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Index

Proceedings of the
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Performance Analysis of Neural Networks in Deep Learning in Detecting Brain Tumors

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ABSTRACT:

The most common complications of brain are tumors those can be fatal or severely devastating. Successful patient treatment can result from early diagnosis of brain tumors, especially at an early stage. Several diagnosis techniques have been put out in this area, but the deep learning Artificial Neural Network (ANN) and Convolutional Neural Network (CNN) methods based on brain Computational Tomographic image scans have received a great deal of attention. This is comparative study to analyze the accuracy, sensitivity, and error rate of ANN and CNN based deep learning methods for diagnosing brain tumors.

Keywords: Artificial Neural Network, ANN, Convolutional Neural Network, CNN, Deep Learning, Brain Tumors

1. INTRODUCTION

Any mass that develops from the brain's aberrant and uncontrolled cell proliferation is referred to as a brain tumor. Tumors inside the cranium or in the central spinal canal are both examples of brain tumors [1]. In the UK, 200 more tumor forms are typically diagnosed yearly [2]. One of the greatest methods available now for detecting brain tumors is Computer Tomographic (CT) Scan, which produces more precise images. Nonlinear interactions can be modeled using conventional statistical techniques, although doing so requires considerable and complicated mathematical modeling. Typically for this analysis, neural networks offer a significantly simpler method. When presented with new input outside of its training set, a neural network that has been properly designed and trained is capable of making decisions. Radiologists now have the opportunity to enhance their performance through automatic techniques like Artificial Neural Networks and Convolutional Neural Networks because to advancements in digital image processing.

2. MATERIAL AND METHODS

The technique of segmenting an image involves breaking it up into several pieces. Usually, this is done to detect objects or other important details in images. Threshold based segmentation approach uses a onset value to convert a binary image from a grayscale image. In order to identify certain things, identified image edges are taken to represent object precincts are used in Edge based segmentation. An edge-based strategy would try to detect the object precincts before flinging them to locate the object itself in region-based segmentation, Clustering referred to methods mostly employed in information extraction of higher - dimensional measurement patterns.

The ideal way to conceptualize artificial neural networks is as values digraphs, where the nodes are represented by artificial neurons and the connections between their inputs and outputs are shown as directed weighted edges. The input signal for the artificial neural network comes from the outside world as a pattern and vector picture. The associated weights are then multiplied by each input. In a broad sense, these weights often reflect how strongly neurons are connected inside an artificial neural network. Inside the computational unit, entirely the weighted inputs are added together. The collection of allocation functions utilized to achieve the utmost output is generally referred to as the activation function. The two most common activation functions are linear or non-linear functions. The binary, Tan hyperbolic sigmoidal is non-linear, and sigmoid is linear activation functions are some of the employed sets of activation functions.

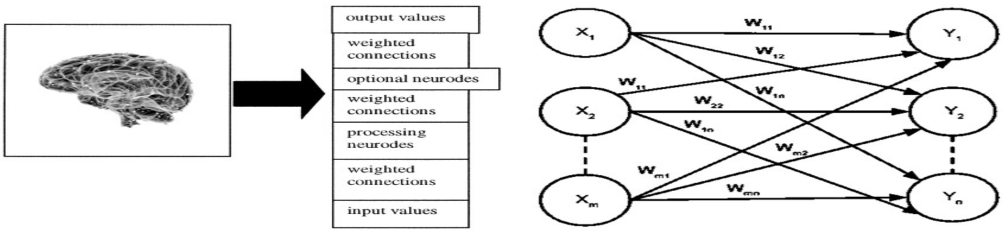

Figure 1 – Specimen Artificial Neural Network Architecture

A vast number of artificial neurons, also known as units, are placed in a hierarchy of layers in a conventional neural network. Artificial neurons that are meant to accept input from the outside environment are found in the input layers. The network's true learning takes place here. Units in the output layers react to the data input into the system and to whether it has learnt any assignments or not. The hidden layers are described amongst the input and the output layers. A hidden layer's only function turns the input into the output layer or unit may use.

Preparing the data, the most crucial component of the overall model that has to be run needs to be meticulously gathered or taken. It is preferable to use a dataset that is already publicly available because the gathering procedure is not a simple operation. The dataset is derived from brain CT Scan images with the purpose of detecting brain tumors. Figure 1 is describing about the six different types of brain tumors. The result of the model, or the correctness of the model, is significantly influenced by the preprocessing. To create a perfect dataset, the features and characteristics has some variability and variances that need to be identified and corrected. The fundamental building blocks of the model that was utilized are its features since without them, there would be no determining reason for prediction, which would lead to very low accuracy. Figure 2 is plotting the malignant and nonmalignant brain tumors. Therefore, the more features, the higher the accuracy and the better the model would perform.

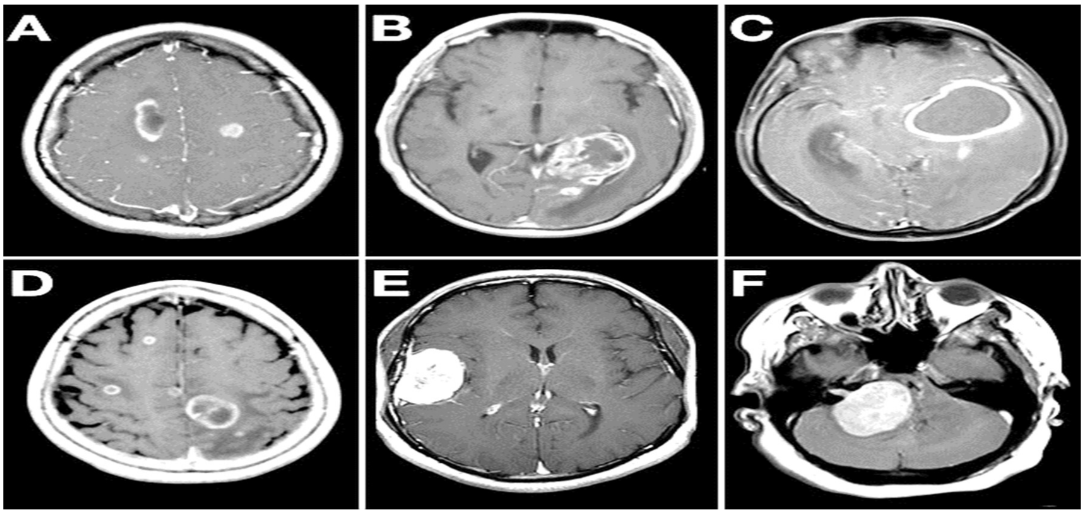

Figure 2 - Six ring enhancing brain tumors

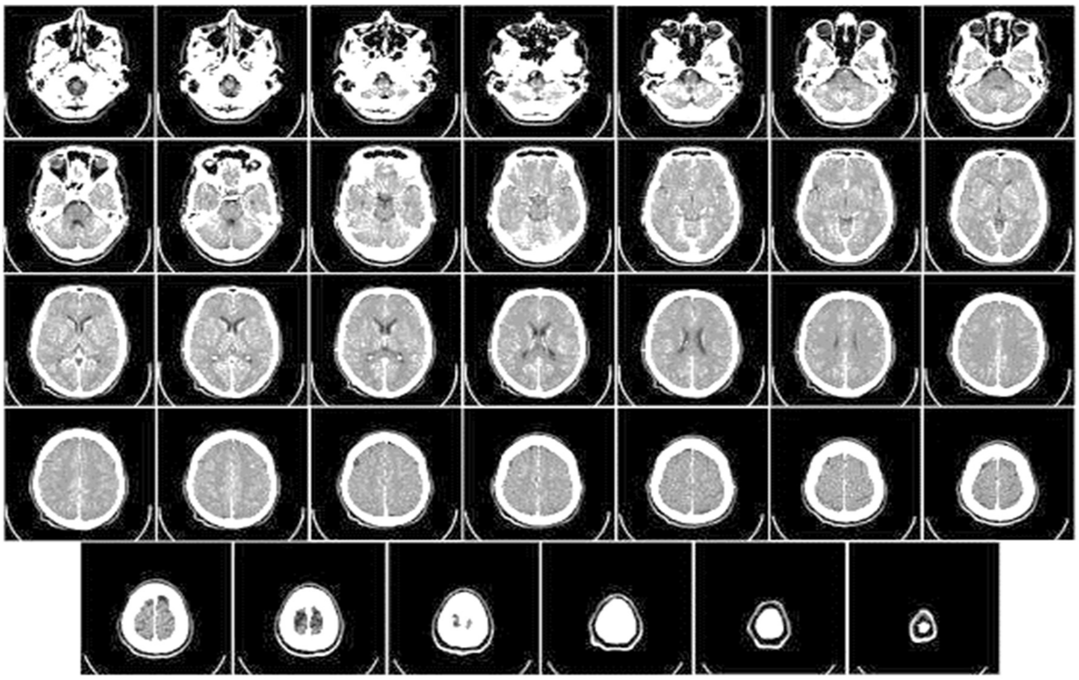

Figure 3 - Malignant and Nonmalignant brain tumors

Artificial neural networks function similarly to the biological systems that served as their inspiration. The connections between the neurons may be seen as weighted directed graphs, with the neurons serving as the nodes and the connections between the neurons serving as the edges. Figure 4 is an illustration of how different activation functions in neural networks is working in accordance to neurons [3].

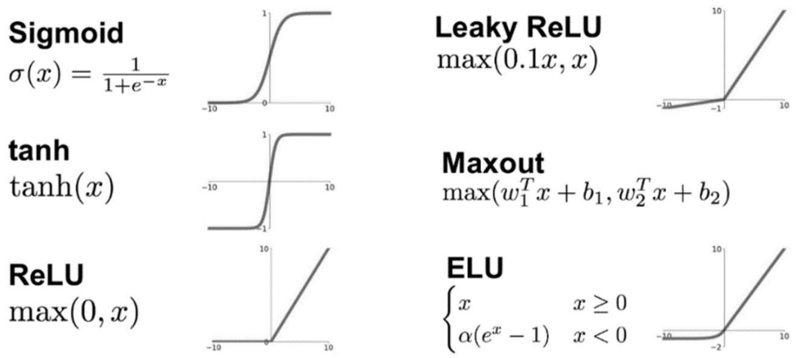

Figure 4 – Activation Functions

An original paradigm for convolutional neural networks (CNNs), a distinctive machine learning organization, was the graphical brain of human [4]. Convolutional Neural Network operate by taking an input, convoluting it with a kernel, and then producing an output. First, a dataset is used to train the network. The way this training data operates is by repeatedly iteratingover the training dataset, measuring the results, or adding a preference to the artificial neurons centered on thoroughly the results match the predicted results. The biases alter with each iteration in order to finally provide a result that is reasonably near to the desired outcome [5].

The two components of a typical CNN model are feature extraction and classification. The input, convolution, pooling, fully-connected, and classification layers are the five key layers of a CNN architecture. Through successively layers those can be trainable are arranged consecutively, CNN conducts feature extraction and classification. Convolutional and pooling layers are often included in the CNN's feature extraction portion, whereas fully-connected and classification layers are included in the CNN's classification portion.

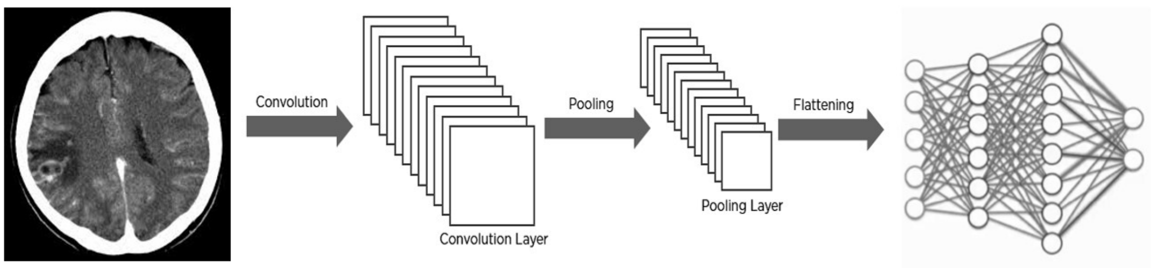

Figure 5 - Specimen Convolutional Neural Network Architecture

In a CNN, numerous hidden layers aid in data extraction from a picture. Figure 5 describes the convolutional neural network Architecture. CNN's four key layers are Convolution, ReLU, Pooling and Totally connected layers. Multiple filters work together to perform the convolution action in a convolution layer. Each image can be assumed of as a pixel matrix. The rectified linear unit is referred to as ReLU. The further phase is the feature maps to be transferred to a ReLU after the retrieval. Non linearity to be introduced to the network, and the produced output is a feature map with rectification. The down-sampling process of pooling lowers the feature map's dimensionality. The rectified feature map is passed through a layer of pooling to create a pooled feature map.

3. CONCLUSION

Automated tumor detection continues to be a significant field of study for Artificial Neural Network and Convolutional neural networks. This paper offers a fundamental overview that enables the reader to be well-versed in the field of automated detection. The CNN model applies the testing data with an accuracy of 89%. When comparing the effectiveness of ANN and CNN in detecting the existence of brain tumors using precision, recall, and f1 scores, CNN emerges as the best supporting technique because it has the highest precision value. The CNN currently outperforms other methods in predicting the existence of brain tumors for the dataset.

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Evaluation of Training Effectiveness in the Solar Energy Sector Using Kirkpatrick's Model

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ABSTRACT:

The imminent need for clean and affordable energy has seen the emergence of renewable energy technologies on a massive scale across the world in recent times. Solar energy's abundance, ease of harnessing and deployment makes it a particularly suitable source of renewable energy in the tropical regions.

A systematic literature review conducted in this field has revealed that the training facilities in the solar energy sector have not been given adequate importance in comparison with the technological advancements in the field. This may be attributed to various factors such as continued dependence of energy utilities and customers alike on traditional fossil fuel-based energy generation, deficiency in public awareness, policy negligence by governments and the need for a broad-based approach towards ensuring that adequate number of skilled and talented employees are recruited and trained in the state-of-the-art solar technologies. The recent spurt in the solar energy-based industries has underlined the need for governments and managements of solar companies to invest in educational and training activities. The effectiveness of learning and development processes has assumed importance in this context. This research is significant and new in the light of the fact that very few researchers have focused their attention on the quality of training imparted in the solar energy sector, during an era of digital transformation.

Kirkpatrick's model is a popular method used to evaluate the effectiveness of educational and training systems. Numerous advantages of this model make it particularly suitable for assessing the effectiveness of training imparted to solar energy. The simplicity of the process, need for measurement of only a few variables, comprehensibility of evaluation considerations, a diminished necessity to compile basic information on the past performance of trainees and independence of variables, have led to the choice of Kirkpatrick's model appropriate model for this research. Kirkpatrick's model is used to evaluate the effectiveness of training programs at four levels viz. reaction, learning, behavior and results. Using a structured questionnaire, the research elicits data from respondents who are associated with the solar energy sector and the model is applied to evaluate the effectiveness of the prevailing training methods.

Keywords: *Kirkpatrick's model, solar energy, training, evaluation, reaction, learning, behavior, results*

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A Study of Artificial Intelligence for Sustainable Business Management and Sustainable Development Goals

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Artificial intelligence

Artificial intelligence is more than just a buzzword. From driverless trucks traversing the country to AI winning "unwinnable" games, it's already making an impact on our home lives and will soon play a much greater role in our work lives. The potential applications of artificial intelligence excite forward-thinking managers, who see the opportunities AI will provide to advance careers and business results faster. Artificial intelligence in business is a breakthrough that can enable good managers to be great.

The applications of artificial intelligence in business are many, from improving relationships with employees and customers to finding patterns in extreme data volume to performing repetitive tasks. These should be a great benefit to most managers as it means they should have more time to focus on how they add value to their organization. The key is to embrace the opportunity artificial intelligence in business presents for individual and organization success, including scaling your skills and using AI to scale your impact.

Enabling Data-Driven Management

Compared to humans, AI is able to crunch numbers, identify patterns, and make faster data-driven decisions. With the ability to process large amounts of data and spit out trend directions and actionable advice, this application of artificial intelligence can be a vital tool for any manager looking for some quantitative support in their decision-making. In fact, computers can be so good that in financial services, 40% of predicted layoffs in the industry will be in money management, as robo-advisors replace human fund managers.

That might sound like bad news but not for those who spot the silver lining. Now is the time to scale your skills to take full advantage of richer, faster data — especially if the bulk of your time today goes to gathering, triaging, compiling and reporting data to identify risks, issues and status.

If you spent zero time on these basic information tasks, how much faster could you drive results, where would you allocate time and what skills will you need? By learning how to work with AI and using the advice it can provide, you can adapt and improve your career options and value to the organization.

Across the globe, environmental sustainability is emerging as a business imperative with several countries facing the impacts of climate change. It is a simple nous there cannot be successful economies alongside environmental degradation. But developing environmental sustainability also presents risks that can affect the operating models of companies, with a bearing on business prospects in a highly competitive marketplace.

To become truly sustainable, companies must adopt measurable goals. These encompass key areas to foster conservation and biodiversity; companies can set aims to reduce water withdrawals on a year-on-year basis at office locations. They could source paper and wood-based packaging from sustainably managed forests while those planning construction projects could opt for third-party sustainability certifications.

Technology can be an aid in key mitigation areas. Green energy consumption and reducing energy-related emissions are critical in climate change mitigation. Companies should begin to obtain a share of their electricity needs from renewable sources now. They can set goals for the next five and ten years to gradually increase renewable energy in the overall consumption mix.

Companies owning data centers should also consider improving their average cooling efficiency the metric for maintaining an ideal temperature that ensures companies can fully harness the power of their processors over a short-term horizon. Upgrading their servers can also help companies reduce power consumption per unit of delivered work

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In supply and value chains, companies should encourage suppliers to set goals for energy and waste management and greenhouse gas emissions reduction. They should guide suppliers particularly in emissions-intensive sectors like transportation and manufacturing to set reduction goals as per the UN's Intergovernmental Panel on Climate Change.

Companies can also use emerging technologies to curtail their environmental impacts while delivering better business results they can leverage Artificial they can leverage Artificial Intelligence and hybrid multi cloud to integrate data across their ecosystem and gain faster insights for building more accurate environmental models. These can help optimize business processes and resource consumption while minimizing wastage and pollution.

To illustrate, an AI-infused intelligent fulfilment platform can undertake reverse logistics to enhance the process of return sorting, product re-merchandising and repair lifecycle tracking, reducing the environmental impacts of returned goods. The global fashion industry sees 40% of all online purchases returned this is both expensive and creates significant additional transportation emissions.

Using AI innovation to achieve the SDGs

Today's age of digital technology drives remarkable advancements at phenomenal speed. In areas such as healthcare, agriculture, schooling, and transport, AI innovation will enable humans to leverage vast quantities of data and make ground-breaking advances. We are also seeing how AI-enhanced computing can enable physicians to eliminate medical errors, increase yields for growers, tailor training for students, and unlocated researchers.

Many factors affect the sustainability. One of them is quick technological progress, considered as powerful engine of economy. It provides benefits for humanity, but contributes also to Planet Crisis with waste generation, energy consumption, cooling data centres and depletion of scarce metals. The majority of computers, smart phones, IoT and other electronic devices are mostly not eco-designed and even integrate a principle of planned obsolescence.

Consequently, they are thrown away and replaced by the latest model. Not conceived with knowledge approach, the consecutive layers of software and frequent update for various reasons increase already existing "obesity" and creating a need for more powerful computers. The combination of various communicating software requires "up-to-date" hardware to run correctly.

The third hype of AI has been triggered by marketing needs to sale more and quicker to largest public. The involved companies collect all available data in aim to elaborate the models and selected algorithms to generate "client experience" among others. The advertisement companies explore the navigation data and "client experience" in aim pushing not always targeted advertisement to large population of the Internet users.

It generates not only carbon footprint, but also visual pollution and certainly influences concentration.

Advertisement-based business model, invented by Google influences and mass media promote the "buy more" and "to have more and to show" mentality. "Buy more, throw away and buy new" are the engines of today business. The demand for data scientists, especially in marketing is increasing, which is good for employment.

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Over Viewing the Importance and Role of Entrepreneur in Modern Economy and Entrepreneurial Motivation Theories

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ABSTRACT:

Growth of entrepreneurship has been considered as a priority area in development policy in various nations in recent years, most notably India. Small and medium-sized firms (SMEs) run by young entrepreneurs span many sectors, from paper and electronics to engineering and electricity to textile and metal welding to construction and the manufacturing of food and training. Women in rural and semi-urban settings, in particular, get more economic opportunity when they pursue entrepreneurial endeavors. The area's potential for industrial and economic growth improved as a result of the economy's evolution. More entrepreneurs are needed in the area so that new companies may be started and existing small and medium-sized enterprises can grow. This Article provides an Overview of the Role and Importance of Entrepreneurs in Today's Economic Environment, as well as a Survey of the Major Theories Concerning What Drives Successful Entrepreneurs.

Keywords: Entrepreneurship, economy, Business, Young businesses, Modern Economy

I. INTRODUCTION

An entrepreneur must take on multiple hats. Scholars have placed entrepreneurs in a variety of positions dating back to the eighteenth-century work of Cantillon (1730). The functions of a risk taker, resource organizer and allocator, decision maker, industry leader, business owner, employer, and so on are all part of this sphere. Economists of the modern era define an entrepreneur as a businessperson who is ready to take on the responsibility of coordinating the numerous elements of production, managing the business in its various aspects, taking on risk, and operating the company for maximum profit. The three broad functions of an entrepreneur are risk taker, organizer, and creator.

II. ENTREPRENEURSHIP

The French term 'entreprendre' is whence we get the English word 'entrepreneur.' As a verb, it implies 'to take on.' Simply said, an entrepreneur is someone who is prepared to 'undertake' the risks associated with starting and running their own firm in the hopes of making a profit. Entrepreneurs are the people who turn ideas into reality. Entrepreneurship refers to the mindset of someone who is willing to take the lead in developing innovative solutions to problems in their field, both technologically and socially. A person's philosophy, morality, beliefs, perspective, etc., all contribute to how they think about and feel about the world around them, including the people, things, events, actions, and ideas they encounter. Thus, entrepreneurship may be seen as a philosophy or manner of approaching one's work and personal life. Entrepreneurship as a concept has evolved over the last several decades. Until the beginning of the 19th century, an entrepreneur was seen as someone who took calculated risks, faced down unknowns, and founded a successful enterprise. However, modern entrepreneurs willingly take calculated chances in order to boost their businesses' bottom lines. They do this by developing novel approaches to allocating limited resources and creating cutting-edge goods and services.

It was in 17th- and 18th-century France when the term 'businessman' first appeared. The idea contractor has shown a robust correlation with the conventional wisdom around the genesis of a business, which has historically carried great weight. The focus, however, has shifted to an economy where high returns may be achieved by increasing competition. Small and medium-sized firms have contributed significantly to the expansion of the economy in recent years, and this has piqued the curiosity of many.

The spirit of enterprise is the key that unlocks the engine of national development. Sustaining the inherent independence of a person is a strong key to economic success that plays a vital role in industrialized nations. Many people's livelihoods are supported by small and medium-sized enterprises. Moreover, as a fundamental player in the process of local economic development and restructuring of national economies, small enterprises also participate. Women's entrepreneurship in India has flourished only in the past three decades. As the world economy struggles with imbalances brought on by interconnected economies, the role of entrepreneurship has risen steadily in the modern era.

Enterprises' position is not only confined to company formation, but also encompasses the development of capital, employment and income capacities, which are the most evident signs of economic progress. The lack of or inadequate availability of entrepreneurs, not shortage of natural capital, leads in an underdevelopment of a country.

2.1 Factors Influencing Entrepreneurship Development

The entrepreneurship development depends upon various factors and determinants. To facilitate the study, the factors influencing entrepreneurship development as follows:

Entrepreneurial Skills and Knowledge: In order to succeed in today's fast-paced business world, entrepreneurs need a wide range of abilities. Skills such as management, decision making, creative thinking, and problem solving are among them. Industry-specific technical know-how, such as manufacturing procedures, socio-cultural and political contexts in which the firm operates, challenges linked to raw materials, distribution routes, competition, etc., are all examples of what an entrepreneur could know. With this information in hand, business owners are better able to plan their actions and make the most of their abilities to achieve success.

