழைகளின் உயிரையும் உடலையும் உறிஞ்சுவது
ஆதிக்கவாதிகளின் இயல்பாகும். விளிம்புநிலையினராக வாழும்
மக்களை ஆதிக்கவாதிகள் மதிப்புடன் நடத்துவதில்லை. பாட்டாளி
மக்களின் உடல் உழைப்பிற்கு கொடுக்கும் முக்கியத்துவத்தினை
அவர்களின் உணர்வுகளுக்குக் கொடுப்பதில்லை. வேலை செய்யும்
இடத்தில் கொத்துக்காரன் மாணிக்கத்தினால் மரகதம் என்ற பெண்
பாலியல் சீண்டலுக்கு உள்ளாகிறாள். **"பணத்துக்கும் சொகத்துக்கும்**

மயங்காதவங்க யாரு..? கல்லு உடைக்கிற சிறுக்கி நீ... ரொம்பத்தான் பிகு பண்ணிக்கிற... நான் பிச்சைப் போட்டு ஜீவனம் பண்ற உனக்கு என்னாடி அவ்ளோ ஆணவம்... வர்ணும் டி...நீயே வரணும்.. " (கலைச்செல்வி, சக்கை, ப.180) என்ற மாணிக்கத்தின் பேச்சுக்கும், அவன் ஆசைக்கும் இணங்க மறுத்த மரகததிடம் வலுக்கட்டாயமாக அவன் நடந்து கொள்வதனை, **"இந்தா புள்ள என்ன பண்ணிட்டாங்கன்னு இந்த ஊள வுடுற...? இரும்பு மாதிரி பிடித்திருந்த கைப்பிடியை விடாமல் இன்னொரு கைய அவளின் தோள்பட்டையைப் பிடித்து தன் பக்கமாக இழுத்தான்.. "** (கலைச்செல்வி, சக்கை, ப.55) என்று குறிப்பிடும் நாவலாசிரியர் கூற்றில் கல்லுடைக்கும் பெண்கள் பாலியல் தொல்லைக்கு உள்ளாக்கப்படுவதனை அறிய முடிகின்றது. மேலும் கல்லுடைக்கும் தொழில் செய்பவர்கள் தன்னுடைய இளம் வயதிலேயே மிகக் கடுமையாக உழைப்பதால் நாற்பது வயதில் அவர்களுக்கு மூப்புத்தன்மை, இருமல் மற்றும் கைகளில் காயம் போன்றவை ஏற்படுகின்றன. **"கல்லொடச்சு கல்லொடச்சு தேகம் நலிஞ்சு போயிடுச்சே, உளப்புக்கும் ஊதியத்துக்கும் எடவெளி வுளுந்துடுச்சே, வயித்தையும் வாயையும் அடைக்க வளி ஒண்ணும் தெரியலயே, உள்ளதும் நொள்ளையாகி போவதெங்கே புரியிலியே.. "** (கலைச்செல்வி, சக்கை, ப.69) என்ற வரிகள் கல்லுடைக்கும் தொழிலாளர்களின் நிலையினை வெளிப்படுத்துகின்றது.

இதுபோன்று முதலாளிகள், கல்லுடைக்கும் தொழிலாளர்களின் குழந்தைகளைப் படிக்க அனுமதிப்பதில்லை. தொழிலாளிகளுக்கு ரேஷன் அட்டையும் வழங்காது அடிமைப் போல நடத்துகின்றன. வருஷக்கணக்கில் வேலை செய்தாலும் அவர்களுக்கென்று வீடும் கிடையாது. அவர்கள் வாங்கும் கூலி வாயுக்கும் வயித்துக்குமே போதாமல் இருந்தது. **"நாலு பேர போல பள்ளிக்கோடம் போயி நமக்கு அறிவு வந்துச்சுன்னா கேள்வி கேட்போம்முன்னு தானே புள்ளங்க போறந்து நாலு வயசு ஆவறதுக்குள்ள அதுங்களுக்கும் சேத்து அட்வான்ஸ குடுத்துடுறாங்க.. ரேஷன் அட்டை வாங்குனமுன்னா நெலத்த பட்டாப் போட்டுக் கேப்போ மேனுட்டு அங்கு கொடுக்கிற அரிசியை வாங்கி நமக்கு அளந்து குடுக்கிறாங்க. அப்பப்ப நாயத்த கேட்டிருந்தோம்னா இன்னிக்கு அனாதையா ஆயிருக்க மாட்டோம். "** (கலைச்செல்வி, சக்கை, ப.8) என்று

குறிப்பிடுவதிலிருந்து கல்லுடைக்கும் தொழிலாளிகள் படிப்பு மற்றும் அவர்களது உரிமைகள் மறுக்கப்பட்டு அடிமையாக வாழ்வதனையும் அவர்களின் உள்ளக்குமுறலையும் புதினம் வழி ஆசிரியர் சுட்டுகின்றார்.