Motivational Factors: An individual's motivation may be defined as 'the desire, temperament, dedication, and drive that motivates one to undertake entrepreneurial endeavor and achieve the enterprise's performance goals via the establishment of exceptionally efficient work practices.'"Therefore, inspiration is crucial for business growth."

Business Environment: All Aspects, Including the Economic, Legal, Political, and Technical Factors such as economic stability, raw material availability, competition and price practices, income and investments, trade cycles, infrastructure and technical advancement, etc. have significant effects on the growth of new businesses. Economic policies, political stability, defense policies, foreign policies, etc., combined with the laws and regulations relevant to trade and industry, such as the business laws, industrial laws, labour laws, income tax, sales tax, etc., construct the political and administrative systems. When simple regulations and norms are administered by honest officials, a favorable ecosystem for business growth is created. Significant growth and innovative entrepreneurship are the results of government initiatives to introduce cutting-edge technology, finance research, and foster a culture of innovation.

Normative Behavior: An individuals' risk bearing ability, family expectations and pressures, self-dependence and work culture, etc. determines the normative behavior of that individual. This behavior impacts the entrepreneurship development.

Role of Banks and Financial Institutions: The banks and the financial institutions play a vital role in the development of the entrepreneurs. The nationalized banks and the commercial banks support the entrepreneurs by giving timely credit facilities at concessional rates.

Entrepreneurship Oriented Education System: Instilling a desire to become an entrepreneur and training an individual for the same is the responsibility of an educational institution by including several entrepreneurial development courses along with their formal education. Unless the potential entrepreneurs are identified and supported, the entrepreneurship cannot be developed.

Government Policies and Incentives: The government like industrial policy, Licensing policy, agriculture policy, monetary and fiscal policy, Labour policy, Export-Import policy, etc. effect entrepreneurship development. The government also provides incentives and special facilities for enterprise development.

2.2 Importance and Role of Entrepreneur in Modern Economy

Each country's economic system has its own nucleus, where businesses are founded. Entrepreneurs are the risk-takers who take a chance on a new venture and see it through to fruition, therefore boosting the economy via the creation of new employment and higher standards of life. Entrepreneurs are discussed in further depth, along with their significance and function:

Increase in Employment and Removal of Poverty: When business owners take the initiative to bring their visions to life, they generate new job possibilities. When the number of available jobs rises, the country's per capita income rises as well, indicating that all available resources are being put to good use. This facilitates economic growth, which aids in the fight against poverty.

Construction of Industrial Environment: Entrepreneurs are always researching the industrial prospects for their industrial growth. This outlook encourages more people to start their own industrial endeavors. By taking such an inquiring stance, a productive business setting may be established.

Eliminate Regional Disparities: When it comes to establishing businesses in India's underdeveloped and underserved areas, the central government offers attractive tax breaks and other incentives. In order to facilitate the growth of their respective industries, business owners set up shop in these areas. In this way, we are able to lessen the gaps between different regions.

Support Capital Formation: The increase in the rate of capital formation is an integral part of the economic development of a country. An entrepreneur stimulates the economic forces in capital formation through his undertakings.

Prompts and Balances the Economic Growth and Development: Employment is created, regional inequality is decreased, and a higher standard of life is attained when there is economic growth via the establishment of new industries in various regions. A company owner is thus not only the driving force behind any economic growth, but also a key factor in ensuring that it is steady, sustained, and broadly distributed.

Encouragement to Investigation and Research: As a general rule, business owners take risks and try new things. As a result, one of an entrepreneur's primary roles is to promote study and inquiry into issues of innovation and improvement in areas such as technology, manufacturing methods, new products, and the identification of potential markets.

III. ENTREPRENEURIAL MOTIVATION

In today's economically interconnected globe, the creation and growth of entrepreneurship is a pervasive phenomenon. There is a direct correlation between the success of emerging countries and the expansion of the global economy. These economies have recently shown remarkable economic development, as well as entrepreneurial spirit and cultural innovation. Small and medium-sized businesses (SMEs) are the lifeblood of economies in both emerging and mature markets, and they are inextricably related to entrepreneurialism. Over ninety-five percent of all businesses in industrialized nations are small and medium-sized companies (SMEs), and these businesses employ sixty percent of the labour force. Understanding what inspires people to participate in entrepreneurship is crucial in the study of firm formation. Without considering what drives people to start businesses, we can only build a partial theory and policy framework. "Kuratko and coworkers stated that in order to comprehend entrepreneurship, one must first comprehend what drives prospective and current business owners." According to the research, there is a correlation between a person's level of motivation and their level of business success, as proposed by Carsrud and Brannback.

In order to start a firm from scratch and make it successful, entrepreneurs are willing to take on enormous personal and financial risks. It's a terrifying experience if you really think about it. For what possible reason would someone want to do that? In spite of the challenges, there are bright spots that may fill you with contentment and happiness, and if you stick with it, you'll be rewarded handsomely for your efforts. Each entrepreneur is motivated by a unique set of factors, but a thorough examination reveals five common forces at work in the minds of those who choose to strike out on their own:

Flexibility: Some people decide to go into business for themselves because they are fed up with the constraints of conventional employment. Working long hours, bending to the whims of your superiors and customers, and being mired in the same routine day in and day out are just some of the stresses that come with a position of authority. When you're your own boss in the business sector, you don't have to worry about those kinds of constraints. You're free to work whenever you want, from anywhere you want, and on anything you choose. Working for yourself doesn't always imply less time in the office or less stress, particularly in the early phases of a company's development. Actually, many individuals discover that as entrepreneurs they work harder, longer, and under tighter restraints than they did as employees, but the payoff is worth it.

Money: You may try to pretend otherwise all you want, but the fact remains that the great majority of entrepreneurs are drawn to the field by the promise of massive financial gain. The success stories of people like Richard Branson and Mark Zuckerberg give the impression that anybody with drive and an idea can become a millionaire overnight. While this may not be entirely accurate, any devoted entrepreneur with a strong concept and wonderful timing may earn far more money than they might in a typical career. There's nothing wrong with wanting to become rich, but if that's your main motivation, you can get discouraged if your business doesn't succeed right away.

Personal Growth: Running your own company forces you to face your own character head-on. Daily struggles of any type force you to reflect on who you are and how far you've come as a person. When you're on your own, there's no one to rely on except yourself. Fixing your flaws is crucial for your company's success. For instance, if you're not already proficient in web marketing, you should make it a priority to become so. If this is your situation, you may find a variety of useful internet marketing resources, such as an Australian online company directory. "To reach more Australian consumers, you should get started now on compiling a list of the best online business directories to advertise in." There are numerous additional internet marketing techniques available besides online business directories, Australia. Ultimately, the goal should be to stretch and develop.

Teamwork: Some individuals thrive in team settings. They like working in an environment that encourages collaborative problem solving, where they can exchange ideas with other bright individuals whom they respect. Although there are opportunities to supervise others as part of your job description at certain companies, nothing beats starting your own business and assembling your own team from beginning. When starting out on your own, you get to choose your strategic partners, mentors, core team members, and even your first few employees. That means you'll never have to worry about working on a team that you don't like or can't be productive with since you'll get to choose the skill sets, talents, and personalities you want to work with. Your company's crew is like a family in many respects. Keep in mind that it is normal for families to have arguments from time to time.

Feeling of accomplishment: One of the most important factors in starting a business for some of us is the sense of accomplishment we get from helping others. One's pleasure and feeling of success from providing needed services to others is what draws them to entrepreneurship. Many individuals want to be their own boss because they see themselves feeling fulfilled at the end of each day. Starting a business is motivated by a desire to provide the greatest possible service to one's clientele.

Control: Many business owners who have ambitions of leadership are motivated by a need to exert authority. When you're the one in charge of your own firm, you get to decide everything, from who gets employed and at what wage, to the next steps the company takes. In particular, this may inspire employees who are fed up with their current company's performance or who are working under a CEO who is unable to get anything done. When an entrepreneur establishes himself in a company, they have last said over all operational matters. But there's also the strain and anxiety that come with increased responsibilities. You will be given the opportunity to steer the direction of your company, but you will be solely responsible for its success (or lack thereof) in your own hands.

Self-Reliance: Let's speak about being self-reliant, which is another significant motivating reason that motivates more than half of the world's population towards entrepreneurship. One of the main drawbacks of working for someone else is that you are virtually never given the flexibility to tackle a problem on your own. It is constantly about gaining permits from higher authorities along with filling obscure paperwork for the same. For others, it turns out precisely to be the fundamental motivation for beginning their own firm. Entrepreneurs are naturally inventive individuals who resist attempts to curb their originality. They are driven to start their own businesses by a need for autonomy.

Legacy: Some business owners care more about leaving a legacy than making a profit. They may be seeking notoriety and financial gain by being the public face of a product or service. They may want to be remembered by something of value. They may even be thinking about passing the company on to the next generation. The idea is that they want to leave a legacy that will live on after they are gone. One of the most potent sources of drive for business owners, this inspiration has a far longer shelf life than either financial gain or expertise and is thus much more difficult to replace.

It's the best feeling in the world to launch your own business. However, it is only sustainable if there is sufficient enthusiasm and drive. It's not wise to start a business with the sole intention of generating money, since that desire tends to lag behind the demands of running the firm. To succeed in business, you need to put in a lot of time and effort, and only then will you be able to persevere through the inevitable rough patches. You need to be able to appreciate the intangible benefits of company ownership. Taking the plunge and starting a company on your own is an enormous act of trust. However, the everyday benefits of contentment and fulfilment make the effort worthwhile.

IV. ENTREPRENEURIAL MOTIVATION THEORIES

What drives an entrepreneur is what we refer to when we talk about entrepreneurial motivation. "The Latin root of the English word 'motivation' is 'movere,' which means 'to move." In psychology, it refers to a cause or motivation for doing something, as well as the underlying processes or variables that set-in motion and maintain that behavior. The sheer volume of ideas put out in an effort to explain human behavior is indicative of motivation's significance in both everyday life and the workplace. They use wants and human nature as explanations for why people do what they do. Maslow's Need Hierarchy Theory and McClelland's Achievement Motivation Theory are two of the most well-known and applicable of these theories to the realm of business.

McClelland's Achievement Motivation Theory: David McClelland is most noted for describing three types of motivational need, which he identified in his 1961 book, The Achieving Society: His three motivational needs are given below and have been depicted in Figure: 1.

- Affiliation motivation (n-affil)
- Achievement motivation (n-ach)
- Power motivation (n-pow)

Figure: 1: McClelland's Achievement Motivation Theory

To various degrees, all workers and managers have these wants, and this combination of needs defines an individual's or entrepreneur's style and conduct in terms of their own motivation and the management and motivation of others.

Abraham Maslow's Need Hierarchy Theory: Abraham Maslow's thesis of a 'hierarchy of needs' is often cited as a popular explanation for human motivation. Maslow saw human wants as a hierarchy (see Figure: 1.10.1.5), rising from the most basic to the most complex, and he reasoned that the motivation provided by the satisfaction of the lowest level of needs declines when higher levels are attained.

V. CONCLUSION

Independent start-ups and the development of 'great ideas' in individualistic cultures generate business variety, with the ultimate goal being maximization of profits. A strong demand for achievement, as measured by economic success and money, probably occurs in societies where masculinity is emphasized. Businesses in collectivist societies tend to be evolutionary rather than revolutionary since economic success is considered as a method to achieving social objectives and realizing ideals. Market economies rely heavily on entrepreneurs, who oftentimes serve as the fuel that drives the economy forward. New product and service development leads to more employment, which speeds up economic growth. There is a lot of study looking at what drives entrepreneurs, but much of it has been done in the industrialized world. Given that many entrepreneurs have comparable motivational elements, there may be opportunities to learn more about the similarities and contrasts between the cultural motivations of entrepreneurs in developing and industrialized nations.

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Solubility and Dissolution Rate Enhancement of Nitrendipine - A BCS Class II Drug

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ABSTRACT:

Nitrendipine, an anti-hypertensive drug belongs to class II under BCS and exhibit low and variable oral bioavailability due to its poor aqueous solubility. Rate limiting step for Nitrendipine oral absorption is dissolution and it requires improvement in the solubility and dissolution rate for increasing oral bioavailability. The objective of the study is to enhance the solubility and dissolution rate of Nitrendipine by cyclodextrin complexation together with Poloxamer 407 and PVP K30. The solubility of Nitrendipine was determined inβCD, individually and along with Poloxamer 407 and PVPK30.Solid inclusion complexes of Nitrendipine-βCD were prepared with and without Poloxamer 407 and PVP K30 by kneading method and were evaluated.

The effects of βCD, Poloxamer 407 and PVP K30 in enhancing the solubility, dissolution rate and dissolution efficiency of Nitrendipine were highly significant. βCD, Poloxamer 407 and PVP K30 significantly enhanced the solubility, dissolution rate and dissolution efficiency of Nitrendipine. βCD alone gave a 2.00-fold increase in the solubility of Nitrendipine. Combination of βCD with Poloxamer 407 and PVP K30 resulted in a much higher enhancement in the solubility of Nitrendipine. Combination of βCD with Poloxamer 407 and PVP K30 also gave significantly higher dissolution rates (K_1) and dissolution efficiency (DE_{20}) when compared to βCD alone. Hence a combination of βCD with Poloxamer 407 and / or PVP K30 recommended for enhancing the solubility, dissolution rate and dissolution efficiency of Nitrendipine, a BCS class II drug.

Key words: Nitrendipine, β Cyclodextrin, Poloxamer 407, PVP K30, Solubility, Dissolution rate

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Effect Of Crossfit Training And Plyometric Training On Breath Holding Time And Resting Pulse Rate Among Women Basketball Players

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ABSTRACT:

Background and Study Aim: *The purpose of the study was to find out the effect of CrossFit training and plyometric training on selected breath holding time and resting pulse rate among women Basketball Players.* ***Material and Methods:*** *For this purpose, sixty (n=60) collegiate women basketball players who were participated in inter collegiate basketball tournament were randomly selected as subjects. Their age ranged from 18 to 22 years. The subjects were assigned at random into four groups of fifteen each (n=15). Group-I underwent crossfit training, Group-II underwent plyometric training, Group-III underwent combined crossfit and plyometric training and Group–IV was acted as control group. The experimental groups underwent respective training period for three days per week for twelve weeks. The dependent variables selected for this study were breath holding time, resting pulse rate, and it was measured by stopwatch and stethoscope respectively. All the subjects were tested prior to and immediately after the experimental period on the selected dependent variable and the collected data were analyzed by using ANCOVA was used to determine the differences, whenever the 'F' ratio for adjusted posttest means was found to be significant, the Schefft's post hoc test was followed to determine paired mean differences. In all the cases significant at 0.05 level of confidence was fixed.* ***Results:*** *The results of the study showed that all the experimental had significantly improved in selected physiological variables.* ***Conclusions:*** *The study showed that all the experimental groups namely, crossfit training, plyometric training and combined crossfit training and plyometric training had significantly improved in selected parameters such as breath holding time and resting pulse rate. Further the study showed combined crossfit training and plyometric training group is better than crossfit training, plyometric training and control group.*

Keywords: *Breath Holding Time, Resting Pulse Rate.*

I. INTRODUCTION

Sports science is the application of scientific principles to explain sporting phenomena and provide a basis for improving the performance of teams and individuals [1].

Training is a programme of exercise designed to improve the skills and to increase the energy capacity of an athlete for a particular event, therefore training is essential for the development of physical fitness components [2].

Sports training is a special process of preparation of sports persons based on scientific principles aimed at improving and maintaining higher performance capacity in different sports activities. It is a particular type of training designed to improve fitness and abilities to perform in a given sport [3].

Crossfit based high-intensity power training improves the body composition, maximal aerobic capacity, VO2max was improving in women, and body fat significantly increased (decreased) in men. The high-intensity power training program framed by selected CrossFit exercises was helping to significantly improves on VO2max, body composition, maximal aerobic capacity, and body fat [4].

Plyometric exercise is a popular form of training used to improve athletic performance. It involves a stretch of the muscle-tendon unit immediately followed by a shortening of the muscle unit. This process of muscle lengthening followed by rapid shortening during the stretch-shortening cycle (SSC) is integral to plyometric exercise. The SSC process significantly enhances the ability of the muscle-tendon unit to produce maximal force in the shortest amount of time. These benefits have prompted the use of plyometric exercise as a bridge between pure strength and sport-related power and speed [5].

Exercise physiology is the study of how the body responds and adapts to physical stress. Sport physiology is the application of exercise physiology principlesto guide training and enhance sport performance. Exercise and sport physiology overlap significantly, and therefore are generally considered together. For the remainder of this chapter, the term exercise physiology will be usedto encompass the areas of both exercise and sport physiology. Exercise isan intentional physical stress placed upon the body, producing both acuteand chronic effects that can be studied. Acute exercise effects are sudden andimmediate, whereas chronic exercise effects are gradual and long term. Whenyou start jogging, the systems in yourbody (cardiovascular, respiratory, nervous, endocrine, etc.) immediately respond withacute changes (e.g., increased heart rateand breathing rate) that permit your bodyto meet the demands of the stress and per-form the processes necessary for you tojog. If you jog regularly, the stress is placedupon the body chronically, and the body's systems respond over time with long-termphysiological adaptations. Physiologicaladaptations result in less stress on thebody's systems, greater efficiency of thesystems, and improved physical performance during exercise and other types of physical activity [6].

The body's physiologic responses to episodes of aerobic and resistance exercise occur in the musculoskeletal, cardiovascular, respiratory, endocrine, and immune systems. These responses have been studied in controlled laboratory settings, where exercise stress can be precisely regulated and physiologic responses carefully observed [7].

II. HYPOTHESIS

It is hypothesized that there would be significant differences on the breath holding time and resting pulse rate due to crossfit training, plyometric training and combined crossfit training and plyometric training among women basketball players.

2.1 Purpose

The present study has attempted to find out the isolated and combined effect of crossfit training and plyometric training on breath holding and resting pulse rate among women basketball players.

III. MATERIALS AND METHODS

The study was conducted on sixty (N=60) collegiate women basketball players who were participated in inter collegiate basketball tournament were randomly selected as subjects, their age ranged from 18 to 22 years. The subjects were assigned at random into four groups of fifteen each (n=15). Group-I underwent crossfit training, Group-II underwent plyometric training, Group-III underwent combined crossfit and plyometric training and Group-IV was acted as control group. The Experimental groups underwent respective training period for three days per week for twelve weeks. The dependent variables selected for this study were breath holding time, resting pulse rate, and it was measured by stopwatch and stethoscope. All the subjects were tested prior to and immediately after the experimental period on the selected dependent variables.

IV. RESULTS

The data collected from the experimental groups and control group on prior and after experimentation on selected variables were statistically examined by analysis of covariance ANCOVA, Whenever the ‘F’ ratio for adjusted posttest means was found to be significant, scheffe’s test was followed, as a post hoc test to determine which of the paired mean differences was significant. In all the cases the significant at 0.05 level of confidence was fixed.

Analysis of covariance on the data obtained on breath holding time and resting pulse rate from the subjects in the pre-test, post-test and adjusted post-test mean of crossfit training group, plyometric training group, combined crossfit and plyometric training group and control group have been presented in table- I.

Table I: Analysis of covariance on breath holding time and resting pulse rate of experimental groups and control group

Physiological Parameters		*CrossFit Training Group*	*Plyometric Training Group*	*Combined CrossFit and Plyometric Training Group*	*Control Group*	*F Ratio*
BREATH HOLDING TIME	*Pre-Test Mean*	*30.17*	*29.77*	*29.50*	*28.10*	*1.25*
	Post Test Mean	*33.37*	*31.10*	*33.87*	*31.20*	*12.56**
	Adjusted Post Test Mean	*34.58*	*33.28*	*35.48*	*28.50*	*69.89**
RESTING PULSE RATE	*Pre-Test Mean*	*74.57*	*72.80*	*70.59*	*70.20*	*1.25*
	Post Test Mean	*73.52*	*71.54*	*69.28*	*70.18*	*29.28**
	Adjusted Post Test Mean	*73.43*	*72.56*	*71.26*	*71.19*	*48.64**

- Significant at 0.05 level of confidence Table value for df (3, 56) at 0.05 level = 2.76 Table value for df (3, 55) at 0.05 level = 2.78

Table 1shows that the pre-test and post-test mean values of breath holding for crossfit training group, plyometric training group, combined crossfit and plyometric training group and control group are (pre-test) 30.17, 29.77, 29.50 and 28.10 respectively and (post-test) are 33.37, 31.10, 33.87 and 31.20 respectively. The ‘adjusted posttest mean’ values of breath holding are 34.58, 33.28, 35.48 and 28.50respectively. The pre-test and post-test mean values of resting pulse rate for crossfit training group, plyometric training group, combined crossfit and plyometric training group and control group are (pre-test) 74.57, 72.80, 70.59 and 70.20respectively and (post-test) are 73.52, 71.54, 69.28 and 70.18respectively. The ‘adjusted posttest mean’ of resting pulse rate were 73.43, 72.56, 71.26 and 71.19respectively.

The table value required for significant difference with df 14 at 0.05 level is 2.15. It was concluded that the experimental groups such as crossfit training group, plyometric training group and combined crossfit& plyometric training group had registered significant improvement in breath holding time and resting pulse rate.

The above data also reveal that the combined crossfit and plyometric training group had shown better performance than crossfit training group, plyometric training group and control group in breath holding time and resting pulse rate. Scheffe’s test was followed on the data obtained in selected physiological variables such as breath holding time, resting pulse rate from the subjects in the pre-test and post-test of crossfit training group, plyometric training group, combined crossfit and plyometric training group and control group have been presented in Table- II.

Table II: The scheffe's test for the differences between the adjusted posttest paired means on breath holding time and resting pulse rate

Physiological Variable	*Adjusted Post-Test Means*				*Mean Difference*	*Confidence Interval*
	CrossFit Training Group	*Plyometric Training Group*	*Combined CrossFit and Plyometric Training Group*	*Control Group*		
BREATH HOLDING TIME	*34.58*	*33.28*			*1.30**	*0.99*
	34.58		*35.48*		*0.90*	*0.99*
	34.58			*28.50*	*6.08**	*0.99*
		33.28	*35.48*		*2.20**	*0.99*
		33.28		*28.50*	*4.78**	*0.99*
			35.48	*28.50*	*6.98**	*0.99*
RESTING PULSE RATE	*73.43*	*72.56*			*0.87*	*1.36*
	73.43		*71.26*		*2.17**	*1.36*
	73.43			*71.19*	*2.24**	*1.36*
		72.56	*71.26*		*1.30*	*1.36*
		72.56		*71.19*	*1.37**	*1.36*
			71.26	*71.19*	*0.07*	*1.36*

*** Significant at 0.05 level of confidence**

Table 2 shows that the adjusted posttest mean differences on breath holding time and resting pulse rate between crossfit training group and plyometric training group, crossfit training group and combined crossfit and plyometric training group, crossfit training group and control group, plyometric training group and combined crossfit and plyometric training group, plyometric training group and control group & combined crossfit and plyometric training group and control group. The adjusted posttest means differences on breath holding time are 1.30, 0.90, 6.08, 2.20, 4.78 and 6.98 respectively. The adjusted posttest mean differences on resting pulse rate are 0.87, 2.17, 2.24, 1.30, 1.37 and 0.07respectively. Which are greater than the confidence interval value of 1.36 at 0.05 level of confidence.

The results of the study showed that there was a significant difference between crossfit training group and plyometric training group, crossfit training group and combined crossfit and plyometric training group, crossfit training group and control group, plyometric training group and combined crossfit and plyometric training group, plyometric training group and control group & combined crossfit and plyometric training group and control group on breath holding time and resting pulse rate.

The above data also reveal that combined crossfit and plyometric training group had shown better performance than crossfit training group, plyometric training group and control group in breath holding time and resting pulse rate.

V. DISCUSSION

The results of the study reveal that there was a significant change found after crossfit training group, plyometric training group & combined crossfit training and plyometric training group on breath holding time and resting pulse rate. These results are in corroboration with the studies of [8].

VI. CONCLUSIONS

From the analysis of the data, the following conclusions were drawn.

1. The experimental groups namely, crossfit training group, plyometric training group &combined crossfit training and plyometric training group had significantly improved in breath holding time and resting pulse rate.
2. The combined crossfit training and plyometric training group was found to be better than the crossfit training group, plyometric training group in the performance of breath holding time and resting pulse rate.