சமூக ஏற்றத்தாழ்வு

உயர்ந்த நிலையில் கீழ் நிலையில் இருப்பவர்கள் உழைப்பாளிகள் ஆவர். ஒரு பொருளை உற்பத்தி செய்து அதனை விற்பனைக்குரியதாக மாற்றும் தொழிலாளிகளுக்கும், அப்பொருளிற்கும் தொடர்பே இல்லாமல் ஆகிவிடுகின்றது. மாறாக முதலீடு செய்யும் முதலாளி அப்பொருளிற்கு உரியவர் ஆகின்றார். அதன் மூலம் கிடைக்கும் பயனில் அதிகப்படியான பயனைப் பெறக் கூடியவராக இருக்கின்றார். எனவே முதலாளியின் சொத்து உயர்வடைவதாகவும், தொழிலாளியின் நிலை தாழ்வுறுவதாகவும் அமைகிறது. முதலாளித்துவ அமைப்பில் கருவி முதலாளிக்குச் சொந்தமாக இருக்கிறது. ஆகவே தான் உழைக்கும் மக்கள் எப்பொழுதும் இல்லாதவர்களாகவே இருக்கின்றனர். இத்தகைய அடிமைச் சமூகத்தில் மனிதனும் ஒரு பொருளாக்கப்பட்டு விற்பனை செய்யப்பட்டான். இந்த அடிமை வாணிபம் மனித சமூகத்தில் ஆயிரம் ஆண்டுகளுக்கு மேலாக நீடித்தது. இத்தகைய அடிமை நிலையினை சக்கை நாவலும் பதிவு செய்கின்றது. சின்ராசு தன் தாய்க்கு உடல்நிலை சரியில்லாத காரணத்தினால் மருந்து வாங்க மருந்து கடைக்கு செல்கின்றான். இதனைப் பார்த்த கொத்துக்காரன் மாணிக்கம் *"ஏ... ஒங்கம்மா உசுரோட இருந்து இனிமே கல்லடைச்சு காசு சம்பாதிக்க போவுதா...? அது உசிரோட இருக்க இருக்க உனக்கும் நட்டம் எனக்கும் நட்டம்... போனா போவுட்டும் வுடு..."* (கலைச்செல்வி, சக்கை, ப.169) என்ற கூற்று வேலை பார்க்கும் தொழிலாளிகளின் உயிரை துச்சமாக எண்ணும் முதலாளிகளின் மனநிலை புரிய வைக்கின்றது. இதை எதிர்த்து கேள்வி கேட்ட சின்ராசை.. *"நா கால் ஆட்டிக்கிட்டு பிச்ச போடுறத வாலாட்டிக்கிட்டு திங்கிற நாயி ஒனக்கு இவ்வளவு ஏத்தமடா? எப்படி மருந்து கடைக்கு போவேன்னு பார்க்கறன்"* (கலைச்செல்வி, சக்கை, ப.169) என்று பேசி அவனை அடித்துக் கொல்வதனையும் புதினம் பதிவு செய்கின்றது. இதன் வாயிலாக முதலாளி, தொழிலாளிகளுக்கு இடையே சமூகத்தில் இருந்த ஏற்றத்தாழ்வுகளையும், அடிமைப் பட்டிருந்த நிலையினையும்

விளக்கிக் காட்டுவதாய் அமைகிறது. கல்லுடைக்கும் தொழிலில் ஈடுபடும் மக்களின் வறுமையைப் பயன்படுத்திக் கொண்டு அவர்களது உழைப்பை உறிஞ்சி முதலாளிகள் என்ற கொத்துக்காரர்கள் வசதியாக வாழும் வர்க்கமாக இருப்பதனை இப்புதினம் சுட்டிக்காட்டுகின்றது.