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Critical Study on Techniques of Data Backup and Recovery In Cloud Computing

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ABSTRACT:

Data Protection is an earnest action necessary for both government and corporate authority. The continuous revolution in regarding ritualized servers that joined with raising data security necessities has become troublesome for IT relationship to enhance. From the data being insured to test and approve the recover limit of the data; recovery point objectives (RPO) and recovery time objective (RTO) have made data security periodically safer. Cloud computing is quickly converting into the engaged data security elective for some of the IT affiliations. The cloud computing requires assured data security and its necessities are met while solving or alleviating the issues related with conventional data security methods. This paper analyzes these agonizing issues and how cloud reinforcement innovation overcomes them and furthermore gives a study on different reinforcement procedures used for Cloud figuring stage with respect to this stress and their execution evaluation. So, in this paper we have presented a novel algorithm named seed block algorithm. The advantages of this algorithm are that first it helps user to collect information from any remote location without any problem and second it recovers the data also in case of delete or the cloud gets destroyed.

1. INTRODUCTION

Cloud computing permits end clients to run programming applications and access data from wherever, at whatever point and from any PC. Cloud computing can be characterized as an identical word for the appropriated computing over a system, where simultaneous computing from various clients happens. It suggests a gathering of hardware machines implied as a server related through a correspondence system, for instance, the internet, an intranet, an area or wide locale organize. Single client who has agreed to get the server what can use the server's power for their individual computing requirements; get a kick out of the opportunity to run an application, store data et cetera. In this way, rather than utilizing a PC each time people can get to the data from wherever on the planet. Clients have not complete data of cloud, aptitude in, or control over the technology foundation in the "cloud" that backings them. Cloud computing demonstrates the accompanying key characteristics:

- Agility is the capacity of quickly and effectively adapting to changes. As virtual machines require more resources when their hosts experiences inconvenience, then they may be moved consequently and right away to the various servers.

- Virtualization permits developing a virtual form of a devices or assets, for example, server, storage, and system. It enables sharing of the servers and storage devices so that the rate of its uses can be increased where applications can be effortlessly moved starting with one physical server then onto the next using virtualization technology makes numerous virtual machines.

- The cloud can reduce the total cost of responsibility for essentially.
- It enhances the utilization rate of frameworks that are frequently utilized just 10-20% and subsequently the assets can be utilized proficiently. Unwavering quality: It is enhanced if different repetitive destinations are utilized, which makes all around planned cloud computing reasonable for business continuity and debacle recovery.

As the benefits of cloud computing beating that hindrance of different early computing techniques, so the need of cloud computing has just begun. Cloud storage gives online storage office where the is data put away in type of virtualized pool that is generally facilitated by third gatherings. The facilitating organizations works expansive data on extensive data center and as per the need of the client these data center pictured the assets and uncover them as the storage pools that will help client to store files or data objects. As loads of client shares the storage and different assets, it might happen that different clients can get to your data. The human oversights, flawed devices, network connectivity, a bug or any criminal aim may mischief or put our cloud storage on the hazard or risk. And changes in the cloud are additionally made as often as possible; we can name it as unique data. Different tasks are upheld to this dynamic data as like inclusion, erasure and block alteration, and updation.

Since the administrations are not just constrained for documenting and taking backup of data; remote data respectability is additionally required. Since the reason is that the data uprightness dependably plans to center around the legitimacy and devotion of the whole condition of the server that takes great care of the intensely created data which stays same at the season of putting away at essential cloud remote server and transmission. Trustworthiness assumes fundamental part in move down and recovery administrations. In Cloud computing the vast majority of the new recovery and backup techniques have created, this will we think about in our literature like, Cold/Hot backup strategy [1], PCS [2], Linux Box [3], and so forth that, examined the data recovery process. In any case, there is as yet different effective techniques which are lingering behind some basic issues like ease, execution intricacy, process security and time related issues.

2. CLOUD BACKUP/RECOVERY REQUIREMENTS

To eliminate the data protection issues, it requires a large group of new abilities for cloud backup/recovery. It must give [3]:

- Effective agent less backup and recovery.
- Broad support for the virtualized servers, OS, made data applications.
- Data lessening advancements including incremental backup, nearby reduplication, worldwide reduplication, and pressure.
- Restore approval with autonomic data healing of “awful” data.
- User empowered basic online one-pass restores.

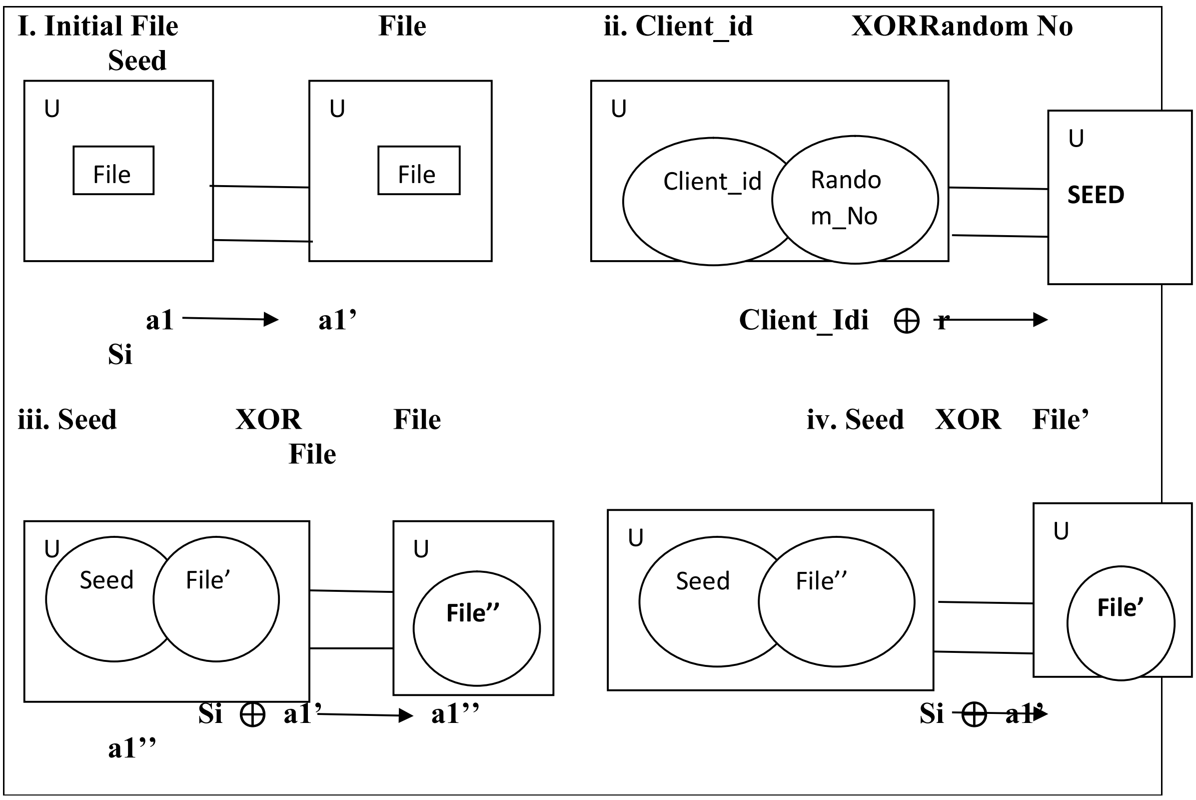
- Encrypted transmission and storage of ensured data with improved key administration.
- Multi-occupancy.
- Flexible backup and recovery RPO and RTO granularity alternatives.
- Automatically move secured data in view of its age/esteem to associated storage level.
- Scalable backend and front-end models.
- Private and public cloud integration.

3. PROBLEM STATEMENT

Data recovery services must be required to keeping up Data effectiveness at the server. We are proposing an extremely productive algorithm for data backup in this paper; this algorithm is called as Seed Block Algorithm (SBA). In Seed Block Algorithm, there are two sorts of targets which we are attempting to accomplish, these are as : First one is from any Distinct area client gathering data when network connectivity is missing. This algorithm is serving to done this. Another is if record cancellation is happened because of any reason or awful fortunately cloud gets wrecked at that point still we can recoup that specific data

.

Mathematical Module Diagram:



4. ISSUES WITH TRADITIONAL TECHNOLOGIES IN CLOUD COMPUTING

Traditional data protection has dependably been risky paying little mind to the technology [1].

Traditional Backup/Restore

The backup/restore specialists likewise disappoint the security adminbec divider port for every operator in different LAN fragment or area and the specialists are intended to take instructions from their backup server programming. It makes them a succulent tempting focus for programmers and an ongoing migraine for the security admin [2].

Server-to-Server and Server-to-Server via Proxy

Different types of data protection (*for example, server-to-server replication and server-to-server replication via proxy have comparable (though marginally unique)*) issues as traditional backup/restore. Traditional server-to-server data protection is basically reflexive between servers. It does not secure against the catastrophe, malware, human-error, and data corruption. The more up to date server-to-server via proxy is practically fundamentally the same as backup/restore with the vast majority of similar issues and recovery multifaceted nature. They have others also including restricted versatility.

Hypervisor Snapshot

Hypervisor (server virtualization) snapshots likewise need an organized data crash consistency (e.g. they too are not application mindful). There are exemptions. Most hypervisor snapshots are integrated with Microsoft VSS (Volume Shadow).

To cater these issues, in this paper we propose Seed Block Algorithm (SBA) which is one of the keen data backup algorithms for remote data access. The commitment of the proposed SBA is twofold;

1. SBA causes the clients to gather data from any remote territory in the disappointment of network association.

2. Recoup the files on the off chance that in the event that it gets erased because of any reason like by mistake or deliberately or if the cloud gets destroyed.

In this paper we center on the related literature of existing strategies that are effective to some level in the cloud computing area. We examine about the remote data backup server. We depicts the short portrayal of the proposed seed block algorithm (SBA) and demonstrates the outcomes and exhibition investigation of the proposed SBA. The data stream outline is given beneath:

Level 0	Level 1	Level 2
File Recovery Request → Application → View Recovered File	File Recovery Request → Data Backup → View Recovered File	File Recovery Request → Perform Seed Block Operation → Exploring File with Seed Block → Recover Original File → View Recovered File

Table 1: FLOW DIAGRAM

5. PROPOSED SYSTEM

Seed Block Algorithm (SBA) Architecture

This algorithm center around straightforward system of the back-up and recovery process. It essentially utilizes the possibility of Exclusive–OR (XOR) strategy for the computing scene.

E.g-: - If suppose there are two data files: P and Q. When we XOR P and Q it created X i.e., X =P Ex-OR Q.

On the off chance that suppose P data file get deleted and we need our P data file back then we can get P data file back, at that point it is anything but difficult to get back it with the assistance of Q and X data file.i.e. P = X Ex-OR Q. Alike, the Seed Block Algorithm attempts to give the straightforward Back-up and recovery process. Its architecture is appeared in Figure 1 which incorporates the Main Cloud and its clients and the Remote Server. Here In the cloud computing we need to set any sort of number and client id which must be novel. Second, In the principle cloud at whatever point the client id is in enlistment stage; around then client id and a sort of that random number is getting EXORed ( ) with each other to create seed block for the relevant client. The produced seed block identifies with every client is put away at remote server. At whatever point client will make the file in cloud first time, it is put away at the primary cloud. When it is put away in principle server, the fundamental file of client is as of now EXORing with the Seed Block of the specific client. In remote server that subsequent EXORed file is put away in file design. In the event that by botch file in principle cloud gets crashed/harmed or file is gets deleted startlingly, at that point in this circumstance client will retrieve the first file by EXORing file' with the seed block of the relevant client to produce the first file and restore the subsequent file i.e., unique file back to the requested client. In this area, we talk about the exhibit and result examination of the SBA algorithm. For show we concentrated on various least framework necessities for principal cloud's server and remote server. Memory prerequisite is kept 8GB for the principal cloud's server and 12GB and remote server which can be reached out according to the necessity. it is watched that memory prerequisite is more prominent than the principal cloud's server because of extra data is kept onto remote server E.g-distinctive Seed Blocks of the relating client.

Amid exhibit we found that the size of local data file put away at fundamental cloud is same as the size of Back-up file put away at Remote Server. We play out this exhibition for various sorts of files. SBA is particularly Vigorous in keeping up the size of recovery file same as that the first data file as results for this investigation demonstrated us. From this we can presume that proposed SBA recuperate the data file with no loss of data.

Time taken by the process [processing time] when client uploads a file at fundamental cloud and that incorporates the collecting of data like any random number from principal cloud, seed block of the comparing client from the remote server for EX-ORing reason; subsequent to gathering, playing out the EXORed operation of the substance of the uploaded file with the seed block and toward the end store the EXORed file on the remote server. We likewise inspected that as the data size expands, the processing time additionally increments. Incidentally, we likewise saw that execution which is megabyte per sec (MB/sec) is consistent at some degree regardless of whether the data size increments.

Principle Cloud's CPU utilization begins with 0% and as the client uploads the file onto it then use increments; to such an extent that it needs to check whether the client is verified or not, in the meantime it sends request to Remote Server for the relevant Seed Block. At the point when request compasses to Remote Server it begins gathering the subtle elements and additionally the seed Block and gives answer in type of the seed Block and amid this session, stack at Main Cloud diminishes which thus foundations for low CPU utilization at principal cloud. In the wake of accepting the requested data, at essential cloud CPU utilization level increments because of EX-ORed operation process. Again, the Final EX-ORed file sends to Remote Server.

1. Start
2. first we set a random number in the main storage and unique client id for every client
3. Whenever the client id is being register in the main storage, then client id and random number is getting EXORed () with each other to generate seed block for the particular client.
4. Whenever client creates the file in cloud first time, it is stored at the main storage.
5. When it is stored in main storage (blob), the main file of client is being EXORed with the Seed Block of the particular client.
6. It is also encrypted using public key RSA
7. That output file is stored at the backup storage (blob) in the form of file' (pronounced as File dash).
8. During Retrieval, check if data present in main storage If present then EXOR with seed block and retrieve data If not present, retrieve data from backup storage
9. During Retrieval from backup storage , the private key of the user will used to decrypt file'
10. The user will get the original file by EXORing on decrypted file' with the seed block of the corresponding client to produce the original file and return the resulted file in case of crash.
11. Stop

6. ADVANTAGES OF PROPOSED SYSTEM

1. Recovery of same sized data
2. Privacy is the primary objective
3. low-cost implementation

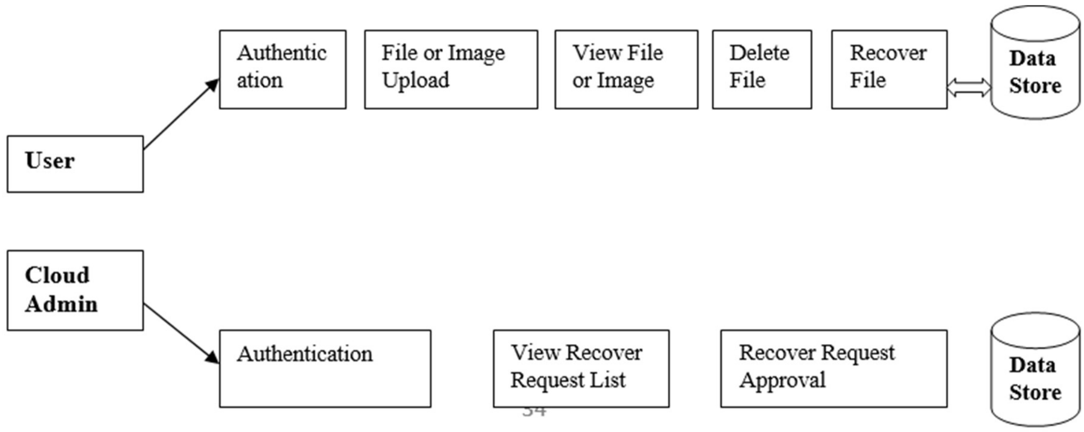


Figure 1: Flow diagram

7. CONCLUSION

In a period of expanding administrative and corporate consistence conventional information assurance systems and things have ended up being agonizingly baffling. They're entangled, dreary, and bumble inclined; driving numerous IT associations to a movement of mixed covering arrangements. The desire is that this capricious soup of information insurance will enable the association to guarantee and if essential recover their information. Unfortunately, that desire is excessively frequently hidden. The arrangement is private, open, and half and half cloud-based reinforcement/recuperation. It dispenses with the multifaceted nature and disappointment while really meeting or surpassing IT association information insurance prerequisites. In this paper, we have exhibited nitty gritty outline of proposed SBA algorithm. Proposed SBA is robust in helping the clients to gather data from any remote location in the loss of network association and if file erasure happens because of any reason or terrible fortunately cloud gets annihilated till we can likewise recoup files. Exhibit and result investigation demonstrates that proposed SBA additionally centers around the security issue for the back-up files put away at remote server, without utilizing any of the current encryption techniques. The proposed SBA will set aside least time for process recovery with the goal that the issues compare to time can be illuminated.

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A Critical Study on Information Audit and its Implication

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ABSTRACT:

Information Audit is taken as the successful instrument to assess the circumstance and pick up control over it. IA surveys the institutional execution for its information assets, services and user needs. Engineering education is an examination-based education. Users require convenient also, current information to finish their examinations and assignments. Information Audit (lA) would assume an essential part to set up contact inside the user needs and resources of libraries, to make the system proficient and accomplish user satisfaction.

I. INTRODUCTION

The information audit is a set up administration technique that will address these issues. The information audit is a procedure that will sufficiently choose the present information condition by recognizing what information is required to meet the necessities of the affiliation. It sets up what information is starting at now gave, and empowers a planning of the two to recognize gaps, anomalies and duplications. The procedure will similarly support the mapping of information streams all through the affiliation and between the affiliation and its outside condition to engage the unmistakable proof of bottlenecks and wasteful aspects.

This paper portrays the information audit as a tool that can be used to not simply recognize purposely essential information resources, however to moreover perceive those endeavors and activities that influence information and those that to rely upon the trading of learning from various districts of the affiliation. It right off the bat portrays the information audit process. Besides, it shows the seven-phase information audit model. It looks at each phase of the model with respect to its sense of duty regarding the procedure and the pined for comes about.

For quite a while the information audit process has been progressed by information specialists as strategies for recognizing the information needs of an affiliation additionally, organizing them against existing services and resources. In later years it has been used extensively, overwhelmingly by advisors, as the underlying stage in the headway of a learning management technique.

An information audit is ‘a precise appraisal of information use, resources and streams, with a check by reference to the two people and existing records in demand to develop how much they are adding to an affiliation’s goals’. Regardless of the way that there is no overall recognized importance of an information audit, this definition got by Aslib, the Association for Information Management is the most appropriate as it combines the essential parts of ‘information use’ and ‘people’. An information audit is a procedure used to –

- Identify the information needs of the affiliation and distribute a level of vital Significance to those necessities
- Identify the resources and services starting at now provided for address those issues
- Map information streams inside an affiliation and between an affiliation and its outside condition
- Analyze openings, duplications, wasteful aspects and domains of over-game plan that enables the recognizable proof of where changes are critical

The term 'audit' proposes an including. An information audit not simply counts resources yet what's more dissects how they are used, by whom and for what reason. The information audit dissects the activities and undertakings that occur in an affiliation and perceives the information resources that assistance them. It takes a gander at, not only the resources used, yet how they are used and that they are so essential to the productive realization of every errand. Joining this with the assignment of a level of vital centrality to all undertakings and activities enables the distinguishing proof of the districts where deliberately basic information is being made. It similarly recognizes those errands that rely upon learning sharing or trade and those that rely upon a high bore of learning.

The information audit process enables the mapping of information streams inside an affiliation and between an affiliation and its outside condition. Also, furthermore recognizing gainful streams, it moreover perceives openings, duplications, bottlenecks and diverse wasteful aspects in existing streams. It recognizes existing channels that can be utilized for learning trade and zones of the affiliation where there is a requirement for astounding learning that isn't being met. Well-ordered guidelines to coordinate an information audit - introducing the model Similarly as there is no by and large recognized importance of an information audit, there is furthermore no inside and out recognized model for the information audit process because of the fundamentally contrasting structures, natures and states of the relationship in which they are coordinated. The model presented here is one that was made by the maker in light of investigating the approaches used by overseers and specialists and isolating the portions critical to achieve the objectives of an information audit.

The seven-organize information audit model as showed up in figure 3 takes you through the information audit process arrange by-organize including those parts of the procedure that are fundamental to its success and the issues that you may stand up to that can influence on the estimation of your outcomes. The seven phases are

1. Planning
2. Data collection
3. Data examination
4. Data evaluation
5. Conferring suggestions
6. Completing suggestions
7. The Information Audit as a continuum

The model isn't a significantly organized and controlled process that works in an immovably portrayed manner. Or on the other hand perhaps it is an organized framework that is versatile and can 'curve' to meet the fluctuating conditions and imperatives of an affiliation. As it were, the parts can be 'redone' to suit to the goals of the affiliation what's more, the resources available.

II. APPROACHES TO INFORMATION AUDIT

Information audit has two noteworthy unequivocal factors which are:

1. To down Approach: The top - down approach offers the benefit of senior management's dedication towards the lA action. This is vital as it guarantees the general authoritative status for strategic information audit. Divisional units look for support by utilizing the impact of a corporate support from the top management.

2. Bottom-up Approach: In this approach the divisions work lA all alone without much association of the top management. Singular departments have particular needs, so leading lA turns into a neighborhood level need. In such case the lA can be sorted out at the individual unit level and dosage not demands solid support from the top management.

3. Cost-benefit approach: Ellis et al. notices the objectives of the cost benefit methodologies as a rundown of alternatives contrasted with each other based on their cost and saw benefit. The cost benefit methodology is proposed showcasing strategy and examines the cost - estimation of an information item.

4. Geographical approach: This is called geographical approach in light of the fact that the aim of IA under this approach is to recognize the real parts of the system and map them in connection to each other. This approach was advanced by Gillman. He takes the perspective of system analysis.

5. Hybrid approach: Hybrid approach is a blend of at least two approaches. Quinn's own methodology of Information Audit has a few likenesses with the geographical approach and has accentuation on cost esteem analysis too. Worlock's methodology shows the cost-benefit and geographical approach in mix.

III. REVIEW OF LITERATURE

Núria Balagué, (2009) in her article said that the points of the audits in library services venture are to investigate the library activity and likewise the organizations that support them. Another point is to assess the applicable estimation of libraries as far as how would they give exercises in fortifying understudy realizing and what has been contributed for the improvement of research. There are techniques have been done where a library services assessment manage is set up so as to ensure that similar methodology was utilized at all the libraries. This was proposed as "The successful academic library".

Silvia Romero, (2010), has turned out with her own idea whereby so as to guarantee freedom, the main connection between the organization and the auditor must be the audit errand. As an information specialist co-op, libraries have been the most assessed organizations. There is a program built up in year 2003 to support the enthusiasm for nature of the assessment procedure. With a specific end goal to support hold on assessment and change of library services, the affirmation of the Quality of Library Services has been presented generally. Information audit in library is critical in enhancing the present practices.

Basware (2012) abridges the fundamental advantages of the audit is to diminished handling costs and a lessening in receipt blunders. His perspective is by giving receipt information electronically and in a configuration offers various other potential points of interest, including shorter installment delays, less mistakes and lower printing and postage costs. It goes the same to the library management of the records, books, articles and every one of the references materials could be disentangled to lessen the seeking time and enhance viability.

(Niskanen et al., 2011) Information audit is additionally essential as the audit gives a holding and observing instrument among the organizations that can decreases office strife by guaranteeing stakeholders that their advantages are secured.

Dubois (2005), in his article communicated that the undocumented formal and casual correspondence flows might be uncovered which can add to the improvement of the organization and additionally giving optimal management structures. This is additionally the vital of information audit to the improvement of organization management system.

IV. OBJECTIVES

The primary goal of the present investigation is to watch the present circumstance of the libraries and propose a model of information audit for these libraries. Following are the objectives of the investigation:

1. 2. To distinguish the resources and services of libraries and system utilized by them.
2. To consider different models and methodologies of Information Audit.
3. To configuration model for Information Audit for Libraries.
4. To test the IA model in libraries.

V. RESEARCH METHODOLOGY

Engaging strategy for inquire about was chosen and study procedure was utilized. A study is a comprehensive study of circumstance or chose populace. The study was performed by utilizing data gathering tools like Survey, Interviews. A pilot study was led covering, where the researcher is working at show.