தீண்டாமை

தீண்டாமை என்பது பொதுவழியைப் பயன்படுத்தத் தடை, பொதுக்குளத்தைப் பயன்படுத்தத் தடை, கிணற்றில் தண்ணீர் எடுக்கத்தடை, கோயிலில் வழிபடத்தடை, உயர்ந்த இனத்தினரைக் கண்டால் தூரப்போய் விடுதல் எனப் பல வடிவங்களில் காணப்படுகின்றது. இந்நாவலில் முதலாளி இல்லத்தில் நடக்கும் திருமண நிகழ்விற்கு, கல்லுடைக்கும் தொழில் செய்பவர்களை அழைத்து வைத்து வீட்டு வேலையினை செய்து முடிகின்றனர். அதில் தவறுதலாக அவர்கள் வீட்டு சோபாவில் ஒரு தொழிலாளியின் நான்கு வயது பெண் குழந்தை அமர்ந்து விட, அதனைப் பார்த்த முதலாளி வீட்டுப்பெண் **"அடிப்பாவி... போடி...அங்குட்டு... வெவஸ்தை கெட்ட நாயீ... வேலயாளுங்களுக்கெல்லாம் சோபா கேக்குதோ... சோபா... தொறந்து கிடந்தா கண்ட நாயீங்களும் உள்ள நொழைஞ்சுடறதா....? கழிசடை.... கழிசடை..... கொல்லைப்புறக்கதவை ஓங்கி அறைந்து சாத்தினாள்."** (கலைச்செல்வி, சக்கை, ப.26) என்று குறிப்பிடப்படுகிறது. இது போன்று கல்லுடைக்கும் தொழில் செய்யும் விளிம்புநிலை மக்கள் முதலாளி வர்க்கங்களால் தீண்டாமைக் கொடுமைக்கு உள்ளாக்கப்படுவதனை காணமுடிகின்றது.

மாற்றம் ஏற்படுதல்

இயங்கிக் கொண்டிருக்கும் சமூகம் ஒவ்வொரு காலகட்டத்திலும் மாற்றத்தை எதிர் கொண்டு தான் ஆக வேண்டும் என்பது விதியாக நிகழ்ந்து வருகின்றது. இந்த விதியில் முதலாளி, தொழிலாளி இடையிலான முரண்தான் அடிப்படையான காரணமாக அமைகின்றது. கால மாற்றத்தில் கிரசர் மிசினின் வருகையினால் கல்லுடைக்கும் தொழிலாளர்களுக்கு வேலையில்லா நிலை ஏற்படுகின்றது. இதனை அறிந்த தொழிலாளர்கள், தாங்கள் இத்தொழிலுக்கு வர காரணமான சூழலை எண்ணிப் பார்க்கின்றனர். சொந்த ஊரில் மழை பொய்த்துப் போக விவசாயம் செய்ய முடியாது போனது. பிழைக்க வழி இல்லாது கல் உடைக்க வந்தவர்கள்

இவர்கள். "**காலங்காலமா கலப்ப புடிச்ச கையி இது. கல் உடைக்க தெரியாதுய்யா...பசியும் பட்டினியும் வேர் மண்ணை விட்டுவிட்டு வர சொல்லும் வேற்று மனிதனை எதிர்க்கும் மூர்க்கத்தை உண்டிருந்தது. பொறக்கும் போதே கத்துக்கிட்டா பொறக்குறோம். பழக பழக தன்னால வந்துடும்... பசியில சாவுரத வுட ஒழச்சு பொளக்கிலாமுல்ல... என்ன நாஞ்சொல்றது....**" (கலைச்செல்வி, சக்கை, ப.106) இப்போது இங்கேயும் வேலை இல்லாது போனால் தங்கள் நிலை என்னவாகும் என்று எண்ணி வருத்தம் கொள்கின்றனர். இந்நிலையில் கொத்துக்காரன் நாச்சிமுத்து கவுன்சிலரை வைத்து பேச்சு வார்த்தை நடத்துகின்றான். "**நீங்க அத்தன பேரும் நாளு பூரா ஒடைக்கற கல்ல செத்த நேரத்துல அரைச்சுப்புட்டு இன்னும் இன்னும்ங்கும் கெரசரு மிசினு... மிசினு வச்சு ஒடைச்சாதான் இதுக்கெல்லாம் சரிப்பட்டு வரும்... கவுன்சிலர் பேசினார். அதெல்லாம் ஒங்க பாடு... அம்பது அறுபது வருசமா இத தவுர வேற தொழில் பளக்கமில்லா போச்சு... எங்களுக்கு வேற பொளப்ப சொல்லிடு நீங்க ஆவுரத பாருங்க, கூட்டம் குரல் கொடுத்தது.**" (கலைச்செல்வி, சக்கை, ப.129) தொழிலாளர்கள் தங்கள் நிலையைக்கூறி கேட்க, அவர்கள் கடன்பாக்கியை கட்ட வேண்டிய தேவையில்லை என்றும், ஒரு வாரம் நேரம் எடுத்துக்கொண்டு தங்கள் ஊருக்கு திரும்பிவிட வேண்டும் என்றும் ஊருக்குச் செல்ல ஆகும் செலவை கொத்துக்காரன் நாச்சிமுத்து பார்த்துக் கொள்வான் என்றும் கவுன்சிலர் கூற, ஆறு மாதம் பாக்கி கட்ட வேண்டிய தேவை இல்லை என்ற செய்தி மட்டும் தொழிலாளர்களுக்கு புத்தியில் உறைக்க பிழைப்பின் மீது மண் விழுந்ததை யோசிக்க தவறினர்.

ஊர் திரும்புதல்

கல்லுடைக்கும் தொழிலாளர்கள் தங்கள் தொழிலை விடுத்து சொந்த ஊருக்கு சென்று தங்கள் வாழ்வினை அமைத்துக்கொள்ள எண்ணம் கொள்கின்றனர். ஆனால் அதிகார வர்க்கங்களின் சூழ்ச்சியின் காரணமாக அவர்கள் ஊர் களவாடப்படுகின்றது. "**பஸ் பாதைக்கு பக்கத்தில் இருக்கிற இந்தூரு எவங்கண்ணுலயோ பட்டு தொலைஞ்சுடுச்சு.. காரு போட்டுட்டு வந்துட்டாங்க... காசு ஆசைக்காட்டி காலி பண்ண வச்சுட்டானுங்க.. முடியாதுன்னவங்கள ஆளுங்கள வுட்டு மெரட்டி காலி பண்ண சொல்லிப்புட்டு எல்லாத்தையும் இடிச்சு நெரவி பிளாட்டு போட்டு வித்துக்கிட்டு**

இருக்காணுங்க."(கலைச்செல்வி,   சக்கை,   ப.215)   என்ற   கூற்று கல்லுடைக்கும் தொழிலாளர்கள் தங்கள் ஊரை இழந்து நிற்பதனை பதிவு செய்கின்றது.

முடிவுரை

சக்கை புதினம் விளிம்புநிலை மக்கள், உயர் இன மக்கள் என்ற அடிப்படையில் கல்லுடைக்கும் தொழிலாளிகளை அடிமைகளைப் போல நடத்தப்படுவதனை பதிவு செய்வதனை பார்க்க முடிகின்றது. மேலும் அவர்கள் உழைப்பைச் சுரண்டி விட்டு சரியான ஊதியம் தராதிருத்தல், உடல் ரீதியான சிக்கல்களை அம்மக்கள் அனுபவித்தும் அவர்களை மனிதர்களாக கூட மதிக்காதிருத்தல், பெண்களை பாலியல் ரீதியில் கொடுமைக்கு உள்ளாக்குதல், சொந்த ஊரும் இல்லாது அவர்கள் தவித்தல் போன்ற பல இன்னல்களுக்கு உள்ளாகின்றனர். இத்தகைய சூழல்கள் விடுதலைக்குப்பின்னான இக்கால கட்டத்திலும் காணப்படுவதை புதினம் சுட்டிக் காட்டுவதனை அறிய முடிகிறது.