The beginning of Information auditing itself had an experimental foundation and hypotheses were produced at the appropriate time of time. The methodologies of Information Audit had principal reason to find information related issues and to look for reply. Keeping in see, the cost, quality and accessibility of information, the information audit functions as a controlling tool for accomplishing appropriate dispersion and usage of information sources

VI. RESULT AND ANALYSIS

One can characterize research as a logical and systematic look for applicable information on a particular point. Research is known as a systematic mission for information. An intelligent system took after to reach to the characterized issue is known as a research Methodology. The researcher has utilized a Descriptive Method of research for the present study. The Descriptive method of research is worried about the portrayal of data and qualities about the chose populace for study. The point is to secure a truthful, exact and systematic data that can be utilized as a part of numerous routes for translations like averages, frequencies and comparable statistical calculations.

The Above model was tried at the Central Library. The creator for the most part assessed the level of satisfaction of the showing faculty of stream about the library resources, utilizing the present five stage model of Information Audit.

Table-1: The facilities available to the librarians

WAYS	YES	NO
Telephone	40	5
Web page of library	0	45
e-mail id	45	0

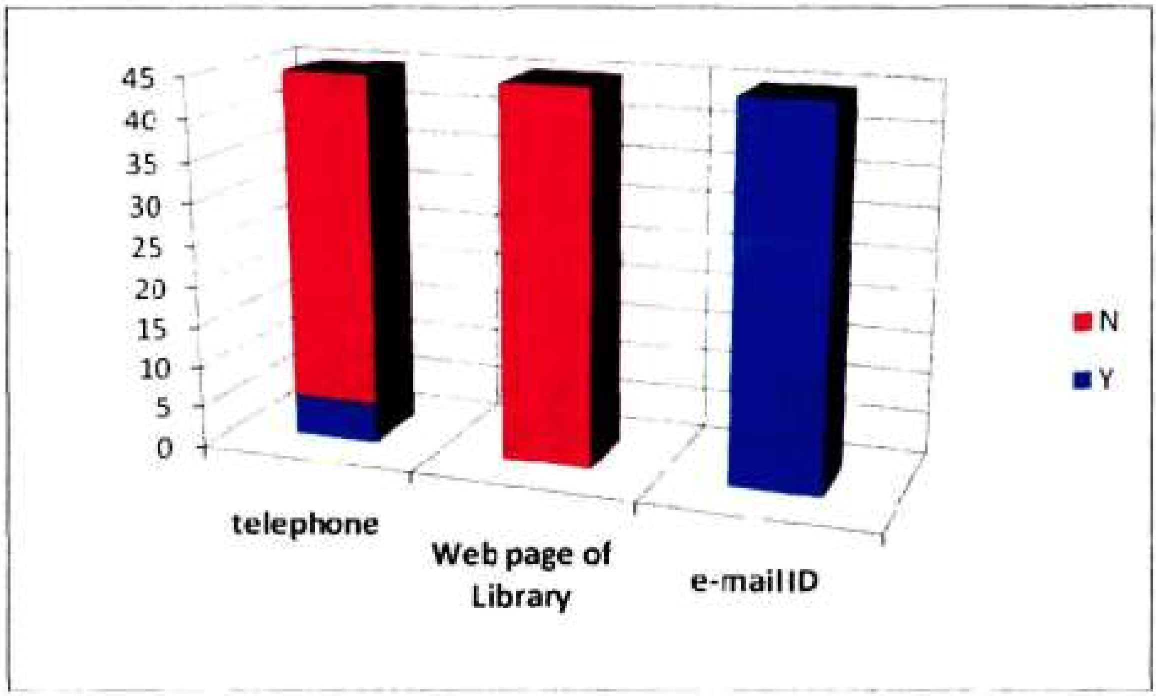

Figure 1: Facilities available to the Librarians

The researcher, needed to look for the information in regards to telephone, Email-ID, website office as the methods for communication. 88 % (40) librarians reacted that such an office in regards to isolate phone line was not accessible to them, 5 of the librarians said to have the '0 dial' office for communication outside the organization. As to website office, every one of the 45 librarians (100 %) said that they don't have yet the information about the library is situated on the institution's website

The collection of the library includes 54000 volumes. The demonstrating workforce diagramed was 198 which fuses Assistant instructors (110), Associate teachers (50), Professors (40).

Stage 1: Planning: The school specialists like Principal, Vice-Principal, Library Committee Chairman and LC individuals were taken into sureness. A gathering was called to pick the targets, degree, strategy and the time portion of the audit. An audit leading body of trustees was picked, for which the LC director worked as the benefactor of the information audit process and the Librarians was one of the individuals. The gathering involved eight individuals, since there are eight focus branches of building, one workforce from each branch was the person from the audit board. The CL director and Librarians was the essential individuals related with declaring for the audit. At this point outer help or authority was not felt as required. Diagram was driven survey and meeting frameworks were perceived as tools to gather the data. Time distribution of 2 months was settled.

Stage 2: Data Collection: Taking into account the degree of the affiliation and the picked test, the examination was organized. Assorted commitments were assigned to LC individuals and furthermore the supporting staff of the Central Library. A study was illustrated with the bearing of the Chairman of the audit board and field work was orchestrated. Each one of the divisions was moved ever closer was ensured that each personnel finish off the survey. A supply of imperative resources of focal library was set up in light of the library use measurements. The users were met with reference to their supposition about the library and required resources and services and the general advancement of the Central Library which would be helpful for training.

Stage 3: Data Analysis and Evaluation: The collected data was entered in the PC using MS Excel spreadsheet in the library by the supporting staff and was directed by the audit leading body of trustee's individuals for each division. The data was assessed before section into the PC and holes, missing associations were cleared up with the help of the audit partners. The changed data was coded using 0,1,2 regards. The analysis was finished using the capacity from the IT and Computer designing division of the school and after that surveyed by the Chairman of the audit board and the Librarian.

Stage 4: Suggestions and suggestions: After the data analysis and evaluation, the proposition were drawn which in like manner considered the once-over of the employees submitted while meeting. The data was deciphered and discuss in the warning gathering for indisputable draft to put before the Principal and Vice Principal.

They were at first conferred through HOD meeting and indirect. A point by point repot was prepared using the advantage reports for Information resources and Information services were prepared and the report was shown before the Principal and the Founder-President for some strategy choices.

Stage 5: Implementing and Reviewing Recommendations: During the reporting stage an action expects to complete the suggestions was also analyzed with the expert.

This was about the utilization of Information Audit. Following are the delayed consequences of the Information Audit. Audit Data Analysis: The results were discussed for the underneath indicated orders as A) B) Library advancement, C) Library Administration D) Library forms; E) Automation and Digital Library;

A) Library Development:

1.1 *Library Collection:* Engineering colleges were following measures laid by the pinnacle body; AICTE, New Delhi till 2013-14. For the academic Year 2014-15 UGC superseded AICTE. They remarkably had commands for e-resources and other book collection in addition. Appropriate around 98% employees used these resources for their further examinations and endeavors. Print collection is barely evaded for worldwide dispersions. National print periodicals were basically used by 80% staff as CAS.74% people required IP based access to the library e-resources and OPAC office.

1.2 *Library Services:* It is recommended that the library district and examining passage should be adequately enormous to oblige more users on the double, since the understudies are in the extent of 1000 - 2000 and substantially more. It is recommended that the libraries should have adequate space i.e., more than 600sq.mtrs, incredible lighting approaches and have condition accommodating for ponder. 60%users required services like Current Content, E-mail cautions, Ask a head service. Half-staff used DELNET document movement benefit and 45% were happy about it.

1.3 *Library Building:* Client was energetic for the benefit sharing office at the Central Library. 86% users worked to the Central Library Card. Regardless, as they would see it the library building should be more pleasing to all and in a focal area. They were content with the 24 hours timing of the library.

B) Library Administration:

The library has vertical administrative structure. There is signify 60% in Central Library separated into each sectional library.55% staff was content with the supporting staff and 5% personnel was hopeless.

C) Library processes

The procedures libraries are as determined underneath: a) Accessioning is done, using both the techniques i.e., manual and furthermore by using PC. b) Dewey Decimal request plots (DDC) nineteenth Ed. With change of 22nd ed is taken after for book arrange. C) Web OPAC is given however only 15% staff said they use OPAC. d) Shelving game-plan is according to call numbers e) Open access to the stacks for the personnel. f) Reservation office is also publicized.

D) Automation and Digital Library:

Engineering staff uses SLIM 21 programming for library automation and is well ordered changing over to ERP plot and realized by the Technical Educations Society called GEMS. The Central Library has 30 PCs in Digital Library area at the fourth floor. 89% Faculty are using Digital Library office. The foundation is having truly incredible mechanically strong framework for the Digital Library (DL). As showed by the personnel 2mbps speed of web is move back and we need to add more databases to the digital collection.

Institutional repository may upgrade the digital library and it should be created distinctly to combine the all STES institutional preparations. It is solidly proposed (88%) that all the employees' dedication should be assembled and secured in the Institutional Repository.

Issues in Central Library inspired after Information Audit:

1. There are various resources open yet the information isn't spread properly.eg. Reference area list isn't suitably appeared; users don't think about elective resources.
2. Periodical collection is a serial collection the volumes and issues are missing and it has made gap in the collection.
3. The Reservation office isn't directed properly, which makes delay in scattering users.
4. There is nonattendance of co-arrangement and correspondence among staff as for culmination of information cycle.
5. There were issues in stacks as out of syllabus books, unused books, nonattendance of minimized storage room.
6. Acquisition policy and weeding out policy isn't truly drafted or executed. Judiciousness regarding the weeding out of books isn't in the hands of adjacent master i.e., Caretaker, this causes delay in decision or lingering.
7. In the Digital Library equipment and programming upkeep, web speed is the noteworthy issues as the utilization is 200 users for every day.
8. Library area is far away; this was an issue declared by 40% faculty.

Noted Strengths of Central Library amid the Information Audit:

1. Asset sharing is particularly supervised. Interestingly for post graduate information needs are satisfied extraordinarily well. 89% users are content with this office.
2. Digital Resources are all around managed and the DL is open till 12 mid night which is benefitting the understudies.
3. Each moment of consistently Library with huge Reading Hall restrict is particularly esteemed by 98% faculty individuals.
4. Library Building and infrastructure was bounteously esteemed by 82% users.

VII. CONCLUSIONS

It is possible to lead information audit on a couple of various parts of library and library services and also a specific govern or an issue. It is essential to coordinate the information audit from time to time so as it helps in taking honest to goodness choices and furthermore to outline client arranged courses of action.

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An Overview on the Concept of Data Warehousing and Data Mining and Its Implementation in Business

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ABSTRACT:

As time has gone on, the notion of Business Intelligence (BI) has become more important in assisting business leaders in making well-informed decisions that effectively address the challenges facing their companies. Business intelligence (BI) software is useful because it enables managers to query, understand, and assess their organization's current data to provide practical insight that improves decision-making. As competition in the market rises, businesses find it more difficult to adapt swiftly to shifting consumer preferences. Overwhelmed by complex data, businesses might gain a competitive edge if they learn how to translate that data into actionable insights. Businesses and organizations may benefit from IT tools such as a decision support system, online analytical processing for data querying and reporting, predictive analytics, and business performance management. Now corporations utilize methods of Data Mining that incorporates pattern recognition, mathematical and statistical approaches to explore Data Warehouses and aid the analyst in finding major trends, facts linkages and anomalies. In this aspect this study focuses on the relevance and function of Data Warehousing and Data Mining technologies in company.

Keywords: Business Intelligence, Data warehousing, Datamining, artificial intelligence, machine learning, etc.

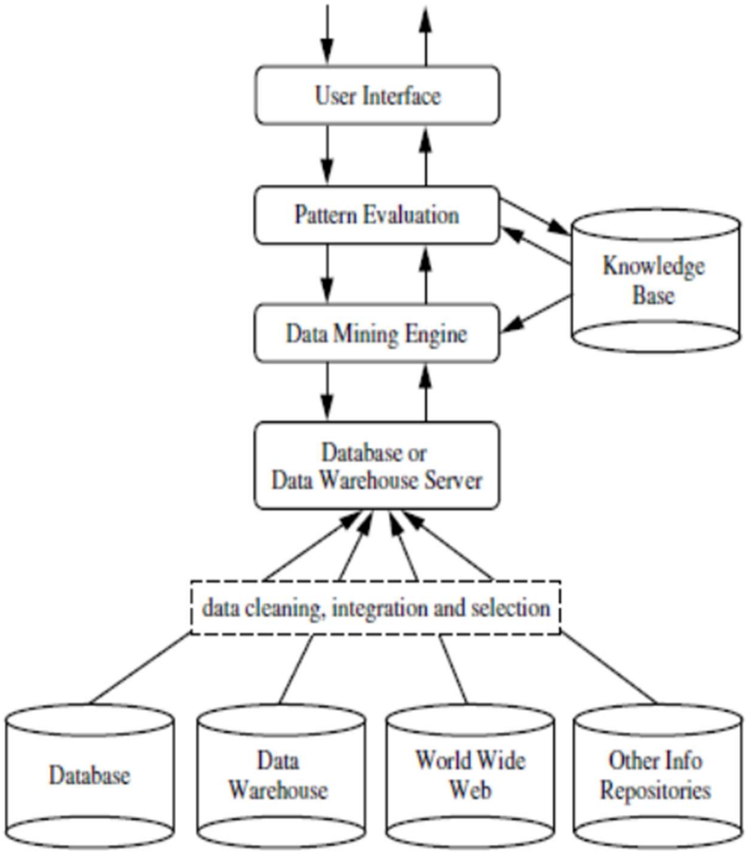
I. INTRODUCTION

Many different kinds of business application systems have been built as a direct consequence of the rapid growth of IT in recent decades. Databases are frequently important components of these systems. The ability to efficiently access data, share data, extract information from data, and utilize the information stored has become an essential demand in many businesses as data has become a crucial resource. As a consequence, a lot of work has gone into, first, combining disparate data sources (e.g., databases) located at different locations to construct a corporate data warehouse, and then, second, extracting information from the warehouse in the form of patterns and trends. There are similarities between a data warehouse and a database management system, but there are also key differences. In order to save time and effort, users may instead direct their queries to the data warehouse, which has a consolidated view of data from the underlying heterogeneous databases. It is not obvious to the user that a complicated query requires the cooperation of several processing components.

A data warehouse's primary purpose is to aid in the making of business and organizational decisions. Unlike the raw data found in the various data sources, the correlated data, summary reports, and aggregate functions found in the data warehouse will help make sense of the raw data. Therefore, the warehouse may give information that is not available from any one database. Data mining is the practice of discovering useful information and patterns in huge datasets by the use of different approaches, such as those based on machine learning and statistical analysis. Files, Relational or OO databases, or data warehouses might have been used to store the information.

II. DATA MINING

Data mining is the process of discovering patterns and relationships in massive datasets. Despite its popularity, the name is misleading. Thus, the focus on mining from enormous volumes of data should have been reflected in the term, which would have been knowledge mining. "Artificial intelligence, machine learning, statistics, and database systems all come together in this computational process of detecting patterns in massive data sets." The purpose of data mining is to discover meaningful patterns in large data sets and organize the results in a way that may be used in other contexts.



The key properties of data mining are:

- Prediction of likely outcomes
- Automatic discovery of patterns
- Focus on large datasets and databases
- Creation of actionable information

III. DATA WAREHOUSE

A data warehouse is a subject-oriented, integrated, time-variant and non-volatile collection of data in support of management's decision-making process.

- **Integrated:** A data warehouse integrates data from multiple data sources. For example, source A and source B may have different ways of identifying a product, but in a data warehouse, there will be only a single way of identifying a product.

- **Subject-Oriented:** A data warehouse can be used to analyze a particular subject area. For example, 'sales' can be a particular subject.

- **Non-volatile:** Once data is in the data warehouse, it will not change. So, historical data in a data warehouse should never be altered.

- **Time-Variant:** A data warehouse is a repository for data collected over time. Data from as far back as three, six, or twelve months may be retrieved from a data warehouse. By contrast, with a transactional system, often just the most current information is retained. For instance, a transaction system could just have a client's most current address, whereas a data warehouse might include every address that's ever been linked to that customer.

3.1 Data Warehouse Design Process

A data warehouse can be built using a top-down approach, a bottom-up approach, or a combination of both.

- ***The bottom-up approach*** starts with experiments and prototypes. This is useful in the early stage of business modeling and technology development. It allows an organization to move forward at considerably less expense and to evaluate the benefits of the technology before making significant commitments.

- ***In the combined approach***, an organization can exploit the planned and strategic nature of the top-down approach while retaining the rapid implementation and opportunistic application of the bottom-up approach.

- ***The top-down approach*** starts with the overall design and planning. It is useful in cases where the technology is mature and well known, and where the business problems that must be solved are clear and well understood.

The warehouse design process consists of the following steps:

- Select a business process to model, such as sales, account management, inventories, orders, invoices, shipments, or the general ledger. A data warehouse model should be used if the business process is organizational and contains several complicated object collections. A data mart model should be used, nevertheless, if the process is departmental and concentrates on the analysis of a single kind of business process.

- Select the business process's direction of grain. The fact table for this process will include the basic, atomic level data, such as individual transactions, daily snapshots, and so on, as the fact table for this process will include the basic, atomic level data, such as individual transactions, daily snapshots, and so on, as the Select

- the dimensions that will be applied to each entry in the fact table. Time, item, customer, supplier, warehouse, transaction type, and status are examples of typical dimensions.

- Select the metrics that will be used to fill each fact table entry. Common measurements include numerical additive amounts like dollars and units sold.

IV. FROM DATA WAREHOUSE TO DATA MINING

To increase the value of Data Warehouse, suitable Data Mining methods must be used. Data is transformed into business information using data mining algorithms, which enhances decision-making. Data mining is a collection of techniques for data analysis that were developed with the goal of identifying certain dependencies, relationships, and rules in respect to data and presenting them in new, higher-quality information. Results from data mining demonstrate the relationships and interconnectedness of the data. The basic foundation for these dependencies is a variety of mathematical and statistical relationships. Internal databases are used to gather data, which is then transformed into a variety of papers, reports, lists, and other types of output that may be utilized in decision-making processes. Data mining is used to apply the proper rules of behavior and patterns after picking the data for analysis. Data mining is sometimes referred to as 'extraction of information, 'data archaeology,' or 'pattern analysis' for this reason.

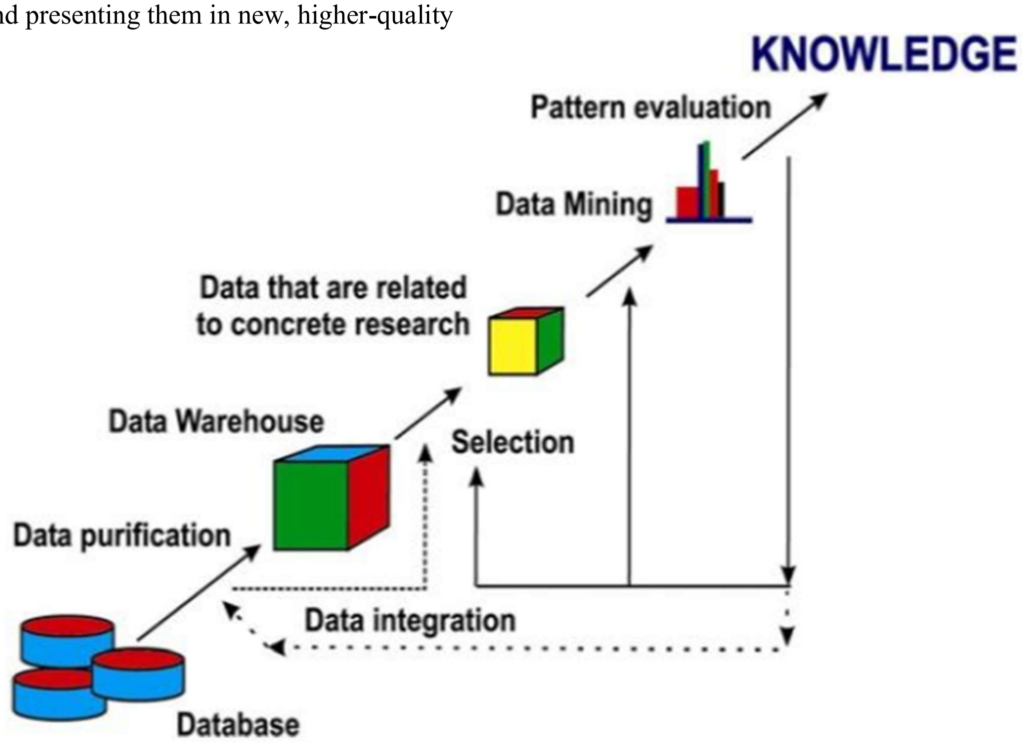


Figure 1: The process of knowledge recovery from database by using Data Warehousing and Data Mining technologies

V. DATA WAREHOUSE AND DATA MINING: APPLICATION AREAS IN BUSINESS

Data warehousing and Data Mining has gained improved popularity in multiple areas of business to analyze the large databases quickly which would be too complex and time consuming. Some of these application areas are listed below.

- **Finance:** analysis and forecasting of business performance, for stock and bond analysis.

- **Government:** for searching terrorist profile and threat assessments.
- **Direct marketing:** for identifying prospects that are included in mailing list so as to obtain highest response time.
- **Banking:** to learn underwriting, mortgage approval etc.
- **Manufacturing:** for improved quality control and maintenance.
- **Medicine:** for drug analysis, diagnosis, quality control and epidemiological studies.
- **Market segmentation:** to identify customer's common characteristics and behavior that purchases the same products of a company.
- **Churn analysis:** to predict customers who are likely to quit the company and move to a competitor company.
- **Web marketing:** for advertisements and personalization opportunities.
- **Fraud detection:** to identify the fraud users in telecommunication industry as well as credit card usage.
- **Trend analysis:** to analyze the difference between the customer's behavior over consecutive months.

5.1 Role of Data Warehousing and Data Mining in Decision

A data warehouse's objective is to utilize data to help decision-making. "For specific sorts of judgments, data mining may be utilized in combination with a data warehouse." Data warehousing and data mining need an expert user to provide the relevant data and a professional to draw conclusions from the output in order to be successful. The results will be impacted if the user provides inaccurate or insufficient information, and the prediction won't be reliable. Data mining and data warehousing are crucial to the organization's decision-making process. Data warehousing assists in decision-making by providing answers to a variety of questions for the company and the user. The company uses a variety of inquiries, including update queries, tactical queries, and strategic queries. A database transaction known as a tactical query aims to identify the optimal course of action at the moment. A tactical query offers information to rank and file field personnel who must react swiftly to a series of developing events, unlike a strategic query, which provides the data required to make long-term business decisions. The number of results from tactical inquiries is often rather minimal. The result set often has less than twelve rows. On a display screen, the result set is often made to fit inside a single window. A database procedure known as a strategic query seeks to ascertain what has occurred, why it occurred, and/or what will happen next. It often uses the warehouse to retrieve enormous volumes of detailed data, and its complexity may vary from simple table scans to multi-way joins and sub queries. Applications for report production, OLAP, decision assistance, ad hoc, data mining, etc., may provide strategic inquiries.

A database procedure that alters a database's state is called an update query. In order to efficiently load huge amounts of data into the database, Teradata offers a collection of bulk load functions.

VI. CONCLUSION

It is well known that the strategic level of decision-making often uses cumulative and derivative data from certain time periods rather than daily business information. In order to ensure that the quality of the decision-making process is met, it is vital to take into account the vast quantities of data from the past period as the issues being addressed in strategic decision-making are often non-structural. As a result, the concepts of data warehouses and data mining are mandated as a solid foundation for corporate decision-making. Additionally, unstructured issues often follow the strategic level of corporate decision-making, which is why data warehouses have been used as a foundation for the creation of instruments for business decision-making like decision support systems. The purpose of a data warehouse, as a contemporary technology idea, is to include relevant data from key business operations in a format that is suitable for doing different analysis. Data mining and data warehouse technologies have a promising future in corporate applications because they open up new avenues for innovation via automated trend and behavior prediction in huge databases. Data mining methods aid in the automated discovery of undiscovered patterns by spotting aberrant data that point out input mistakes. Data mining and data warehouse technologies are used in many different areas, including sales and marketing, healthcare, and finance. Several advantages of these technology exist in numerous sectors. With pleasure, it can be mentioned that these technologies provide speedy data analysis, which enhances the effectiveness of decision-making.