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Peer Reviewed Abstracts of International Conference on
"Indian Knowlwdge System for Sustainable Well-Being"

IKS and NEP 2020

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ABSTRACT

The Indian Education System produced great scholars namely *Aryabhata, Charaka, Susruta, Varahamihira, Bhaskaracharya, Bramagupta, Madhava, Chanakya, ChakrapaniDatta, Oatabhaku, Panini, Nagarjuna, Gautama, Sankardev, Maitreyi, Gargi, Tiruvalluvar* and many others have made seminal contributions to world knowledge in diverse fields of arts, culture, science, architecture and engineering. These legacies to world heritage must be nurtured and preserved for posterity and researched, enhanced and put to appropriate uses through our education system (NEP, 2020)

Para 4.27 of National Education Policy (NEP) 2020 refers to the traditional knowledge of India that is both sustainable and strives for the welfare of all. In order to become the Knowledge power in this century, it is imperative that we should understand our heritage and teach the world the 'Indian way' of doing things. Ministry of Education has established Indian Knowledge System (IKS) Division in AICTE in 2020 with a vision to promote interdisciplinary and transdisciplinary research on all aspects of Indian Knowledge Systems (IKS), preserve and disseminate IKS knowledge for further research and societal applications.

The National Curriculum Framework has a list of 25 areas identified for the Focus Group Papers and Knowledge of India is part of Cross-cutting theme. IKS division of Higher Education Department has established l3 IKS centres in different parts of lndia. The IKS centres have been established for research, education, and outreach activities through Research Program across the country under wide categories of subject such as Science, Engineering, Technology, Health and wellness through Ayurveda, Yoga, Naturopathy, Psychology, Linguistics, Phonetics, Epistemology, Language technology, Management, Administration, Law, Governance, Literature, Education, Philosophy, Indian Classical Music, Drama arts & Aesthetics and Folk culture, Environment and ecology and their preservation, Intellectual Property Rights (IPR) in Indian traditions, Indian Traditional Knowledge Base.

Key words: World Heritage, Traditional knowledge, transdisciplinary, IPR, NEP

Reference: Ministry of State for Education.

SUSTAINABLE DEVELOPMENT GOALS AND INDIAN KNOWLEDGE SYSTEM

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ABSTRACT

The Sustainable Development Goals (SDGs) are a set of 17 global goals adopted by all United Nations Member States in 2015 as a part of the 2030 agenda for Sustainable Development. These goals are aimed at addressing various social, economic and environmental challenges to ensure a more sustainable and equitable future for all. India, like many other countries, aligns its development initiatives with these global goals. The overarching aim is to promote prosperity while protecting the planet and ensuring that no one is left behind. Each goal has specific target and indicators to measure progress. The 17 SDGs are as follows: No Poverty (SDG 1), Zero Hunger (SDG 2), Good Health and Well-Being (SDG 3), Quality Education (SDG 4), Gender Equality (SDG 5), Clean Water and Sanitation (SDG 6), Affordable and Clean Energy (SDG 7), Decent Work and Economic Growth (SDG 8), Industry, Innovation, and Infrastructure (SDG 9), Reduced Inequality (SDG 10), Sustainable Cities and Communities (SDG 11), Responsible Consumption and Production (SDG 12), Climate Action (SDG 13), Life Below Water (SDG 14), Life on Land (SDG 15), Peace, Justice, and Strong Institutions (SDG 16), Partnerships for the Goals (SDG 17). These goals are interconnected and progress in one area often depends on progress in others. They provide a comprehensive framework for addressing the complex challenges, facing the world and promoting a more sustainable and equitable future. Countries, businesses and civil society are encouraged to work collaboratively to achieve these

goals by 2030. The Indian knowledge system is a vast and diverse repository of knowledge that has evolved over thousands of years. It encompasses a wide range of disciplines, including philosophy, science, mathematics, medicine, astronomy, literature, and art. Art and music are integral components of the Indian knowledge system, deeply intertwined with the country's cultural, spiritual, and philosophical heritage. It's important to note that the Indian knowledge system is not static; it has evolved over time and continues to adapt to contemporary challenges. The integration of traditional wisdom with modern knowledge is a topic of ongoing discussion and exploration in various fields. Art and Music in the Indian knowledge system are not just forms of creative expression; they are pathways for exploring and transmitting profound philosophical, spiritual, and cultural insights. They serve as bridges connecting individuals to their heritage, spirituality, and the broader tapestry of human experience. In summary, India's rich tapestry of traditional knowledge can significantly contribute to the achievement of the Sustainable Development Goals by providing sustainable and culturally relevant solutions to complex challenges. Integrating and respecting indigenous knowledge systems is crucial for creating a more inclusive and sustainable future.

Keywords: Sustainable Development Goals, global goal, promote prosperity, Indian Knowledge System, 2030 agenda, traditional wisdom, modern knowledge.