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An Initial Survey of Invasive Alien Angiosperms of District Rampur of Uttar-Pradesh, India

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ABSTRACT:

A survey of invasive alien plant species of Rampur district of Uttar Pradesh was made and we found a total richness of 54 species. Parthenium hysterophorus, Achyranthes aspera Argemone mexicana, Ageratum conyzoides, Euphorbia hirta, Lantana camara, Urena lobata and Calotropis procera are very common and distributed all over the district. The data revealed that both aquatic and terrestrial invasive plant species are becoming threat to the native flora as they reproduce fast and crowding out native species. Many of the invasive alien species are of therapeutic as well as commercial importance also, due to which some alien species, often cultivated (as ornamental), may provide food, fodder and medicine, to the villagers.

Ni-Al Nanosheets for the degradation of organic pollutants by solar based photocatalysis assisted by adsorption

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Abstract
Ni-Al nanosheets were synthesized and its characterization was carried out using field emission scanning electron microscopy(FESEM), energy dispersive X-ray spectrometry (EDS), Powder X-ray diffraction (XRD), and Fourier transform infrared spectroscopy (FTIR). FESEM images indicate that the synthesized material is grown in the form of the sheet while the XRD pattern suggested that the as-grown nanosheets are a mixture of Ni-Al/LDH and Al_2O_3. Ni-Al nanosheets were used in the treatment of waste water to check its capability as a pollution coagulant. We employed Ni-Al nanosheets as a bio sorbent to remove the organic dyes viz, cationic and anionic dyes. The experimental results showed the anionic dye Methyl Orange as the best adsorbent of all the dyes used. This reaction was carried out in the UV/Visible light which showed the degradation. As methyl orange was the best adsorbent, it was also checked in the dark condition, and it also decolorized the effluents, however, the decoloration is much profound in UV/Visible light. Thus, we can say that Ni-Al nanosheets exhibited adsorption assisted photodegradation. Hence, Ni-Al nanosheets can be used as a bio sorbent.

Keywords: Ni-Al/LDH, Methyl orange, Photodegradation, Bio sorbent

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A Novel Secure Data Sharing Method in Cloud Using Privacy Protection Model

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ABSTRACT:

From couple of years, there has been a fast advancement in Cloud Computing. Cloud computing is an emerging IT environment that has significantly transformed everyone's vision of computing infrastructure, development models, and software distribution. Cloud computing is anticipated as the next generation high-tech paradigm for tomorrow's promise [1]. It provides several utilities as revolutionary gigantic paradigms where clients can remotely store valuable and confidential information as to avail from on-demand high quality computing resources [2]. While data outsourcing reduces the burden on the cloud users (CUs) from local storage and management, it brings several open problems related to the security and privacy of customer's outsourced data. On the other hand, cloud computing eradicates their physical control of data reliability and security, which can be addressed through the cooperation of three parties: the cloud service provider (CSP), the third-party auditor (TPA) and the CU.

I. INTRODUCTION

For data privacy and user identity privacy in a cloud storage system, Jung et al. (2015) presented Anony-Control, a partly anonymous privilege control technique, and Anony-Control- F, a completely anonymous control mechanism. This methodology provided fine-grained privilege control and identity anonymity by combining these methods with numerous authorities. For an internet-based cloud computing environment, the system accepted up to N - 2 authority breaches.

Yuen et al. (2015) presented anonymous cloud access control based on k-times attributes. Users could anonymously authenticate to the cloud server, and the k-times limit allowed for anonymous access control. The server would let some users to access the systems for a limit of k-times during a given event or period, after which they would be refused access.

For anonymous authentication, Sushmita Rujet al. (2014) presented a decentralized access control approach for safe data storage in the cloud. Before saving the data in the cloud, the cloud checked the validity without knowing the users identify. To avoid reply attacks, this work included an access control system and user revocation.

For countering internal and external DDoS assaults, Darwishet al. (2015) suggested a unique cloud-based secure authentication (CSA) system. The CSA protocol is designed to protect against DDoS attacks both inside and outside. The protocol participants' efforts were dictated by a multilayer adaptive approach. It was capable of recognizing valid user requests and prioritizing them in the authentication process queue. The authentication procedure was created in such a manner that cloud-based servers left no trace and were well aware of the dangers of a DoS assault.

Amin et al. (2016) developed a distributed cloud architecture that used the Internet of Things (IoT) to store secret information in a private cloud. A common authentication mechanism was intended to offer safe access to confidential data from any private cloud servers while also protecting the user's anonymity. Mutual authentication proof was performed using Burrows–Abadi–Needham logic (BAN). The protocol's safety was ensured using the AVISPA tool.

With the use of a cloud server, Fan et al. (2017) suggested a novel and lightweight authentication mechanism for wearable devices. This solution enabled mutual authentication while maintaining device anonymity. The hash function and exclusive-or operations were implemented as lightweight cryptographic operations.

Jinsooket et al. (2017) suggested a multi-cloud user authentication system. This solution provided a unified user authentication mechanism for multi-cloud computing applications. It also provided mobile users with mobility and scalability by utilizing a ticket-based authentication approach. This authentication technique was created with the goal of providing secrecy, integrity, access control, and resistance to interception and replay assaults.

Authentication-as-a-Service (AaaS) was proposed by Ibrahim (2016) to enable robust mutual authentication among communication parties in the cloud. Based on Pedersen commitments, a novel protocol for mutual authentication of parties with no previous trust was devised, requiring communication over an AaaS Cloud. Entities might utilize the protocol regardless of the sort of service they want. The AaaS cloud generated the commitment key needed in authentication, eliminating the need to persuade the other side.

For data security in the cloud data center, Victor Chang (2016) suggested the Cloud Computing Adoption Framework (CCAF). They went over the technical specifics of each layer of security and presented an integrated approach for verifying all data. This work made use of the Business Process Modeling Notation.

Liu et al. (2013) suggested a secure data sharing system for dynamic groups using a cloud-based Group Manager. For anonymous data exchange across several Owners in the cloud, group signature and Dynamic Broadcast Encryption methods were utilized. The approach suggested in this study has a flaw in that the group manager may issue all of the keys while also tracing the private keys of group members. The unrevoked users' private keys did not need to be updated when the revocation was completed.

For an effective data access control mechanism, Kan Yang (2015) suggested a new multi-authority Ciphertext policy Attribute Based Encryption (CP-ABE) approach. A trustworthy authority handles all characteristics and distributes keys in Data Access Control for Multi-Authority Cloud Storage (DAC-MACS). To prevent security vulnerabilities, DAC-MACS may be rectified using a unidirectional re-encryption technique.

II. RESEARCH METHODOLOGY

Cloud computing has always been referred as virtualization of an existing server or data center. Subsequently, cloud computing is acknowledged as virtualization of existing data or data centers, providing multipurpose application support and enormous utility to remotely available users or clients [3]. This phenomenon leads to the cloud acting as a service, where services are provided upon request based on subscription or pay-per-use [4]. The cloud computing environment stores the valuable information and offers attractive user applications with reliable service support [5]. With the emergence of new technology, new categories of clouds and services are introduced such as supercomputing as service (SCaaS) and high-performance computing as a service (HPCaaS).

From a security perspective, dealing with large amounts of data is a challenge. The security of CSPs has been investigated thoroughly from a storage standpoint [6, 7, 8, 9, 10]. Two highly sought CSP features that guarantee privacy protection are data availability and integrity. Since the CUs do not have physical access to the outsourced data, it raises the question of data privacy protection in cloud computing, particularly for users with very limited computing resources. Moreover, there are several other factors regarding the CSPs corruption that can deceitfully smash the CUs outsourced data [11]. For instance, a CSP can attempt to sustain its reputation by hiding the security incidents about the customer’s lost data [12]. Cloud services can be financially advantageous; however, there is no guarantee that the stored data will be secure and available at all times. If this continues to be an issue and is not thoroughly examined, the cloud computing environment may never reach its full potential.

Although cloud computing is currently booming, data security remains a top concern for cloud users and would-be users. Some security issues are inherited from classical distributed architectures, e.g., authentication, network attacks and vulnerability exploitation, but some directly relate to the new framework of the cloud, e.g., cloud service provider or subcontractor espionage, cost-effective defense of availability and uncontrolled mashups [14]. Security issues are currently handled by cloud service providers (CSPs). But with the multiplication of CSPs and subcontractors in many countries, intricate legal issues arise, as well as another fundamental issue: trust. Telling whether trust should be placed in CSPs falls back onto end-users, with the implied costs.

User data might be deleted, lost or damaged. First, some CSPs have the policy of taking the highest profit. Therefore, unmodified or unassessed data may be deleted to serve other customers. Second, data loss may also be caused by accidental, e.g., electrical or network failure, or intentional plans, e.g., maintenance or system backup. Moreover, virtual cloud architectures might not be sufficiently safeguarded from inside attacks. Finally, all CSPs cannot guarantee 100% data availability, although some cloud businesses must run on a 7/24 basis. Thus, data privacy, availability and integrity are major issues in cloud data security.

Encrypting and replicating data can solve most of these issues, but existing solutions are greedy in resources such as data storage, memory, CPU and bandwidth. Moreover, cloud data warehouses (DWs) must be both highly protected and effectively refreshed and analyzed through on-line analysis processing (OLAP). Thence, while CSPs must optimize service quality and profit, users seek to reduce storage and access costs within the pay-as-you-go paradigm. Thus, in cloud DWs, the tradeoff between data security and large-scale OLAP analysis poses a great challenge.

Our proposed model ensures that the TPA does not have an access to the stored data by assigning session keys for each auditing task. Once the auditing process is completed, the assigned session keys will be expired and returned to the pool. In addition, the CU uses the strong authentication mechanism (e.g., triple Data Encryption Algorithm and SHA-256) to protect its outsourced data from potential attacks. The aggregation and derivative properties of our model help the three stakeholders to maintain strong authentication processes. A CU sets its priorities, QoS requirements, and anticipates timeframe for the completion of each task within the provided services. If the CU is not satisfied with the agreed requirements, the model immediately would enable the CU to refer the issue of incorrectness and inaccuracy of the paid services to the CSP. This feature of our proposed scheme not only improves the CUs experience but also warns the CSP to keep updating the cloud services and maintaining the agreed QoS according to the service level agreement (SLA).

III. RESEARCH GAPS IDENTIFIED

- ✓ The security related challenges in cloud.
- ✓ Solutions present to handle security related cloud challenges with respect to CUs/CSPs/TPA.
- ✓ How does CSPs handle the identified security challenge?
- ✓ Solutions or guidelines to enhance security in cloud computing.

A. AIM AND OBJECTIVES

The aim of this thesis is to develop a novel secure data sharing method for diverse stakeholders on cloud using privacy protection model.By ensuring these services, we aim at helping CUs/CSPs to identify/handle security challenge with TPA. In order to achieve this aim, the objectives of this thesis are as follows.

- ➢ To design a system to detect and prevent unauthorized users from accessing cloud data.
- ➢ To use cryptographic algorithms/techniques to ensure that CUs are under full control/monitor of TPA.
- ➢ To design and develop a system to control and monitor the usage of resources allocated to the CUs.
- ➢ To design a system to evaluate the performance of CSPs in controlling TPAs and CUs.

B. METHODOLOGY

The proposed method in this thesis is divided into four main parts: (1) CUs communication with TPAs (2) CUs communication with CSPs (3) TPAs communication with CSPs, and (4) DOs communication with TPAs. The methods discuss proposes data security and privacy preserving in cloud computing systems.

C. CLOUD SECURITY CHALLENGES AND ISSUES

- ❖ Security Challenges and Issues

As we studied that cloud computing is one of the emerging approaches along with the less cost, shared resources, pay according to the use based on end user demand. Because of number of characteristics, it is impacted on budget in IT as well as issues related privacy, security and security challenges. The goal of this section is present security challenges and issues in cloud computing.

Under cloud computing environment, end user not aware about where is data stored, who is managing that data as well as other vulnerabilities in cloud computing environment. Below listed are common issues those can be faced by cloud service provider during the implementation of cloud services.

- ❖ Privacy Related Issue

Securing the individual private information is particular individual’s right. Privacy in cloud computing framework is based on model of cloud deployment. The public cloud is one of the promising architectures by considering the concern related to the reduction of cost. However, this public cloud is relying over the cloud service provider in order to manage as well as keep end user’s information which leading to number of privacy related issues such as:

- **Lack of User Control:** In cloud computing framework, processing and sharing of user's important information is not having enough user control while leads to the threats like theft, misuse, or illegal access [11].
- **Unauthorized Secondary Usage:** The data security and profit in cloud computing frameworks is achieved by placing data to legitimate and authorized secondary uses. At present, there are not technical barriers for the secondary uses.
- **Transborder Dataflow and Data Proliferation:** Data proliferation is attributing of cloud computing systems which is composed of number of companies and hence not managed as well as controlled by individual data owners. Copying the data over the many datacenters guarantees the ease of use. It is very challenging to make sure that backup of data or its duplicate copy is not saved or processed with specific authority.
- **Dynamic Provision:** Nature of cloud is vibrant therefore it is not clear that who is responsible legally in order ensure the sensitive data privacy which is stored by end users on cloud server.

❖ Security

In cloud computing paradigm, public cloud is not only increasing the issues of privacy but also increases the security concerns. Below are listed are common security concerns for public cloud:

- **Access:** Accessing the personal and private information is one the threat to cloud security. It may possible that any attacker can try to access the personal information.
- **Data Lifecycle Control:** To ensure the customer that it has control over data, if it removes or delete data vendor cannot regain this data.
- **Availability and Backup:** There is no any surety of availability and back up of data in this environment. In business backup is one of the important considerations.
- **Multi -Tenancy:** It is feature of SAAS that one program can run to multiple machines. CSP use multi-tenant application of cloud to reduce cost by using virtual machine but it increases more vulnerability.
- **Audit:** To implement internal monitoring control CSP need external audit mechanism. But still cloud fails to provide auditing of the transaction without effecting integrity.

❖ Trust

- For every organization, trust is required to gain the profit by using the cloud services. However, cloud is failed to achieve the trust between the end user and cloud service provider. Hence vendor uses this marvelous application should make trust. Weak trust relationship and lack of customer trust cause many problems during deployment of cloud services.

IV. PRIVACY PROTECTION MODEL

We develop a new triangular data PPM to authenticate all the stakeholders (i.e., CU, CSP, and a TPA), as shown in Fig. 1. This model aims to ensure the integrity of the CU's data stored in the cloud data center, which can be retrieved on-demand at any time. Recent work has focused more on evaluating the reliability of the CSP in terms of its security and data privacy measures as well as its compliance with its SLA. However, little work has been done to evaluate the reliability of the CU and the TPA. Therefore, our proposed model evaluates the CU's integrity in terms of their ability to not violate any of the agreed upon rules defined and set by the CSP in the SLA. Furthermore, the TPA audits the services provided to the CU and ensures the TPA's integrity (i.e., the TPA is not disclosing the CU's contents from the information obtained through the auditing process).

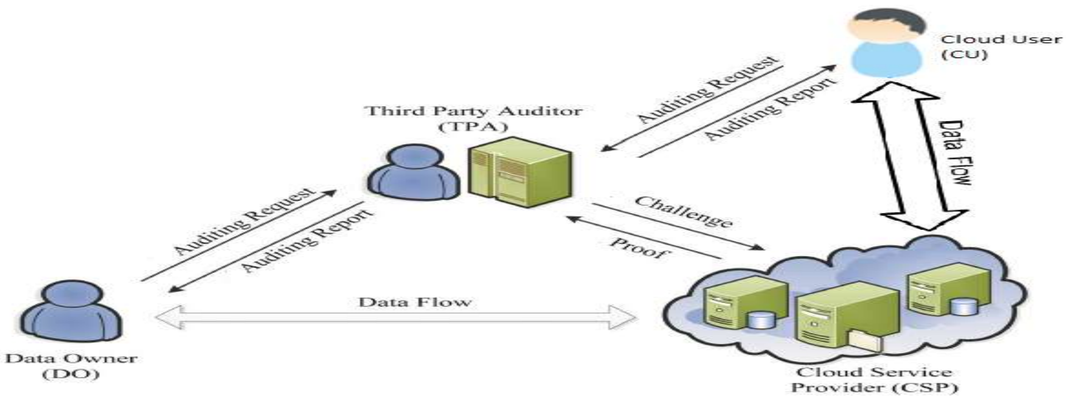

Fig. 1 A basic Cloud Computing Privacy-Preserving Authenticating Model

The CU and the CSP provide a mechanism to audit the TPA. Thus, the CU verifies whether the TPA performs the assigned auditing within the given specification and the time frame. Furthermore, the CSP also verifies whether the TPA performs its auditing tasks using the assigned time-released session keys.

V. CONCLUSION

Cloud computing is technology which is used to provide the valuable IT services in term of resources like software, infrastructure, platform, storage etc. For both big data and cloud computing, data storage is main goal of any organization. As cloud computing is open environment technology, security is major challenge for each organization while storing their important data over the clouds. Therefore, security of data and privacy preserving is gaining the significant attention of many individual or group of researchers for both cloud, so our developed system gives a solution for CUs/TPAs/CSPs to access data/information and share resources securely.

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An Overview On The Food Fortification Process And Wheat Fortification In India

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ABSTRACT:

The term 'nutrition' refers to the act of eating food that meets the nutritional needs of the human body. The foundation of a healthy lifestyle is a well-balanced diet and frequent exercise. Adequate nutrition is a must for everyone's health and happiness, but particularly for children and teenagers. Nutrition is crucial for healthy development of the human body from the moment of conception. More over a third of the world's population suffers from iron, iodine, and vitamin A deficiencies; these deficiencies are widespread in India as well. Micronutrient deficiencies are responsible for around 7% of the worldwide burden of illness, according to the World Health Organization. Iron and vitamin A deficiency are two of the top 15 leading causes of death worldwide. Food fortification has been identified as a promising strategy for reducing prevalence of micronutrient deficiencies, and has been endorsed by both the World Health Organization and the Food and Agriculture Organization. This Article provides a general summary of the Food Fortification Method and Wheat Fortification in India.

Keywords: Nutrition, Wheat, Flour Fortification, Dietary Requirements, Good Health, etc.

I. INTRODUCTION

Wheat and maize flour fortification has been carried out in several nations for many years. Deficiencies in vitamins and minerals were highlighted as a major public health issue during the inaugural United Nations Summit on Children in 1992. One of the strategies to treat these inadequacies is staple food fortification. In particular, wheat and maize flour fortification has been found as one of the finest vehicles for the addition of a variety of essential vitamins and minerals generally termed micronutrients. Local chakki mills, as reported by FSSAI, have a monopoly on the wheat market. Around 70 percent of overall wheat market is unorganized and is controlled by these tiny chakkis. In instance of wheat flour, the branded packaged wheat flour represents barely 5 percent of the flour market and remainder is by tiny local chakki mills. Number of roller flour mills and commercial chakki mills is barely about 1 percent of total local chakki mills in the nation.

The food eaten by a person comprises of nutrients. These nutrients are necessary for growth and development of human body. The body needs each vitamin in a certain amount. Carbohydrates, proteins, lipids, etc. go under the category of macronutrients, which are needed in relatively large quantities, while vitamins and minerals fall under the category of micronutrients, which are required in relatively tiny quantities. However, they're both vital to people's health. Each vitamin is vital to human health in its own way.

II. FOOD FORTIFICATION

It is well-established practice in industrialized nations to add vitamins, minerals, and other nutrients to staple foods and encourage their intake as a means of combating widespread micronutrient deficiencies, most notably in vitamin A, vitamin D, vitamin B, iodine, and iron. Salt iodization, often known as the fortification of salt with iodine, was first used in Sweden and the United States of America in the early 1920s.

From around 1940 on, it was normal practice to fortify cereal with Vitamins B1, B2, and B3. Young children's food items were also enriched with iron to lower the prevalence of iron deficiency in this age group. In recent years, the United States, Canada, and around 20 other Latin American nations began fortifying their wheat with folic acid. Food fortification schemes in wealthy nations have been so successful that they have lately drawn the attention of developing countries keen on improving the nutritional status and health indices of their populations. The World Health Organization (WHO) acknowledges that fortified foods are one of the most cost-effective ways that have been proved to reduce the prevalence of formerly frequent micronutrient deficiencies. "A major section of the world's population has seen significant improvements in health, economic, and educational metrics as a result."

2.1 Advantages and Disadvantages of Food Fortification

In order to prevent and manage micronutrient malnutrition, the World Health Organization and the Food and Agriculture Organization created guidelines on food fortification with micronutrients. You can see the pros and cons of food fortification in table 1 below.

Table 1: Advantages and Disadvantages of Food Fortification

Advantages	**Disadvantages**
Help in lowering the risk of multiple deficiencies aroused due to seasonal deficits in the food supply or poor quality of diet.	Everyone in the population is exposed to increased levels of micronutrients in food, irrespective of whether or not they will benefit from fortification.
Fortified foods, if consumed on a regular and frequent basis, help maintain body store of micronutrients more effectively and efficiently.	A specific fortified foodstuff may not be consumed by target population.
Fortified food can supply the micronutrients in amounts that approximate to those provided by a good, well-balanced diet.	Population in rural areas or in poor segment, who are at greatest risk of micronutrient malnutrition, usually don't have access to such fortified food in their areas, may be due to due to low purchasing power or ineffective or underdeveloped distribution channel.
It is significant approach for young children who require a regular supply of micronutrients for growth and development and for women during pregnancy and lactation period.	Since, infants and children consume small quantity of foods; they are less likely able to get their recommended intakes of micronutrients.
It's a cost-effective approach than supplementation and doesn't require changes in existing food consumption patterns.	Technical issues pertaining to food fortification yet needs to be fully resolved, especially regarding appropriate levels of micronutrients, stability of fortificants, as well as acceptability by consumers including organoleptic factors.

Fortification of widely distributed and consumed foods has the potential to improve the nutritional status of a large proportion of the population, both poor and wealthy.	Many undernourished population groups often rely on own-grown or locally produced food; thus, they are denied of the benefits of fortified foods.
If properly regulated, fortification carries a minimal risk of chronic toxicity.	Knowledge about the impact of interactions among different nutrients that are added as a fortificant is still lacking
It is feasible to fortify food items with several micronutrients simultaneously, in order to reduce the risk of multiple micronutrients deficiency.	If fortification is not done appropriately, it may affect the organoleptic qualities of food items and stability of micronutrients.

(Source: Guidelines of Food Fortification by WHO and FAO)

III. NATIONAL CONSULTATION ON WHEAT FLOUR FORTIFICATION IN INDIA

Indian government-funded programmes like the Integrated Child Development Scheme (ICDS) and the Mid-day Meal Program have been using food fortification for some time (MDM). Food fortification has been included in the Indian government's plans to end micronutrient deficiency. The following fortification programmes illustrate the government's commitment to addressing micronutrient deficiencies via food fortification:

- **Fortification of Vanaspati:** Vanaspati of Hydrogenated Oil is being mandatory fortified with Vitamin A and D for more than 50 years in India.

- **Iodization of Salt:** Salt was fortified with potassium iodate in 1962 in few districts and now iodized salt has reached everywhere in India till villages.

- **Fortification of Wheat Flour:** West Bengal and Gujarat's governments began adding vitamins and minerals to wheat flour distributed via the Public Distribution System in 2006. Fortification of wheat flour was eventually implemented in many additional states via social safety net programmes including PDS, ICDS, and Mid-Day Meal. Fortified wheat flour brands were also developed by major corporations and food industry players via open commercial marketplaces, including General Mills, ITC Limited, Cargill, and Hindustan Unilever Ltd.

- **Fortification of Milk:** Fortification of milk with Vitamin A was first implemented in 1980 by the Ministry of Food and Civil Supplies of the Government of India. Milk is fortified with vitamins A and D by a number of federations and cooperatives now. These include the Rajasthan Cooperative Dairy Federation, Mother Dairy, the Karnataka Dairy Federation, the Haryana Dairy Federation, and Mother Dairy.

WHO, in partnership with Ministry of Health & Family Welfare, UNICEF and UNWFP has hosting a 'National Consultation on Wheat Flour Fortification in India', in New Delhi on 11-12 August 2015?

Anemia affects more than half of the Indian population, and a lack of folic acid is blamed for many cases of congenital malformations. To address these concerns, fortification of staple food has been highlighted as an essential and cost-effective public health strategy.

The consultation assessed global and national scientific and programmatic data on implementation, feasibility and effect of wheat flour fortification. "Its target audience consisted of government agencies, food companies, United Nations agencies, academic institutions, scientists, and professionals working on wheat fortification projects in India." The debates prepared the way for addressing the problem of micronutrient deficiencies, concentrating on anemia and neural tube defects (NTDs), in order to make suggestions for future implementation of wheat flour fortification with iron, folic acid and vitamin B12 via numerous channels.

Consultation helped bring together national and subnational partners to advocate fortification as an approach to prevent anemia and lower the prevalence of NTDs in the Indian population.

IV. WHEAT FLOUR FORTIFICATION

Food fortification is the adding of nutrients to foods while they are being processed (WHO and FAO 2006). (WHO and FAO 2006). Food fortification, also known as enrichment, is a novel intervention in the health field since it is provided by the commercial sector, as opposed to the governmental sector, as is the case with other public health programmes. After the wheat kernel is milled, the endosperm is removed from refined white flour while the bran, germ, and endosperm remain in whole-grain flour (Bauernfeind and DeRitter 1991). Small quantities of nutrients, mainly vitamins and minerals, are added to this flour in the mills. Wheat flour may be fortified in big, industrialised mills or in small, non-industrialized mills.

Fortification may be used to increase the nutritional density of wheat flour (with a few notable exceptions) (WHO and FAO 2006). Wheat flour may be fortified to restore some of the nutrients lost when the wheat kernel is milled. Restitution or restoration occurs when nutrients, such as the B vitamins thiamin, riboflavin, and niacin, are added back to flour by fortification (Bauernfeind and DeRitter 1991).

Nutrients may be restored to the kernel at the same, reduced, or increased concentrations. Fortification allows for the addition of nutrients to flour that are not present in the wheat kernel. One such vitamin is vitamin B12 (USDA 2020). Supplemental nutrients are often provided in the form of fortification, when one element is replaced with another (s). Fortificants, also known as fortification chemicals, are used to provide nutrients to foods that naturally lack them. Niacin may be supplemented in three different forms: nicotinic acid, nicotinamide, and niacinamide (WHO and FAO 2006). Because the purpose of fortifying wheat with nutrients is to improve human health, it makes sense to prioritise the usage of bioavailable forms of these elements. More expensive than other, less bioavailable forms (such as NaFeEDTA compared to electrolytic iron), but less of them are required to provide the same health benefit (Hurrell et al. 2010).

There are a variety of reasons why certain vitamins, minerals, and other fortificants are not routinely added to wheat flour during the fortification process. Vitamin A, for example, is less bioavailable when taken alone than when combined with other foods. “Oil, margarine, and butter are superior fortification alternatives since they are lipid-rich and facilitate vitamin A absorption.” Adding vitamin A to flour makes it more nutritious, but it also increases the price per serving due to the processing needed to encapsulate the vitamin before it can be combined with flour (WHO and FAO 2006).

A fortificant may interfere with the technical processing or sensory qualities of the food created with fortified flour. For example, ferrous sulphate may produce rancidity in high-fat meals (WHO and FAO 2006). (WHO and FAO 2006). Flour fortification in these foods may make use of a less reactive iron component.

4.1 Advantages of Fortifying Wheat Flour

- Fortified wheat flour is an excellent vehicle for adding nutrients to the diet as wheat flour is commonly consumed by all people.
- Wheat flour fortification is a safe and effective means of improving public health.
- Iron, Folic acid and Vitamin B12 when added to wheat flour are important for fighting anemia and blood formation.
- During milling of wheat, nutrient losses take place. Fortification helps in adding back these nutrients.
- Cost effective method to prevent nutritional deficiencies.

4.2 In India

Due to its popularity, wheat flour has been chosen by the FSSAI as the best food carrier for fortification in India. Wheat flour intake ranges from 250 to 300 grammes per person, per day. More than half of the population, across all socioeconomic groups, suffers from micronutrient deficiencies, specifically anemia. One of the most suitable and cost-effective strategies to address this issue is fortifying wheat flour with iron, folic acid, and vitamin B-12. Roti (Chappati), Parantha (Indian flatbread), Bread (both savoury and sweet), and Halwa are all made using wheat, a mainstay in Rajasthan.

Adding vitamins and minerals to wheat flour is seen as a preventative measure that may help reduce the prevalence of micronutrient deficiencies. Wheat flour fortification schemes are the most effective way to achieve nutritional impact, according to the World Health Organization. Micronutrients including Iron, Folic Acid, and Vitamin B-12 are added to wheat flour as part of the fortification process.

Based on extraction, fortificants compound, and predicted per capita flour availability, the World Health Organization (WHO) recommends a target amount of micronutrients to be added to wheat flour.

The amounts of nutrients that the World Health Organization suggests should be added to wheat flour are listed in the table below.

Table 1.3: Recommended levels of nutrients to be added into wheat flour

Nutrient	Flour Extraction Rate	Compounds	Level of nutrient to be added in parts per million (ppm) by estimated average per capita wheat flour availability (g/day)1			
			75- 149 g/day	< 752 g/day	> 300 g/day	150- 300 g/day
Iron	**High**	NaFeEDTA	40	40	15	20
	Low	Ferrous Sulphate	60	60	30	20
		NaFeEDTA	40	40	20	15
		Electrolytic Iron	NR	NR	40	60
		Fumarate Ferrous	60	60	20	30
Vitamin B12	**Low or High**	Cyanocobalamin	0.02	0.04	0.008	0.01
Folic acid	**Low or High**	Folic Acid	2.6	5.0	1.0	1.3
Zinc	**High**	Zinc Oxide	100	100	30	40
	Low	Zinc Oxide	55	95	70	80
Vitamin A	**Low or High**	Vitamin A Palmitate	3	5.9	1	1.5

V. CONCLUSION

Several bodily processes rely on the mineral content of the meals we eat. “These are similar to vitamins in that they may be gotten from eating a wide variety of foods.” Iron is needed for red blood cells to carry oxygen, calcium and magnesium are crucial for bone health, iodine helps prevent goiter and keeps you mentally stable, etc. The benefits of food fortification in reducing micronutrient deficiency have been shown in several studies. Although micronutrient malnutrition is common in both urban and rural settings, it disproportionately affects the rural population, particularly children under the age of five and women. Due to financial restraints, they are unable to purchase branded, pre-packaged, fortified food products anyplace near them. Fortifying wheat flour on a modest scale has the ability to greatly enhance the health of the rural people. Implementation of such models is an effective way for enhancing community understanding and attitude towards relevance of fortified wheat flour which help boost the utilization of fortified wheat flour by families and eventually improve the nutritional status of people live in rural regions.

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Pride and Prejudice: Paradigm Shift from Reading As Literature And Its Film Adaptation

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ABSTRACT:

The goals of the hypothetical part are to clarify the fundamental themes (money, class) of the novel, to classify Austen's style of composing and to investigate the plot. Speculations of "early introduction" as exhibited by literary theoreticians and clinicians will be talked about, including the effect of early introductions on relationship improvement. Jane Austen's run of the mill linguistic and satiric tone will be likewise inspected. Innumerable investigations of the book Pride and Prejudice have been made and since cinema assumed control over the world, critics and literary theoreticians started to contrast the novel with its film adaptations. Every age has its own adaptation and this proposition centers around the most recent one.

Keywords: *goals, themes, relationship, critics, adaptation, cinema, literary.*

I. INTRODUCTION

1.1 FILM ADAPTATION

A film adaptation is a kind of subsidiary work, depicting the transposition of a play, novel, or other literary source to film. A cinematic exchange is the most well-known routine with regards to literary adaptation. The association between account fiction and film has dependably been extremely alluring to filmmakers. Be that as it may, as culture changes and innovation build up, the potential outcomes of adaptation are in certainty boundless. It isn't abnormal that literary works are presently being adjusted into musicals, plays, computer games or comic books.

The novel: pride and prejudice

Pride and Prejudice, the adored and much-investigated British novel composed by Jane Austen and distributed in 1813, has seen a plenty of film, theater, and TV adaptations over the 200 years it has been in print. The novel has been both reprimanded and cherished for a similar reason: its female characters. The women of Pride and Prejudice are regularly broken down as characters whose destinies remark on the circumstance of upper- and middle-class women amid the mid nineteenth century, especially as far as sex, class, and riches.

The plot concerns five little girls who won't acquire their dad's home or wage and, in this manner, must wed well to keep up themselves after his demise. Elizabeth Bennet, in the novel, is viewed as a character who opposes the prohibitive sex parts of her time by declining to wed for material increase notwithstanding when that is by all accounts her lone alternative. Amid this time, women were required to wed who their folks picked and were not given substantive trainings or urged to show their mind. Under the custom of primogeniture that kept up awesome domains in place crosswise over ages by abandoning them to an oldest male relative, couple of women acquired straightforwardly from their fathers.

From book to screen

In spite of the way that Pride and Prejudice is considered being extraordinary compared to other known love stories in English writing, one shouldn't tragically narrow it to simply being an anecdote about Elizabeth and Mr Darcy. Among others, money, property and interest additionally are extremely essential. Concerning the way that, notwithstanding a love story, Pride and Prejudice likewise is a novel about social levels and their disparities, the 2005 form certainly succeeded more as far as making the difference between the Bennets and the other, socially observed, higher families. The contrast amongst Longbourn and alternate houses gave in the '95 variant is, regardless of the way that the film-creators searched for obvious contrasts in the sizes and furniture, most likely not that unmistakable to the group of onlookers, wherefore the hole between those diverse social classes is probably going to be evaluated distinctively or even misjudged.

Joe Wright and his group, in their way to deal with make everything look as genuine as would be prudent, accomplished an unmistakable contrast, particularly when seeing Longbourn, which fairly resembles a major homestead house, with a ton of animals and fabric lines in the garden and along these lines certainly not as respectable as Netherfield Hall. Jane Austen frequently condemned the romantic development amid her opportunity. Along these lines it's somewhat impossible that she needed her novel to be viewed as being 'only' a love-story and therefore excessively romantic. Taking a gander at the two adaptations, it can be watched that particularly the '95 forms have a somewhat abnormal state of romance, particularly with regards to the completion.

Seeing the way that these days romance is so acclaimed and wanted in movies and serials, it isn't so much that shocking that for instance the twofold wedding of the two oldest Bennet sisters is appeared. Yet, considering the way that it's a novel by Jane Austen, those to romantic scenes are not that fitting. They additionally stand in a significant complexity to the way that appropriate feelings were ignored and not appeared in a large portion of the scenes. In a few focuses, the 2005 form likewise had a couple, perhaps excessively romantic scenes, additionally as to the completion. Concerning Austen's aversion towards romance, by then the two adaptations were perhaps affected excessively by the way that romance these days is vital as far as making an effective film or serial.

II. TITLE: PRIDE AND PREJUDICE

Originally the novel would have been called First Impressions however with the enormous accomplishment of Austen's Sense and Sensibility it was just insightful to utilize a similar example of similar sounding word usage. Gary Dexter (2008) calls attention to that Jane Austen appreciated novelist, diarist and writer - Fanny Burney. He explores how Pride and Prejudice got its name and passes on that "Cecilia, the novel of 1782 by Fanny Burney, matches Pride and Prejudice strikingly in plot and topic". Dexter says that in the last part of Cecilia the promoted wording 'PRIDES and PREJUDICE' returns three times.

III. MAJOR THEMES IN THE NOVEL

Class:

Jane Austen depicted society as controlling over people; with imperceptible limitations, limits and holes, which the appropriately dutiful individual won't set out to cross. In a profoundly organized society, it is exceptionally critical who might be "associated" to whom. Some portion of the show is in observing whether two individuals of totally extraordinary foundation and class can oppose the associations which are endorsed for them by social standards.

Tanner [1986g, p. 130] portrays exceptionally well the best fulfillment of the book when he calls attention to that there is a shot for

Elizabeth and Darcy to join in spite of the society and [1986h, p. 130] “that there is maybe a tall tale touch to their aggregate felicity at the conclusion in the dream world of Pemberley ought not demoralize us from perceiving the significance of clutching this plausibility as one which is basic to a healthy society”.

Marriage

The opening line of the novel sets the marriage theme of the novel. Pride and Prejudice parodies marriage that has moved toward becoming preferably a monetary than social action. Despite the fact that censuring imbalance of women and their ‘duty’ to marry undesirable men to be financially secured, Austen comprehended the impediments of remaining single extremely well. Charlotte exhibits her announcement by marrying Collins who has offered her financial security and a specific social status. A romantic romance amongst Jane and Bingley was one to end with wedding chimes as well. Both are delicate and minding individuals. Their common sentiments and comparable characters show they should lead an extremely cheerful marriage even notwithstanding Bingley’s absence of will to stand up to his sister and Darcy and battle for his love. By and by, Magee (1987b, p. 201) says that Jane and Bingley’s ideal love story is as opposed to Elizabeth and Darcy’s sensible love.

Money

While talking about the principle financial changes of the eighteenth and nineteenth century Robert Markley concentrated essentially on the considerable worry for money and its influence in Pride and Prejudice. The subject of money regarding marriage is very regular for every one of Austen’s champions (aside from Emma). Being removed from their homes, they are truly compelled to secure a reasonable husband to maintain a strategic distance from a humiliating and pitiless life in the roads of the mid nineteenth century. Same connected for Elizabeth and her sisters who had no legitimate right in acquiring Longbourn. This home was involved thus it could just go through male individuals from the family. The main motivation behind why Mrs. Bennet anticipated Elizabeth to marry Mr. Collins was that he happened to be next male in line. This marriage would have guaranteed that Longbourn remained in the family.

IV. PRIDE AND PREJUDICE ON SCREEN

After the birth of cinema toward the finish of the XVIII century, film-creators have frequently adjusted well known novels or tales for their first endeavors of entertainment. Jane Austen’s work has not showed up in the early cinema creation, during the times of quiet movies. This nonappearance might be represented by considering the term ‘quiet’ itself. How could a quiet portrayal praise the character of Elizabeth Bennet, best case scenario? Deborah Cartmell finds a quiet adaptation “quite absurd”, in particular due to “the delight being in the selection of words and in the verbal nuances”. How could a quiet film speak to Darcy’s disdain towards Elizabeth at the primary ball or Elizabeth reading Darcy’s letter or her witty replies to the incitements of Lady Catherine de Bourgh?

Deborah Cartmell instead contends that to adjust a novel by Jane Austen is troublesome. She starts from Austen’s dialect, maintaining that the significance of her novels lies in the exchange more than the presence of the fiction and a decent script must have the capacity to underline it. The inconspicuous relationship amongst incongruity and the storyteller is troublesome too. For instance, Elizabeth and the storyteller don’t generally have a similar point of view. To adjust Elizabeth’s refusal to Mr. Collins’ insistent proposition is a test for screen-writers.

One of the focal themes of the novel is marriage. In the novel, all marriages (except for the Gardiners) are spoken to as far from the romantic perfect of a couple impeccably in love like in fairy tales. The book is punctuated by descriptions and reflections on bungles, which are a test to speak to in a visual adaptation, much the same as it occurs with the parenthood issue. Particularly parenthood is found in a negative light with unequivocal dissonant note in sentence like the final “Glad for all her maternal feelings was the day on which Mrs. Bennet disposed of her two most deserving daughters”.

Finally, the epistolary convention is as yet solid and present in the book. The numerous and long letters that the characters read, the long and excited elucidation letter by Mr. Darcy or the infinitely exact record of the London circumstance by Mrs. Gardiner are essential sections which enable readers to relate to the characters. Connectors can select distinctive methodologies with a specific end goal to interpret the fascination of the book into screen, despite the fact that a few techniques want to overlook the letters and to find a superior arrangement.

For a long time, the main Austen film adaptation, the first of the extra-large screen adaptations of Pride and Prejudice was a “Hollywoodized” movie which took after the convention of the “Screwball Comedy” of the 1930s and 1940s. It kept going 118 minutes and it was coordinated by Robert Z. Leonard, created by Hunt Stromberg and circulated Metro-Goldwyn-Mayer, winner of the Best Art Direction (Black and White) Academy Award in 1941.

Aldous Huxley and Jane Murfin were adjusted the script from the 1935 phase performance by Helen Jerome, despite the fact that the real commitment to the script came just from Murfin. At the time, Huxley was a notable novelist and writer, so it is most likely that the maker liked to utilize his name as an ‘assurance’ and to “mean the nature of the words and regard for the novel”. Since he earned a tactful measure of money in Hollywood, Huxley was embarrassed about himself either as a result of the final item or in light of the fact that he perceived his rare involvement in the writing. Claire Harman reports that in a letter to Eugene Saxton, Huxley depicted his work as being “an odd, cross-word confound occupation” and “one tries to do one’s best for Jane Austen; yet really the very certainty of transforming the book into a photo should essentially modify its entire quality in a significant manner. [...]

The insistence upon the story instead of the diffuse incongruity which the story is intended to contain is a noteworthy falsification of Miss Austen”. Certain extra exchange in the screenplay have been commended for they could be “the kind of thing which Jane Austen may have said”, as George Bluestone contends in his examination. According to Cartmell, the motion picture was effectively and certainly acknowledged as “authentic Austen” on account of Huxley’s name. Compared to the 1935 performance center script, the 1940 adaptation took after the original novel all the more dependably, since the play was a substantially more disentangled form of the story with just three Bennet daughters and less entangled romantic relationships. In spite of this, the film was not really ‘authentic’ as its audience may have expected for a sensible measure of reasons.

V. COMPARISON OF PRIDE AND PREJUDICE FROM TEXT TO ADAPTATION

The cozy relationship amongst literature and film has been comprehensively examined from a methodological and an interpretative point of view. Comparison of various kinds of art (for instance a relationship of film to literature) falls under a scholarly field of Comparative literature (Wikipedia.org, online).

There is one definition by Henry Remak (2012, p. 3) that is proper for this thesis: "Comparative Literature is the investigation of literature past the confines of one particular nation, and the investigation of the relationships between literature on one hand and other regions of learning and conviction, for example, the arts (e.g. painting, sculpture, architecture, music), philosophy, history, the social sciences, (e.g. politics, economics, sociology), the sciences, religion, and so forth., on the other.

In brief it is the comparison of one literature with another or others, and the comparison of literature with other circles of human expression.

To beat hindrances associated with media comparison one must learn completely about a masterpiece and its adaptation. There are numerous perspectives that ought to be mulled over. Initially, some examination ought to be done on the chronicled setting. In what period did the author live; what do we think about the period or about the author themselves? Just in the event that we understand the author, would we be able to dissect the meaning of their work.

Time frame

When watching the 2005 movie clearly not just the characters have been exchanged onto the screen taking into account the time origins in which the adaptation was made. It shows up the film writers conveyed their own particular distinctive thoughts regarding the book. The primary observable contrast is the time allotment. The book happens in the vicinity of 1797 and 1813, when the novel was acknowledged for distribution by Thomas Egerton of London. In any case, time allotment of the film is in a prior period.

Irregularities in a fashion display

At the point when time traverse is thought about it is perceptible that the outfits in the film don't quite compare with Regency mold. Give us a chance to examine the most evident mistakes. Regency design was significantly more agreeable than later (Victorian) style. It didn't arrange one to wear corseted or firmly fitted dresses from the abdomen up and the skirts were not weighted up with crinolines says Ribeiro (1995, p. 97).

It appeared as though there were no limitations, maybe aside from hemlines that couldn't be shorter than a couple of inches over the lower legs. Nevertheless, there were a few strategies that exhibited style. For instance, when attending a ball – open or private – women were instructed to be cognizant with respect to the shade of their dress; of the extras like gloves and fans; and particularly of décolleté fittingness.

As much as the makers ruined the honest photo of women's clothing, they were surprisingly right in depicting gentlemen's design. The Regency designs were influenced by French Revolution and the equestrian clothing of English "country gentlemen" (Lord Scott, We Make History, online).

Among the regular highlights had a place single or twofold breasted tailcoat; waistcoats; linen or cotton shirts; breeches, pantaloons and pants; the neckcloth or cravate; an extremely tall cap; high boots and stockings.

VI. CONCLUSION

The main intention of this paper was to contrast Austen's novel Pride and Prejudice with its 2005 film adaptation coordinated by Joe Wright. At first, we defined the term adaptation and arranged diverse methodologies towards transforming a literary text on the screen.

The method of "borrowing" was affirmed all through the thesis through numerous cases and comparisons. Before analyzing the novel, an endeavor was made to decisively classify Austen's writing to demonstrate her extraordinary style and sequentially set her writing in the season of the Regency era.

A broad segment of the theoretical part of this thesis managed the significant themes of the novel, relying on the examination of literary theoreticians. The themes of social class, money and marriage dominate the novel and were dissected altogether. In another part we made a mental inquiry: "How troublesome is it to truly become acquainted with some person?" and let mental theories of acknowledgment and reassessment control us.

The useful part of the thesis concentrated on a comparison of the novel and its adaptation. At to start with, we concentrated on a theory of comparison and defined a scholarly field of Comparative literature. A segment committed to Time traverse and Fashion portrayed clear anomalies in the 2005 adaptation in detail.

An extensive focal point of the functional area contrasted the novel's main characters with their delineation in the film. A contrast was pinpointed and endeavors to understand the chief's intentions and approach made. Likewise, the thesis valued Wright's enthusiasm for nature and shrewdly picked areas, previously presenting a specific number of the film surveys.

A section focusing on several picked scenes and comparing them to the book was then included. We asked whether the executive's intention was honest to the novel and what the result was.
After the exploration and utilization of recommended comparative methods we arrived at a conclusion that Pride and Prejudice 2005 can be classified as a satisfactory adaptation.

Despite the fact that the focal theme is a fairy-story romance between the two main characters, the filmmakers have made an enchanting contemporary picture of Austen's world. Given the length of the adaptation it is surprising that each noteworthy discourse and occasion was available. A couple of inaccuracies and modern subtext can be pardoned for the delightful landscape, shrewdly picked areas and pleasing music. Quality exhibitions by numerous popular on-screen characters are another in addition to for the movie.

Nevertheless, the extending ending ought to have not left the cutting room. It is obviously that this adaptation would not find supporters among standard adherents of Jane Austen however is more than adequate for modern audiences who need to appreciate the movie not contrast it with the original.

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Effect of Circuit Training For Development of Speed among Soccer Players of Khammam District

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Abstract:

The purpose of the present study to find out the effect of Circuit Training for the development of among Soccer Players of Hyderabad District. The sample for the present study consists of 30 Male Soccer Players of Khammam District between the age group of 18 to 22 Years out of which 15 are experimental group and 15 are controlled group. Circuit Training were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training for six weeks . Pre Test and Post Test were conducted in 50 M Run to measure the speed among experimental group and controlled group ..This study shows that due to the Circuit training there is a improvement of experimental group in Speed and controlled group is decreased in speed.

Key Words: Circuit Training, speed, Hockey Players etc.

Introduction

Exercise training increases motor skills in human. In this regard, it is crucial to set up proper training programs consistent with motor needs and physiological properties of every sport. Jumping speed and power are invariably considered as significant factors in performing many sport skills. Sport experts suggest that weight training and plyometric workout are two training methods that improve athletes' power and skills. From among modern training methods, greater attention has paid to muscular fitness exercises.

Previous Studies:

Prof. Rajesh Kumar (2022) Studied the effect of plyometric and medicine ball exercises on the development of explosive power among school sprinters of Hyderabad District in Telangana State. To achieve this purpose, 30 sprinters in the age group of 14–16 years taken as subjects. The selected 30 subjects were divided into three equal groups of ten members each as two experimental groups and one control group, in which Group – I (n = 10) underwent plyometric exercises for 3 days/week for 6 weeks, Group – II (n = 10) underwent the medicine ball exercises for 3 days/week for 6 weeks, and Group – III (n = 10) acted as control who are not participate any training apart from their regular activities. The standing Broad Jump Test pre- and post-test were conducted among three groups to assess the explosive power of legs. The results of the study were found that there was a significant difference of performance due to plyometric exercises and medicine ball exercises when compared with the control group for development of explosive power

Circuit Training is developed by the Scientist Morgan R.E. and Adamson G.T. at University of Leeds in the year 1957. This is Resistance to develop the motor abilities such as strength, Speed and endurance. **Circuit training** is a exercise "circuit" which consists of prescribed exercises which includes for the upper body, lower back, abdomen and Lower body. It can be done with own body Weight and using the resistance exercises such as Barbells, Medicine Balls etc.Circuit Training were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training for twelve weeks

Purpose of Research

The purpose of the present study to find out the effect of Circuit Training for the development of among Soccer Players of Hyderabad District.