FUTURE PROOFING WITH MINDSET AUDITING –THE ABILITY TO CHANGE, GROW, INNOVATE AND TRANSFORM IN THE NEW NORMAL - PEDAGOGICAL DIGITIZATION

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ABSTRACT

Future proofing is the attempt to make something impervious to the challenges that it is likely to encounter as time passes by. The Covid-19 pandemic has presented an opportunity for rethinking assumptions about education in general and higher education in particular. In the light of the general crisis the pandemic caused, especially when it comes to the so-called emergency remote teaching (ERT), when educators from all grades and contexts experienced the necessity of rethinking their roles, the ways of supporting the students' learning tasks and the image of students as self-organizing learners, active citizens and autonomous social agents. In this paper, we ask ourselves: This paper addresses the emergent need to strategically evolve a system in the heart of post-pandemic practices, towards Future Proofing Higher Education with the Mindset to build & evolve a robust, and agile system, a protective bubble with learning's from ERT, Emergency Remote Teaching, duly acknowledging that Learning does not happen in Emergency Mode.

Keywords: Balancing Technology, Pedagogy, Higher Education, Emergency remote teaching.

TRAFFIC MANAGEMENT IN REAL TIME THROUGH BIG DATA ANALYTICS BASED ON INDIAN KNOWLEDGE SYSTEM

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ABSTRACT

In today's hectic environment, road systems have emerged as a critical societal issue. It is necessary for transportation networks to become more efficient and safe. Since there are many various types of automobiles on today's roadways, it is alarming to recognize this circumstance. As a result, using the dynamic information: turning action, traffic movement, and vehicle arrival. In this study, we generate prototypes for the various above-mentioned prototype activities and apply Real Time Traffic Control may use the Big Data ideas. Three prototypes are created them to the microscopic traffic simulation task. Since the performance of the aforementioned prototypes will be significantly influenced by the kind of traffic, the layout of the highway, and the optimization strategy used to regulate it, we will also be researching the benefits and drawbacks of various imitation optimization strategies. We will also examine the benefits and drawbacks of different imitation optimization strategies, as the way the aforementioned prototypes operate will be significantly influenced by the kind of traffic, how the roads are laid up, and the optimization strategy employed to manage them.

Keywords: Prototype, Optimization and Big Data

A STUDY ON IMPACT OF AYURVEDA AND YOGA IN 21st CENTURY

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ABSTRACT

This study looks at how Ayurveda and yoga have impacted society in the 21st Century. Ayurveda and yoga offer two approaches for removing diseases and regaining health. They are becoming more widely acknowledged as potential paths to recovery, especially for chronic illnesses that would otherwise be incurable. It is demonstrated by the COVID-19 pandemic, which has grown to be a significant worldwide concern, particularly for the health industry. In this case, enhancing host immunity is crucial from a public health standpoint in order to stop the spread of infection and reduce the agent's potency. Both yoga and ayurveda have the ability to improve host immunity, lessen the severity of an infection, and aid in recovery from treatment. his review aims at collating available evidence on Ayurveda, Yoga, and COVID-19. Furthermore, it extrapolates conclusions from recent research on the effects of Ayurveda and yoga on immunity, respiratory health, and mental health, respectively, to estimate their potential roles in prophylactic and as supplemental care options for the ongoing epidemic.

Keywords: Ayurveda, Yoga, Immunity, Pathogen, Health

A STUDY ON INFLUENCE OF RAMAYANAM IN INDIAN KNOWLEDGE SYSTEM

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ABSTRACT

The influence of the Ramayana, an ancient Indian epic, extends across diverse aspects of culture, literature and religious thought. This explores the enduring impact of the Ramayana on shaping moral values, societal norms and storytelling traditions. This article explores the profound impact of the Ramayana on Indian Knowledge System, shedding light on its role in shaping moral, ethical and spiritual ideologies. The character of Lord Rama exemplifies Dharma (righteous duty), portraying an ideal ruler, husband and son. The epic instills a sense of duty and morality, influencing societal norms and individual's behaviour. The Ramayana serves as a reservoir of cultural and moral values, providing a framework for righteous living. The Ramayana influence extends to the socio – political sphere, where it has shaped governance principles and administrative ethics. Examining its impact on literature, arts and socio political thought, it illuminates how the epic continues to serve as guiding force, imparting timeless wisdom and ethical reflections to generations contributing significantly to the Indian Intellectual Heritage.