Methodology:

The sample for the present study consists of 30 Male Soccer Players of Khamma District between the age group of 18 to 22 Years out of which 15 are experimental group and 15 are controlled group. Circuit Training were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training for six weeks . Pre Test and Post Test were conducted in 50 M Run to measure the speed among experimental group and controlled group

Showing the Sample of the Study

Sl. No.	Category of the subjects	Number of subjects
1.	Experimental group	15
2.	Control group	15
3.	Soccer Players	30

Type of Circuit Training Exercises:

Upper-body : Pull Ups, Military Press, Push Ups, Back Press, Biceps Curl, Bent Over Rowing, Up Right Rowing, Wrist Curl

Core & trunk: Good morning Exercise,Sit-ups,V Sit ups **and** Bridge

Lower-body: Half Squats,Jumping with Squats,Jumps A Stride,Shuttle Running, Jumping on Spot

Total-body: All body exercise, Surya Namaskars **and** Skipping

Data Collection

To measure the Speed 50 M Run Test is conducted 50 Meters Run:

Purpose: The aim of this test is to determine the speed. Pre Test and Post Test were conducted in 50 M Run among experimental group and controlled group.

Research Results

This study shows that due to the Circuit training there is a improvement of experimental group in Speed and controlled group is decreased in speed among Soccer Players.

Table 1:Group Statistics of Circuit Training and Control Group of soccer players

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
RUN50MPRE	CIRCUIT	15	7.14	.481	.087
	CONTROL	15	7.10	.466	.082
RUN50MPOST	CIRCUIT	15	6.73	481	.087
	CONTROL	15	7.21	359	.065

Recommendations for further Research:

It is concluded that the Physical fitness is a prime asset and players must possess strength, endurance, speed, good reflexes, ability, suppleness and controlled weight, all these attributes can be acquired only by constant year round practice. This study shows that due to the Circuit training there is a improvement of experimental group in Speed and controlled group is decreased in speed.

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Role of Print and Electronic Media during Post Covid Pandemic 19 in India – A Review

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Abstract:

Print and electronic media are an essential service to the community to give proper information regarding the Pandemic Covid 19. The Covid 19 health crisis is dominating the news on a global scale. Print and Electronic Media recognized as powerful force to give accurate information to the people living in community all over the world. It helps individual to take the Positive Health measures. Print and electronic media will have positive and negative impact. Positive impact is to take the health measures, physical distancing, use of face mask, information regarding the use of physical exercises, Yoga, Meditation, Immunity diet etc. Hence Role of Print and Electronic Media in Post Pandemic Covid 19 Plays major role in regulating the disease and Post Covid Scenario also. Key words: Covid 19, health crisis, print and electronic media etc.

Introduction:

Coronavirus disease (COVID-19) is an infectious disease caused by a new virus.The disease causes respiratory illness with symptoms such as a cough, fever, and in more severe cases, difficulty breathing. Print and electronic media are an essential service to the community to give proper information regarding the Post Pandemic Covid 19.

Discussion:

Role of Electronic and Print Media to spread the following awareness through News Papers and Television in the Post pandemic Era

Health Measures: Doctors and Health Professional Talk in Television and Write up in News Papers to reach the public.

- Clean your hands often. Use soap and water, or an alcohol-based hand rub.
- Maintain a safe distance from anyone who is coughing or sneezing.
- Don’t touch your eyes, nose or mouth.
- Cover your nose and mouth with your bent elbow or a tissue when you cough or sneeze.
- Stay home if you feel unwell.
- If you have a fever, a cough, and difficulty breathing, seek medical attention. Call in advance.
- Taking timely Medicine by Patients of Diabetic, hypertension etc.

- Do not go the crowded places like markets, religious gatherings, meetings etc.

Psychological Talk in Print and electronic media : Psychologists talk in Television and write up in the newspapers for the following Psychological Problems.

- Anxiety, or fear and worry, can happen to anyone from time to time, too. It's not unusual to experience anxiety before a big event or important decision.
- But, chronic anxiety can be debilitating and lead to irrational thoughts and fears that interfere with your daily life.

How to improve the immunity during Covid 19:

There is no Medicine for Covid -19 Electronic and Print Media must give News how to improve the immunity. Prevention is better than cure.

Enhancing the body natural defence system plays a important role to maintain good health of the Individual.

1. Eating Immunity food. Diet Rich in antioxidants helps in promoting fighting activities in the body.
2. Physical Exercises, Yoga and Meditation

Promotion of Fitness through Print and electronic Media: The electronic and Print Media must give full publicity during the Covid 19 How Physical Exercises helps to improve the Immune system in the body.Physical exercises like walking, jogging on spot and other exercises at home will relieve mental tension, improves blood circulation and muscle activity.

Conclusions:

The Covid 19 will create a global health crisis and had a deep impact on the way of every person in daily life.The Covid 19 will create a global economic crisis and had a deep impact on the way of every person in daily life.On line Teaching ndCoaching has increased to maintain the Studies, Sporting activities, meetings etc. Psychological Talks can be done through electronic media and print media.

Recommendations:

Hence Role of Print and Electronic Media during Pandemic Covid 19 Plays major role in regulating the disease and Post Covid Scenario also.The Role of Print and Electronic Media during Pandemic Covid 19 Plays major role in positive impact of the community.

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A Study on the Effect of Callisthenic Exercises on School Students

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Abstract

The purpose of the study was to investigate the effect of Callisthenic Exercises on selected Physical variables of School students of peddapalli district to achieve the purpose of the study, 50 boys students were selected from different Schools of peddapalli. The subjects age range from 14 to 17 years. The selected students were divided in to two equal group consists of 25 students, namely experimental and control groups. The experimental group given 12 week of Callisthenic Exercises training and control group was not participate in any special training apart from their regular spots and practice. The subject was tested on selected criterion variables such as Strength and Agility. Strength was measured by Standing Broad jump (meters) and Agility was measured by Shuttle run (count in seconds. The pre- test was taken before the program and post –test was measured of experimental and control groups. The result of the present study has revealed that there was in significance difference between experimental and control groups on selected variables of school students. The Experimental group students having well Strength and Agility than Control group students.

KEYWORD: Strength, Agility, Calisthenics and School students.

Introduction

Introduction Organized physical activity in school plays a key role in the health promotion and proper physical development of youth, especially in early adolescence, when students tend to become less active individuals. Exercise recommendations typically include aerobic training, but regular muscular fitness should also be considered for school-based physical activity settings Among the different exercise modalities in calisthenics exercises, in which subjects use their own bodyweight as resistance, are practical and low-cost options that can stimulate the neuromuscular system of children and Several investigations have demonstrated that Calisthenics gains induced by training are possible in this population, mainly due to neuromuscular adaptation and improved intra- and intramuscular coordination.

Increased strength and Agility may lead to better sport performance and injury prevention. Incorporation calisthenics exercises are a viable option in physical education classes due to the good cost-benefit ratio presented in a previous studies. Despite these benefits of calisthenics relevant studies in school settings are scarce, especially in a high school environment.

Thus, the aim of the present study was to investigate the effects of a low-cost and time-efficient calisthenics training program on fitness performance of high school students, comparing the results with students attending traditional physical education classes.

Statement of the Problem:
1) To examine the effect of calisthenics training on Scholl students among Peddapalli, Telangana.

Objective of the Study:
1) To find out the effect of A study on the Effect of Callisthenic Exercises on school students for development of physical variables among Peddapalli, Telangana.

Methodology:
The present study regular participate circuit training of the school students of Peddapalli, will be used Experimental method. The training schedule is designed to the experimental group to practice of Callisthenic Exercises training such as stepping, jumping, squatting, and lunging exercise one hour everyday in the Evening, six days a week up to twelve weeks except on Sunday.

The sample for the study were used 50 of the school students of Peddapalli, Telangana, Between the age group of the students 14 to 17 Years will be used simple random method. The sample considers was divided into equal groups called as control group and experimental group, each group consist of 25 students

Sample of Callisthenic Training Exercises

Si. No	Category of the subjects	category	Age Group	Number of subjects
1	Control Group	School stance	14-17years	25
2	Experimental Group	School studence	14-17years	25
	Total			50

After 12 weeks the Post tests were conducted on Experimental Group and Controlled group by making them to conduct physical tests and results were recorded. As explained earlier the sample of the study was contained the players who were participated practice of Calisthenics training for students.

The sample has taken (i) control group (not given Circuit training) and (ii) Experimental group (who have given Calisthenics training for 12 weeks) of the School students of Peddapalli, Telangana. The training schedule was designed to the experimental group to practice of training one hour everyday in the Evening, six days a week up to twelve weeks except on Sunday. The training time is scheduled between 4-P.M to 5 P.M. Strength was measured by Standing Broad jump (meters) and Agility was measured by Shuttle Run (count in seconds).The among group differences were assessed by using ‘t’ test.

The level of 0.05 was considered significant.

Showing the physical variables, Tests and equipment required and its Measuring Units

s.no	**Variables**	**Test and equipments Required**	**Measuring Units**
1	Strength	**Standing Broad jump**	**Meters**
2	Agility	**Shuttle Run**	**Seconds**

Statistical analysis:

Mean, standard deviation, standard 'norms' simple and multiple correlation coefficients and regression equations of various physical parameters will be computed.

Comparison of Strength and Agility Among school students of peddaplli,Telangana.

Variable	Group		N	Mean	S.D	"t" ratio
Strength	Experimental group		25	6.87	0.37	1.31
	Control group		25	6.84	0.57	
Agility	Experimental group		25	6.49	0.64	4.41
	Control group		25	6.04	0.25	

Significance at 0.05 levels

The above table depicts the mean value, standard deviation and 'Strength and Agility. There was significant difference in 'Strength and Agility among control group and Experimental groups of the School students of Peddapalli,Telamgana. Experimental group's students have good Strength and Agility than Control group students.

The above table shows the calculated 't' value 1.331and 4.41, which is significant at 0.05 levels.

Result:

The above result shows that there was significant difference between the Experimental group and control group in the selected physical variables such as Strength and Agility between Experimental group and Control group students. There was significant difference in Strength and Agility of School students of Peddapalli, Telangana. The Experimental Group of students were having good Strength and Agility than Control Group students of Peddapalli, Telanngana.

Conclusion:

Finally, I concluded that on the basis of result, there was a significant difference between Experimental group and control groups on selected Physical variable like Strength and Agility.

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The Effect Of Yoga Practices On Anxiety Among Boxers Of Mahatma Gandhi University, Nalgonda, Telangana, India

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Abstract:

This study was conducted to find out the effect of yoga practices on anxiety among boxers of Mahatma Gandhi University, Nalgonda, Telangana. Twenty male Boxers were selected 18 to21 year's age group and also considered as experimental group. Data were considered before and after six week training program of Yoga practices the collected data were statistically analyzed dependent 't' test, it was found that there was significant changes on Anxiety due to practice of Yoga. I used SCAT (Sports Competition Anxiety Test) test to find out anxiety levels.

Key Words: Yoga, Boxer's, Anxiety.

Introduction:

Yoga: Yoga is our Indian heritage handed down through ages by the Rishis and their disciples. In the past, it has been the tradition in our country to initiate children into yoga by the rishis at their tender age. It should necessarily be made a part of curriculum in the schools, colleges and universities. Knowledge is virtue the knowledge of body and the mind should be given top priority. Any progress in life neglecting the physical fitness of the body, the alternate of the mind and the equilibrium of the emotions is incomplete like constructing a building without strong foundation. Yoga meets equally the requirements of all persons. The knowledge acquired should be propagated for the benefit of the progeny. This is like money circulation. If the money is in circulation, it is beneficial to the humanity. Similarly, knowledge of yoga should be disseminated. Yoga should be taught, practiced so that it becomes a living subject.

Yoga as exercise

Yoga is a physical activity consisting of asanas (often connected by smooth transitions, sometimes accompanied by breathing exercises and usually ending with a period of relaxation or meditation. It is often known simply as "yoga", despite older Hindu traditions (some dating to the Yoga Sutras) in which asanas played little or no part asanas were not central to any tradition.

Yoga as exercise is part of a modern yoga renaissance,[223] a 20th-century blend of Western gymnastics and haṭha yoga pioneered by Shri Yogendra and Swami Kuvalayananda. Before 1900, hatha yoga had few standing poses the Sun Salutation was pioneered by Bhawanrao Shrinivasrao Pant Pratinidhi, the Rajah of Aundh, during the 1920s. Many standing poses used in gymnastics were incorporated into yoga by Krishnamacharya in Mysore between the 1930s and the 1950s. Several of his students founded schools of yoga. Pattabhi Jois created ashtanga vinyasa yoga, which led to Power Yoga; B. K. S. Iyengar created Iyengar Yoga and systematised asanas in his 1966 book, Light on Yoga Indra Devi taught yoga to Hollywood actors; and Krishnamacharya's son, T. K. V. Desikachar, founded the Krishnamacharya Yoga Mandalam in Chennai. Other schools founded during the 20th century include Bikram Choudhury's Bikram Yoga and SwamiSivananda of Rishikesh's Sivananda yoga. Modern yoga has spread around the world.

The number of asanas used in yoga has increased from 84 in 1830 (as illustrated in Joga Pradipika) to about 200 in Light on Yoga and over 900 performed by Dharma Mittra by 1984. The goal of haṭha yoga (spiritual liberation through energy) was largely replaced by the goals of fitness and relaxation, and many of its more esoteric components were reduced or removed. The term "hatha yoga" also refers to gentle yoga, often for women.

Yoga has developed into a worldwide, multi-billion-dollar business involving classes, teacher certification, clothing, books, videos, equipment, and holidays. The ancient, cross-legged lotus position and Siddhasana are widely-recognized symbols of yoga. The United Nations General Assembly established 21 June as the International Day of Yoga, and it has been celebrated annually around the world since 2015. On 1 December 2016, yoga was listed by UNESCO as an intangible cultural heritage.

The effect of postural yoga on physical and mental health has been a subject of study, with evidence that regular yoga practice is beneficial for low back pain and stress. In 2017, a Cochrane review found that yoga interventions designed for chronic low back pain increased function at the six month mark, and modestly decreased pain after 3–4 months. The decrease in pain was found to be similar to other exercise programs designed for low-back pain, but the decrease is not large enough to be deemed clinically significant Theories of the mechanism underlying these changes include the increase in strength and flexibility, physical and mental relaxation and increased body awareness.

Boxing: Boxing is a deceptively difficult sports at first glance boxing looks like it entails merrily moving around and throwing punches quit the contrary boxing requires absolute control of the body, mind, breathe emotions and surrounding atmosphere it demands deep concentration excellent mind body coordination and exceptional physical and cardiovascular strength. Boxing is one of the oldest combative sport on the earth and boxing sport introduced in Olympic games in1904 there are some rules to decide the winner in the contest ex. Knockout, Technical Knockout, Winning By Points and Walkover the opponent there is also draws in the boxing contest when the contests undergo an accidental cuts or an accidental wounds like head butt. Competitors wear protective headgear and gloves with a white strip or circle across the knuckle. There are cases however; where white ended gloves are not required but any solid color may be worn. The white end is just a way to make it easier for judges to score clean hits. Each competitor must have their hands properly wrapped, pre-fight, for added protection on their hands and for added cushion under the gloves. Gloves worn by the fighters must be twelve ounces in weight unless the fighters weigh under 165 pounds (75 kg), thus allowing them to wear ten ounce gloves. A punch is considered a scoring punch only when the boxers connect with the white portion of the gloves. Each punch that lands cleanly on the head or torso with sufficient force is awarded a point. A referee monitors the fight to ensure that competitors use only legal blows. A belt worn over the torso represents the lower limit of punches – any boxer repeatedly landing low blows below the belt is disqualified. Referees also ensure that the boxers don't use holding tactics to prevent the opponent from swinging. If this occurs, the referee separates the opponents and orders them to continue boxing. Repeated holding can result in a boxer being penalized or ultimately disqualified. Referees will stop the bout if a boxer is seriously injured, if one boxer is significantly dominating the other or if the score is severely imbalanced. Amateur bouts which end this way may be noted as "RSC" (referee stopped contest) with notations for an outclassed opponent (RSCO), outscored opponent (RSCOS), and injury (RSCI) or head injury (RSCH).

Anxiety: Anxiety is an emotion which is characterized by an unpleasant of inner turmoil and it includes subjectively unpleasant feelings of dread over anticipated events. It is often accompanied by nervous behavior such as packing back and forth, somatic complaints and rumination.

Sports Anxiety: Sports anxiety occurs when individuals view competitive situations as threatening and respond to these situations with apprehension and tension. Pressure causes our motor skills that are usually automatic to become impaired due to the additional tension.

Hypothesis: It was hypothesized that yogic exercise will have a significant effect on anxiety among Boxers

Delimitation: The subjects were restricted to Men Boxers, 18 to 21 age group on a random sampling 20 Boxers were selected from Mahatma Gandhi University, Nalgonda affiliated Colleges.

Methodology:
20 male boxer's of 18 to 21 years of age from Mahatma Gandhi University were selected as the subjects the selected subjects were gone under six weeks Yogic practices (Sukshma Vyayama,Asanas, Pranayama, Meditation and Yoga nidra) before the Six weeks yogic practices we collect data with using of Anxiety test and record the scores and after six weeks yogic practices we collect data again SCAT test and record.

Test Administration: Anxiety Test (SCAT) Sports Competition Anxiety Test.

Result and Discussions: The mean, standard deviation, standard error and **''t''** ratio of Anxiety test (SCAT) Scores pre test and post test are presented in the following tables.

Variables	**Test**	**Mean**	**S.D**	**S.E**	**''t'' Ratio**
SCAT Test	Pre	21.4	2.54	0.56	7.63
	Post	17.55	1.53	0.34	

Table 1

from the table 1 the dependent ''t'' value of Decreasing Anxiety levels between the pre and post test means of after Practice of Yogic exercises less than the table value of **7.63** level due to the effect of Yogic practices the experimental group had significant development (Decrees) on Anxiety Levels.

Conclusion:
1. Six week of Yogic Practices Reduce male boxers Anxiety levels
2. Six week of Yogic Practices improves male boxer's concentration on fight and performance in the ring.

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Effect of Continuous Training on the Performance of Long-Distance Runners of Hyderabad District

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Abstract:
The purpose of this study is to study the effect of Continuous training on the performance of Long-distance runners of Hyderabad District which will be helpful to Coaches and Trainers to Enhance the Performance. The sample for the present study consists of experimental group I N=15 and controlled group II N-15 of Hyderabad District. Continuous training was given to experimental group on alternate days for eight weeks along with general training to control group. Pre-Test and Post Test were conducted on Cooper test run to assess the performance of both the groups. This Study shows that the experimental group has got rapid improvement due to Continuous training compare to control group. It is concluded that due to continuous training there is an improvement in performance.

Key words: Continuous training, long distance runners, performance ability etc.

Introduction:
Long-distance running, or endurance running, is a form of continuous running over distances of at least 3 km (1.9 mi). Physiologically, it is largely aerobic in nature and requires stamina as well as mental strength. Among mammals, humans are well adapted for running significant distances, and particularly so among primates.. In modern human society, long-distance running has multiple purposes: people may engage in it for physical exercise, for recreation, as a means of travel, for economic reasons, or for cultural reasons.
Long-distance running can also be used as a means to improve cardiovascular health. Running improves aerobic fitness by increasing the activity of enzymes and hormones that stimulate the muscles and the heart to work more efficiently. Endurance running is often a component of physical military training and has been so historically. Professional running is most commonly found in the field of sports, although in pre-industrial times foot messengers would run to deliver information to distant locations..
Distance running can also serve as a bonding exercise for family, friends, colleagues, and has even been associated with nation-building. The social element of distance running has been linked with improved performance. In the sport of athletics, long-distance events are defined as races covering 3 km (1.9 mi) and above. The three most common types are track running, road running and cross country running, all of which are defined by their terrain – all-weather tracks, roads and

natural terrain, respectively. Typical long-distance track races range from 3000 meters (1.87 miles) to 10,000 meters (6.2 miles), cross country races usually cover 5 to 12 km (3 to 7½ miles), while road races can be significantly longer, reaching 100 km (62 mi) and beyond. In collegiate cross-country races in the United States, men race 8,000 or 10,000 meters, depending on their division, whereas women race 6,000 meters. The Summer Olympics features four long-distance running events: the 3000 meters steeplechase (which also involves jumping over barriers and water), the 5000 meters, 10,000 meters and marathon (42.195 kilometers, or 26 miles and 385 yards). Since the late 1980s, Kenyans, Moroccans, and Ethiopians have dominated in major international long-distance competitions. The high altitude of these countries has been proven to help these runners achieve more success. High altitude, combined with endurance training, can lead to an increase in red blood cells, allowing increased oxygen delivery via arteries. The majority of these East African successful runners come from three mountain districts that run along the Great Rift Valley.

Continuous Training, also known as continuous exercise or steady state training, is any type of physical training that involves activity without rest intervals. Continuous training can be performed at low, moderate, or high exercise intensities, and is often contrasted with interval training, often called high-intensity interval training. Some training regimens, such as Fartlek, combine both continuous and interval approaches. Exercise modes noted as suitable for continuous training includes indoor and outdoor cycling, jogging, running, walking, rowing, simulatedclimbing. Nordicskiing, ellipticaltraining, aerobicriding, aerobicdancing, step aerobics, hiking, in-line skating, ropeskipping, swimming and water aerobics.

Low-intensity

Examples of low-intensity continuous exercise protocols include:

- 30% of peak power output for 60 minutes (cycling and football).

Moderate-intensity

Definitions of moderate intensity continuous exercise include:

- 70-75% maximum heart rate for 50 minutes.
- 60-65% VO_2max for 30 minutes.
- 65% of peak power output for 40 minutes.

High-intensity

Examples of high-intensity continuous training protocols include:

- 100% of peak power output until exhaustion (cycling).
- 80% of peak power output for 45 minutes (cycling).

Review Of Literature

Pattyn N, Beulque R, Cornelissen V. (2018) conducted a study on Aerobic Interval vs. Continuous Training in Patients with Coronary Artery Disease or Heart Failure: An Updated Systematic Review and Meta-Analysis with a Focus on Secondary Outcomes. In a previous meta-analysis including nine trialscampering aerobic interval training with aerobic continuous training in patients with coronary artery disease, we found a significant difference in peak oxygen uptake favoring aerobic interval training. We conducted a systematic review with a meta-analysis by searching PubMed and SPORT Discus databases up to March 2017. We included randomized trials comparing aerobic interval training and aerobic continuous training in patients with coronary artery disease or chronic heart failure. The primary outcome was change in peak oxygen uptake. Secondary outcomes included cardio respiratory parameters, cardiovascular risk factors, cardiac and vascular function, and quality of life. Twenty-four papers were identified (n = 1080; mean age 60.7 ± 10.7 years). Aerobic interval training resulted in a higher increase in peak oxygen uptake compared with aerobic continuous training in all patients (1.40 mL/kg/min; p < 0.001), and in the subgroups of patients with coronary artery disease (1.25 mL/kg/min; p = 0.001) and patients with chronic heart failure with reduced ejection fraction (1.46 mL/kg/min; p = 0.03). Moreover, a larger increase of the first ventilatory threshold and peak heart rate was observed after aerobic interval training in all patients. Other 49 cardiorespiratory parameters, cardiovascular risk factors, and quality of life were equally affected. This meta-analysis adds further evidence to the clinically significant larger increase in peak oxygen uptake following aerobic interval training vs. aerobic continuous training in patients with coronary artery disease and chronic heart failure. More well-designed randomized controlled trials are needed to establish the safety of aerobic interval training and the sustainability of the training response over longer periods.