SMART TEXTILES -NEW POSSIBILITIES AND APPLICATIONS IN TEXTILE ENGINEERING

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ABSTRACT

In the twenty century, product development has progressed tremendously in every field of engineering and technology. Textiles are not lagging behind on the race of such development. Smart textiles are the most exciting innovation in the field of textiles and clothing. Smart textiles can sense and analyze the signals and response in an intelligent way and the response can be electrical, thermal, mechanical, chemical, magnetic or from other source. Now it is not seen only in the Hollywood movie, it is not limited in our fantasy; it comes in our practical life with tremendous possibility. It is now widely used in various fields like healthcare and safety clothing, firefighting clothing, intelligence clothing, military clothing, e-textiles, bio-medical application, sports clothing, protective clothing, space exploring activities and so on. So it can also be called the next generation clothing. This study aims to present the overview of smart textiles, its types and functions. Current smart textiles products and their applications as well as market overview of smart textiles have also been discussed.

Keywords: Textiles, Clothing, Smart textiles, Interactive textiles, Sensors.

MINDFULLNESS AND ACADEMIC PERFORMANCE: THE ROLE OF MEDITATION AND STRESS MANAGEMENT AMONG COLLEGE STUDENTS IN PALAYAMKOTTAI TALUK

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ABSTRACT

Mindfulness refers to the state of being fully aware of one's thoughts, feelings, and surroundings and engaging in the current moment without judgement or distraction. This study investigates the relationship between mindfulness practices, specifically meditation and stress management techniques, and their impact on academic performance among college students. Through a comprehensive exploration of these factors, we aim to discern the potential positive effects of mindfulness on academic achievement. We hypothesise that mindfulness positively relates to academic performance and that this relationship is mediated by meditation and effective stress management techniques. Employing both quantitative and qualitative methodologies, this research reveals insight into how mindfulness interventions can contribute to enhanced stress resilience and improved academic outcomes. The findings hold implications for educational institutions seeking holistic approaches to support student well-being and academic success.

Key words: mindfulness, academic performance, meditation, college students, mindfulness .

ANCIENT INDIAN EDUCATIONAL INSTITUTIONS

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ABSTRACT

Education is a platform in which young generations are trained and make them future-ready. Education provides knowledge and skills which help the person to be employable. The Indian education system is very popular and diversified among other countries' education systems due to its change in the evolution from ancient to the modern education system. During the ancient and medieval periods of education, students were trained by teachers in such a manner that they can survive and live in that era. After independence, there is a tremendous growth in the Indian education system providing teaching and training in all aspects, but it does not satisfy the global demands of the market. The mentioned points are used to differentiate ancient, medieval, and modern education with advantages and disadvantages. In ancient India, both formal and informal ways of education system existed. Indigenous education was imparted at home, in temples, pathshalas, chatuspadis and gurukuls. Temples were also the centers of learning and took interest in the promotion of knowledge of our ancient system. Students went to viharas and universities for higher knowledge. Teaching was largely oral and students remembered and meditated upon what was taught in the class.Gurukuls, also known as ashrams, were the residential places of learning. Many of these wernamed after the sages. Situated in forests, in serene and peaceful surroundings, hundreds of students used to learn together in gurukuls. Women too had access to education during the early Vedic period. Among the prominent women Vedic scholars, we find references to Maitreyi, Viswambhara, Apala, Gargi and Lopamudra, to name a few. India is recognized to be one of the oldest civilizations in the world. India was a center for higher learning in ancient times. India contributed greatly to the field of Mathematics, Astrology, Astronomy, and other sciences. Vedic science was so advanced that it could be compared with the present day's scientific inventions. Education held great significance in Indian society since the Vedic period. Gurukuls and ashrams were the main centers of learning. Many universities flourished in ancient India, including the world-famous Takshashila and Nalanda universities. Students from far-off regions including foreign lands used to come to study in India's old universities. These universities in ancient India are true examples of our glorious past.The Indian subcontinent has a long history of education and learning from the era of Indus Valley civilization. Important ancient institutions of learning in ancient India are Takshashila, Kashmir Smast, Nalanda, Valabhi University, SharadaPeeth, PushpagiriVihara, Odantapuri University, Vikramashila, SomapuraMahavihara, BikrampurVihara, JagaddalaMahavihara.

A STUDY ON INDIAN CONCEPT OF EDUCATIONAND INDIAN KNOWLEDGE SYSTEM

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ABSTRACT:

This study delves into the rich tapestry of the Indian concept of education and knowledge systems, tracing their historical roots and exploring their contemporary relevance. The traditional Indian education system, deeply rooted in ancient scriptures like the Vedas and Upanishads, embodies a holistic approach that integrates spiritual, moral and intellectual dimensions. The study examines the Gurukul system, emphasizing the guru-disciple relationship and its impact on character development. The study also investigates the adaptability of the Indian education system in the modern era, considering the challenges and opportunities presented by globalization and technological advancements. It seeks to understand how traditional principles can be synergized with contemporary educational practices to cultivate a well-rounded, culturally grounded, and globally aware citizenry. Through a multidimensional approach, this study aims to contribute to the broader discourse on education, offering insights into the unique characteristics of the Indian educational philosophy and its potential implications for fostering holistic learning in a rapidly evolving world.

Keywords: intellectual, philosophy and scriptures

A STUDY ON MAHABHARATA IN INDIAN KNOWLEDGE SYSTEM

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ABSTRACT

The Vedas of Puranas along with great epics, the Mahabharata Constitute the solid and enduring foundation of age long and magnificent of Indian culture and civilization. The ever-lasting appeal of these treatises still influences to a great extent the culture life and behavior pattern of crores of Indian. Mahabharata is considered as a best epic in India. Over the years, different authors from different backgrounds have tried to explore these epics from various aspects. But among all these aspects management. A business strategy is the means by which it sets out to achieve its desired goal. Strategies are also concerned with deciding what product to allocate major resources or ensure given challenges. The epics are the pride of Hinduism. But comparing them would be like comparing chalk with cheese. Though both send a similar message yet they have a contrasting character and nature of handing their subjects. There is many learning that can be done based on such epics and many can still be compared to various events happenings in corporate world today.

KEYWORDS: Indian-culture, epic, leader, Management Effectiveness and philosophy.

BLOCK CHAIN MECHANIISM AND SKILL VERIFICATION SYSTEM IN INDIAN KNOWLEDGE SYSTEM

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ABSTRACT

Many people make claims about their abilities, and organizations frequently take these statements to be true. Employing someone with false credentials or the incorrect skill set can cost businesses a lot of money. A decentralized consensus-based skill verification system can be used to solve this issue by objectively and openly validating skills. This approach can significantly cut down on the time and resources recruiters spend conducting competency and skills assessments by utilizing blockchain technology. Additionally, it boosts management's self-assurance and output within a company. Employees are able to present proof of their abilities that has been formally recognized or endorsed by their prior managers or credential providers by documenting and validating their talents on a safe and easily accessible network. Employees can also be guaranteed openness and responsibility in their skill development using a blockchain-based skills chain. This can help businesses hire more intelligently and use employees to the utmost extent possible for particular business needs.

Keywords: Skill Verification, Blockchain, DAPP, EV

INDUSTRY INNOVATION AND INFRASTRUCTURE ON SUSTAINABLE DEVELOPMENT GOAL

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ABSTRACT

The Sustainable Development Goal 9 (SDG 9) emphasizes the crucial role of industry, innovation, and infrastructure in fostering economic growth, job creation, and sustainable development. This abstract provides a concise overview of the key aspects surrounding industry innovation and infrastructure within the context of SDG 9. The industrial sector is a cornerstone of global economic progress, but traditional practices often lead to environmental degradation and social inequalities. Addressing these challenges requires innovative approaches that balance economic growth with environmental sustainability and social inclusivity. Innovation plays a pivotal role in transforming industries towards sustainability. Technological advancements, research and development, and the adoption of green practices contribute to creating more resource-efficient and environmentally friendly processes. Additionally, fostering a culture of innovation within industries can lead to the development of new business models and solutions that align with the principles of sustainability. Infrastructure development is a linchpin in achieving sustainable development goals. Adequate and resilient infrastructure is essential for economic activities, social well-being, and environmental conservation. Investments in smart, inclusive, and sustainable infrastructure contribute not only to economic development but also enhance societal resilience in the face of challenges such as climate change and natural disasters. Public-private partnerships are instrumental in driving industry innovation and infrastructure development for sustainability.

Key words: Sustainable Development Goal, Industry innovation and infrastructure, Economic growth.