Beauchamp (2010) 43 In patients with chronic obstructive pulmonary disease (COPD), interval exercise has gained recent attention as a possible means of achieving greater physiological training effects compared with continuous exercise. The primary aim of this systematic review was to compare the effects of interval versus continuous training on peak oxygen uptake, peak power, 6-minute walk test (6MWT) distance and healthrelated quality of life in individuals with COPD. METHODS: Randomized controlled trials comparing the effects of interval versus continuous training in patients with COPD were identified after searches of six databases and reference lists of appropriate studies in May 2009. Two reviewers independently assessed study quality. Weighted mean differences (WMD) with 95% CIs were calculated using a random effects model for measures of exercise capacity and health-related quality of life. RESULTS: Eight randomized controlled trials, with a total of 388 patients with COPD, met the inclusion criteria. No significant differences were found for peak power (WMD 1 W, 95% CI -1 to 3) or peak oxygen uptake (WMD -0.04 l/min, 95% CI -0.13 to 0.05) between interval and continuous training. The WMD for the Chronic Respiratory Questionnaire dyspnoeascore was -0.2 units (95% CI -0.5 to 0.0). There was no difference in 6MWT distance between groups (WMD 4 m, 95% CI -15 to 23). CONCLUSIONS: Interval and continuous training modalities did not differ in their effect on measures of exercise capacity or health-related quality of life. Interval training may be considered as an alternative to continuous training in patients with varying degrees of COPD severity.

Objectives of the Study

The objective of the study is to find out the effect of Continuous training on the performance of long-distance runners of Hyderabad district.

Methodology

The subject for this study is N=30 college level athletes of Hyderabad District between the age group of 18 to 23 years (N=15 Experimental Group and N=15 Control Group) were chosen for the study. Cooper's 12 Min Test is used for collection of Data.

Tool

Cooper 12 minutes/run test

Purpose: to find the endurance ability

V Results and Discussion

The Experimental group and the Controlled group were given pre- and post-tests to see if there was an improvement in endurance after 8 weeks of Continuous training, while the Controlled group received general training.

T -Test

Paired Samples Statistics

Cooper test athlete's		mean	N	Std. Deviation	Std. Error Mean
Control Group	Pre-Test	2200.7331	15	102.13893	26.63030
	Post Test	2224.9333	15	102.67933	25.51172
Experimental Group	Pre-test	2313.2000	15	54.45602	14.06448
	Post-test	2410.1333	15	76.96044	20.13931

The analysis of the data reveals that the subjects with the Continuous Training have shown improvement in the performance of cooper test from pre to post-test Mean S. D Experimental group pre-test result shown (2313.2000) and Controlled group (2200.7331) after 8 weeks of Specific of Continuous Training there is Improvement in the subject's Experimental Group (2410.1333) Continuous Training, and Controlled group (2224.9333).

Conclusion and Recommendation

As for the practicality of this study which may applied when designing the Effective continuous training programmed for young athlete, I clearly mention that the continuous training has shown exlent effect in the improvement Endurance. Coaches will be able to analysed the results and be able to enhance the future performances.

At such feedback is very crucial for the improvement in performance athlete.

I concluded the assessment process can be conducted every 3 months and 6 months to update the progress of players performance and to ensure that it is up to date with the plyers training needs requirements. It is recommended that coaches assess their player's performance on a regular basis in order to ensure better compliance with the training programme.

The aim of formulating the effect of continuous training exercise to betterment and enhance their performance as well as guide line for athlete coaches at various level in preparing and designing quality and effective training programme.

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Practice of Yogasana for Healthy Living

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Abstract

The purpose of the study was to investigate the effect of YOGASANA on selected Physiological variables of Degree students of peddapalli district to achieve the purpose of the study, 60 women students were selected from different degree colleges. The subjects age range from 17 to 24 years. The selected students were divided in to two equal group consists of 30 students, namely experimental and control groups. The experimental group given 12 week of Yogasana training and control group was not participate in any special training apart from their regular regular spots games practice. The subject was tested on selected criterion variables such as vital capacity and Resting Heart Rate. The pre- test was taken before the program and post –test was measured of experimental and control groups. The result of the present study has revealed that there was in significance difference between experimental and control groups on selected variables. The Experimental group having good Vital capacity and Resting heart rate capacity than Control group of school students.

KEYWORD: Vital capacity, Resting Heart rate, Yogasana.

Introduction

Yoga is essentially a spiritual discipline based on an extremely subtle Science which focuses on bringing harmony between mind and body. It is an art and science for healthy living. The word **"Yoga"** is derived from the Sanskrit root ***yuj*** **meaning "to join", "to yoke" or "to unite"**.

According to Yogic scriptures, the practice of Yoga leads to the union of individual consciousness with universal consciousness. According to modern scientists, everything in the universe is just a manifestation of the same quantum firmament. One who experiences this oneness of existence is said to be **"in Yoga"** and is termed as a yogi who has attained a state of freedom, referred to as Mukti, nirvāna, kaivalya or moksha.

"Yoga" also refers to an inner science comprising of a variety of methods through which human beings can achieve union between the body and mind to attain self-realisation. The aim of Yoga practice (sādhana) is to overcome all kinds of sufferings that lead to a sense of freedom in every walk of life with holistic health, happiness and harmony.

Yogic practices for health and wellness

The widely practiced Yoga sadhanas are: Yama, Niyama, Āsana, Prānāyāma, Pratyāhara, Dhārana, Dhyāna, Samādhi, Bandhas and Mudras, Shatkarmas, Yuktāhāra, Mantra-japa, Yukta-karma etc. Yamas are restraints and Niyamas are observances. These are considered to be pre-requisites for further Yogic practices. Āsanas, capable of bringing about stability of body and mind, "kuryat-tadasanam- sthairyam", involve adopting various psycho-physical body patterns and giving one an ability to maintain a body position (a stable awareness of one's structural existence) for a considerable length of time.

Methodology

For the purpose of the study was to find out the YOGASA FOR LIFE. To achieve this purpose of the study, 60 women Degree college students of peddapalli students were selected randomly. The age group of the subject's ranges from 17 to 23 Years will be used simple random method.

The sample considers was divided into equal groups called as control group and experimental group, each group consist of 30 students. The training schedule is designed to the experimental group to practice of saunas one hour everyday in the morning 6am to 7am, six days a week up to twelve weeks except on Sunday.

The following variable was selected as criterion variables showing the physiological and Physical variables. The data were collected at before and immediately after the training for the selected variables. The "t''test was used to analyze the significant differences, if any in between the group, respectively.

Physical Variables, Tests and equipment required and its Measuring Units.

s.no	Variables	Test and equipment Required	Measuring Units
1	Vital Capacity	Peak flow monitor	Liter per minute
2	Resting Heart rate	Apollo Blood pressure Monitor	Breath per minute

Asana for Training:

The selected Asana are practiced reggurarly for a period of twelve weeks.

Bhujangasana, Sarvangasana ,Halasana, Salabhasana, Dhanurasana, Ustrasana, Ustrasana, chakrasana, Janu Sirsasana, Utthita Trikonasana, Matsyasana,

Mayurasana, Gomukhasana, Ardha Matsyendrasana, Bhadrasana,

Baddha Padmasana.

Table 1: Mean Standard deviation and't' value of Vital capacity Among degree college students.

Variable	Game	N	Mean	S d	T-Value
Vital capacity	Experimental group	30	3.96	0.46	3.18
	Control group	30	3.62	0.50	

***Significant at 0.05 level.**

The above table depicts the mean value, standard deviation and't' value of vital capacity. There was significant difference in Vital capacity among control group and Experimental groups of the Degree college students of peddapalli District. Experimental groups students have good Vital capacity than control group

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Table 2: Shows Mean, Standard division and't' value of Resting Heart Rate capacity Among. Among degree college students.

Variable	Game	N	Mean	S d	T-Value
Resting heart Rate the	Experimental group	30	71.24	7.87	5.96*
	Control group	30	60.06	6.93	

***Significant at 0.05 level.**

The above table shows the calculated t value 5.96, which is significant at 0.05 levels, since this value is higher than the table value. In the Experimental groups of the Degree college students of peddapalli district were found significant than control group of the Degree college students of peddapalli district.

Results:

The above result shows that there was significant difference between the Experimental group and control group in the selected physiological variables such as Vital capacity and Resting Heart Rate capacity between the Degree college students of peddapalli district. There was significant difference in Vital capacity and Resting Heart Rate capacity of Degree college students of peddapalli District of Telangana Experimental Group of Degree college students were having good Vital capacity and Resting Heart Rate capacity than Control Group of Degree college students.

Conclusion:

Finally, I concluded that on the basis of result, there was a significant difference between experimental group and control groups on selected variable like Vital capacity and Roasting Heart rate offer the scheduled training program and improvement in favor of experimental group due to 12 weeks of Yogasana training

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Comparative Study of Health Related Physical Fitness among College Students of M.G. University, Nalgonda and Osmania University, Hyderabad

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ABSTRACT:

The purpose of the Research is to compare the Health Related Physical Fitness among College Students of M.G. University, Nalgonda and Osmania University, Hyderabad. The Sample for the study consists of 100 College Students of M.G. University, Nalgonda and 100 College Students of Osmania University Its was hypothesized that there will be significant difference in health related physical fitness between College Students of M.G. University, Nalgonda and Osmania University.. The Health Related Physical Fitness Tests Items such as 50 M Run, Pullups and Standing Broad Jump were taken for the study. The statistical analysis of health related physical fitness components revealed that in the parameters such as 50 yard dash, Pullups and Standing Broad Jump there was significant difference between College Students of M.G.University, Nalgonda and Osmania University, Hyderabad Thus research hypothesis there will be significant difference in health related physical fitness between College Students of M.G.University, Nalgonda and Osmania University, Hyderabad was acceptance in 50 M Run and Standing broad Jump.

Key words: Health related physical fitness, Pullups, standing broad jump etc.

Introduction:

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Health related physical fitness is defined as fitness related to some aspect of health. This type of physical fitness is primarily influenced by an individual exercise habits; thus it is a dynamic state and may change. Physical characteristics that the constitute health related physical fitness include strength and endurance of skeletal musicals, joint flexibility, body composition and cardio respiratory endurance. All these attributes change in response to appropriate physical conditioning programs and all are related to health.Body composition refers to the ratio between fat and lean tissue in the body. Excess body fat is clearly related to several health problems including cardiovascular diseases type II (adults- onset) diabetes mellitus and certain form of cancer. Body composition is affected by diet but acceptable level of body fat. Cardio respiratory endurance or aerobics fitness is probably what most people identify as physical fitness. Aerobics fitness refers to the integrated functional capacity of heart, lungs, vascular systems and skeletal muscles to expand energy.

Purpose of Research:

The purpose of the Research is to compare the Health Related Physical Fitness among College Students of M.G. University, Nalgonda and Osmania University, Hyderabad.

Review of literature:

Chung Bing Yang, Te Hung Tsao (2020) studied Whether cardiorespiratory fitness (CRF) and physical fitness affect academic performance in college first-year students is a concerning issue. Therefore, the goal of this study was to examine the relationship between academic performance and CRF and the components of physical fitness in college first-year students. A total of 98 college first-year students (female: 30, male: 68) participated in this study.

The CRF was measured using a gas analyzer on a treadmill and physical fitness included body mass index, sit-up in one minute, standing long jump, sit-and-reach, 800 (female) and 1600-m (male) run/walk. The two assessments were scheduled by an interval of 7 - 10 days. The grade point average (GPA) in formal grade report was provided by each participant after the completion of the first academic year.

The data were analyzed by an independent t-test and the relationships between variables were analyzed by Pearson *product-moment* correlation. The results displayed that males were significantly higher than females in CRF ($p < 0.05$). For physical fitness, the BMI, sit-up in one minute, standing long jump were significantly higher in males than in females. However, females were significantly higher than males in the number of sit-and-reach ($p < 0.05$). For academic performance, the GPA displayed similar between different genders. After regression analyses, the CRF was significantly related with academic performance and explained 56% of the variance for GPA in male college freshmen. However, neither CRF nor the components of physical fitness showed any significant relationship with academic performance in females. In conclusion, the CRF accounted for the variance of academic performance in male. However, a similar result was not found in the female part.

Population and Sample Group:

The present study was descriptive research method was used for this selected 200 subject was selected 100 College Students of M.G. University, Nalgonda and 100 College Students of Osmania University. All the Students studying Degree Colleges between the age group of 18 to 21 Years.

Research Instruments:

The Health Related Physical Fitness Tests Items such as 50 M Run, Pullups and Standing Broad Jump has taken for the study.

Statistic use in data analysis: The Descriptive Statistics T- Test were used in the Study.

Research Results: The researcher analyzed the collected data as per the objectives set for research study.

Table No. – 1 :Descriptive Statistics of 50 Yard Dash between College Students of M.G.University, Nalgonda and Osmania University, Hyderabad

Group **50 Yard Dash**	N	Mean	Std. Deviation	Std Error Mean
M.G. University, Nalgonda Students	100	6.15	.444	.0444
Osmania University, Hyderabad students	100	6.56	.477	.0477

Independent Sample 't' test 50 yard dash	**DF**	**Sig.(2-Tailed)**	**Mean difference**	**Sts. Error Difference**
-6.252	**198**	**.000**	**-.40800**	**.0652**

In the above table No – 1 there were 100 College Students of M.G. University, Nalgonda Having Mean in 50 yard dash as 6.15 and with standard Deviation and .444 and standard of mean Error .444. Similarly there were 100 College Students of Osmania University, Hyderabad having Mean in 50 yard dash as is 6.56 with standard deviation of .477 and standard Error of Mean is .0477 The mean differences for 50 yard dash between College Students of M.G. University, Nalgonda and Osmania University, Hyderabad were -.40800. The 't'test value was -6.252 which was highly significant at 0.05(p=000) significance level for 198 degree of freedom.

The statistical analysis of 50 yard dash reveled that there was significant difference between College Students of M.G.University, Nalgonda and Osmania University, Hyderabad Hence the research hypothesis there will be significant difference in health related fitness among College Students of M.G.University, Nalgonda and Osmania University, Hyderabad is accepted.

Table No. – 2 Descriptive Statistics of Pull Ups between College Students of M.G.University, Nalgonda and Osmania University, Hyderabad

Group **Pull Ups**	N	Mean	Std. Deviation	Std Error Mean
M.G. University, Nalgonda Students	100	7.47	3.88	.388
Osmania University, Hyderabad Students	100	7.42	4.25	.425

Independent Sample 't' test Pull ups	**DF**	**Sig.(2-Tailed)**	**Mean difference**	**Sts. Error Difference**
.087	**198**	**.931**	**.05000**	**.57606**

In the above table No – 2 there were 100 College Students of M.G. University, Nalgonda Having Mean in Pull Ups as 7.47 and with standard Deviation and 3.88 and standard of mean Error .388. Similarly there were 100 College Students of Osmania University having Mean in Pull Ups as is 7.42 with standard deviation of 4.25 and standard Error of Mean is .425

The mean differences for **Pull ups** between College Students of M.G.University, Nalgonda and Osmania University, Hyderabad .05000 the 't' test value was .087 which was not significant at 0.05(p=.931) significance level for 198 degree of freedom.

The statistical analysis of **Pull ups** reveled that there was no significant difference College Students of M.G.University, Nalgonda and Osmania University, Hyderabad Hence the research hypothesis there will be significant difference in health related fitness among College Students of M.G.University, Nalgonda and Osmania University, Hyderabad is rejected.

M.G.University, Nalgonda and Osmania University, Hyderabad

Group **Standing Broad Jump**	N	Mean	Std. Deviation	Std Error Mean
M.G. University,Nalgonda Students	100	2.07	.166	.016
Osmania University, Hyderabad students	100	2.25	.234	.023

Independent Sample 't' test Standing Broad Jump	**DF**	**Sig.(2-Tailed)**	**Mean difference**	**Sts. Error Difference**
-6.306	**198**	**000**	**-.18140**	**.02877**

In the above table No – 3 there were 100 Students of M.G. University, Nalgonda Having Mean in **Standing Broad Jump** as 2.07 and with standard Deviation and .166 and standard of mean Error .016. Similarly there were 100 Students of Osmania University, Hyderabad having Mean in **Standing Broad Jump** as is 2.25 with standard deviation of .234 and standard Error of Mean is .023

The mean differences for **Standing Broad Jump** between College Students of M.G.University, Nalgonda and Osmania University, Hyderabadwere -18140 the 't' test value was -6.306 which was highly significant at 0.05(p=000) significance level for 198 degree of freedom. The statistical analysis of **Standing Broad Jump** reveled that there was significant difference between College Students of M.G.University, Nalgonda and Osmania University, HyderabadHence the research hypothesis there will be significant difference in health related fitness among sports persons of College Students of M.G.University, Nalgonda and Osmania University, Hyderabadis accepted

Results Discussion:

The statistical analysis of health related physical fitness components revealed that in the parameters such as 50 yard dash, Pullups and Standing Broad Jump there was significant difference between College Students of M.G.University, Nalgonda and Osmania University, Hyderabad Thus research hypothesis there will be significant difference in health related physical fitness between College Students of M.G.University, Nalgonda and Osmania University, Hyderabad was acceptance in 50 M Run and Standing broad Jump.. This clearly shows that College students of M.G. University, Nalgonda and Osmania University, Hyderabad differs each. Other.

Research Recommendations

The recommendations to apply this research to colleges to know the health related fitness among

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Effect of Hill Running for development of Speed among Kabaddi Players of Nalgonda District

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Abstract

The objective of this study is to study the effect of hill running in development of speed among Kabbadi Players of Nalgonda District in Telangana State. The sample for the present study consists of 20 Male Kabaddi Players of Nalgonda District between the age group of 16 to 20 Years. Single Group Design method is used for the Study, Pre Test and Post Test were conducted for 50 M Run on same group after the Hill running training of six weeks on alternate days to assess the Speed. This Study shows that due to Hill running the Kabaddi Players has increased in the sped.. It is concluded that due to Hill running there is a improvement of speed due to strengthening of legs. It is recommended that the coaches must include the Hill running programs to Kabaddi players to improve the speed and motor fitness.

Key words: Hill running, speed, motor fitness etc.

Introduction:

Kabaddi is a contact team sport. Played between two teams of seven players, the objective of the game is for a single player on offence, referred to as a "raider", to run into the opposing team's half of a court, touch out as many of their defenders as possible, and return to their own half of the court, all without being tackled by the defenders, and in a single breath. Points are scored for each player tagged by the raider, while the opposing team earns a point for stopping the raider.

Players are taken out of the game if they are touched or tackled, but are brought back in for each point scored by their team from a tag or tackle.

It is popular in the Indian subcontinent and other surrounding Asian countries. Although accounts of kabaddi appear in the histories of ancient India, the game was popularised as a competitive sport in the 20th century. It is the national sport of Bangladesh.

Running on Hills is a form of Strength training that can improve the endurance on the track and road. Hill Running increase the intensity of training and builds strength because of the resistance they offer when running.

Hill Running has a strengthening effect as well as boosting the athletes power and is ideal for athletes who depend on high running speeds. To reduce the possibility of injury hill training should be conducted once the athlete has a good solid base of strength and endurance.

Hill Training offers the following benefits.

a. Helps develop power and muscle elasticity.
b. Improves stride frequency and length.
c. Develops co-ordination, encouraging the proper use of arm action during the driving phase and feet in support phase.
d. Develops control and stabilization as well as improved speed (down hill running)
e. promotes strength endurance.

f. develop maximum speed and strength (short hills)
g. Improves lactate tolerance (Mixed hills)

Objectives of the Study:

The objective of this study is to study the effect of hill running in development of speed among Kabbadi Players of Nalgonda District in Telangana State

Purpose of Research:

The purpose of the present study to determine the effects of the hill running for development of speed among Kabbadi Players of Nalgonda District in Telangana State

Review of literature:

Dr. A. Palaniswamy (2020) studied the effect of plyometric training on physical variables among Kabaddi players. Method: For the present study 30 male kabaddi players from Department of Physical Education, Bharathidasan University, Tiruchirappalli, Tamilnadu were selected at random and their age ranged from 18 to 25 years. For the present study pre test-post test randomized group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each and named as Group ‘A’ and Group ‘B’. Group ‘A’ underwent plyometric training and Group ‘B’ underwent no training. The data was collected before and after six weeks of training. The data was analyzed by applying Dependent ‘t’ test to find out the effect of plyometric training programme. The level of significance was set at 0.05. Result: The findings of the present study have strongly indicates that plyometric training of six weeks has significant effect on selected physical variables i.e., Explosive Strength, Muscular Endurance and Speed of Kabaddi players. Hence the hypothesis earlier set that plyometric training would have been significant effect on selected physical variables in light of the same the hypothesis is accepted. Conclusion:

Significant effect of plyometric training was found on Explosive Strength, Muscular Endurance and Speed

Methodology:

The sample for the present study consists of 20 Male Kabaddi Players of Nalgonda District between the age group of 16 to 20 Years. Single Group Design method is used for the Study, Pre Test and Post Test were conducted for 50 M Run on same group after the Hill running training of six weeks on alternate days to assess the Speed

Results and Discussion:

Table I: Pre Test and Post Test Mean values of 50 M Run for Kabaddi Players (Single Group) in Paired Statistics.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Kabaddi Players	PRE	6.8997	20	.30122	.05500
	POST	6.6037	20	.30490	.05567

The Pre Test Mean of Kabbadi Players of 50 M Run is 6.8997 and same group is given training for six weeks of Hill running in Post Test they have decreased upto 6.6037. Hence there is a improvement in the 50 M Run among Kabaddi Players.Running also develops strength in legs which is very important for skills in Kabaddi.

Conclusions:

It is concluded that the due to the Hill Running develops the strength and power in the legs. It also improve the co-ordination in the arms and legs and promotes in developing the speed . In this Study it is concluded that Due to the Hill Running the speed develops a lot in the Kabaddi Players.

Recommendations:

Similar Studies can be conducted among females and in other Sports and games. This study is useful to the Coaches to prepare the conditioning program to improve the motor fitness of the Kabaddi Players.

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Wikipaedia Hill Running

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A Relative Study on the effect of Circuit Training forDevelopment of Physical and physiological variables among Dr. Babasaheb Ambedkar Marathwada University Athletes In Maharasthra

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Abstract

The purpose of the present study was to compare the physiological fitness components such as Vital capacity and Breath holding capacity physical variables such as Speed and Endurance among s Dr. Babasaheb Ambedkar Marathwada University Athletes in Maharashtra.. Total 60 Athletes of Dr. Babasaheb Ambedkar Marathwada University in Maharashtra, their age group from 18to 26 years were taken for the study. The data were collected on selected criterion variables and they werestatistically analyzed by using' t ' ratio at .05 level of significance. Vital capacity was measured by vital graph peak flow monitor (Litter per minutes) , Breath holding capacity was measured by Manual Nose clip method (count in seconds) , speed was measured by 50 mtr (Dash) and Endurance was measured by 800 meter (walk and run) . There was significant difference in Vital capacity, Breath holding capacitya speed and endurance among Experimanal group and Control group students of Dr. Babasaheb Ambedkar Marathwada University in Maharashtra. Experimental group students were having good Vital capacity, Breath holding capacity, speed and endurance than Control group. The Result shows that there was significant difference in the selected physiological variables and physical such asVital capacity, Breath holding capacity, speed and endurance among Experimental group and Control group. Key words: Vital capacity, breath holding, speed, endurance etc.

Introduction:

Track and field events are divided into three broad categories: track events, field events, and combined events. The majority of athletes tend to specialise in just one event (or event type) with the aim of perfecting their performances, although the aim of combined events athletes is to become proficient in a number of disciplines.

Track events involve running on a track over a specified distances and – in the case of the hurdling and steeplechase events – obstacles may be placed on the track. There are also relay races in which teams of athletes run and pass on a baton to their team member at the end of a certain distance.

Long-distance track event races require runners to balance their energy. These types of races are predominantly aerobic in nature and at the highest level, exceptional levels of aerobic endurance is required more than anything else. Elite long distance athletes typically train over 100 miles a week.

Statement of the Problem:

1) To examine the effect of Circuit Training for development of physical variables among Dr. Babasaheb Ambedkar Marathwada University Athletes in Maharashtra.
2) To examine the effect of Circuit Training for development of physiological variables among Dr. Babasaheb Ambedkar Marathwada University Athletes in Maharashtra.

Objective of the Study:

1) To find out the effect of Circuit training for development of physical variables among Dr. Babasaheb Ambedkar Marathwada University Athletes in Maharashtra rashtra
2) To examine the effect of Circuit Training for development of physiological variables among Dr. Babasaheb Ambedkar Marathwada University Athletes in Maharashtra.

Methodology:

The present study regular participate circuit of the Dr. Babasaheb Ambedkar Marathwada University students will be used Experimental method. The training schedule is designed to the experimental group to practice of circuit training one hour everyday in the morning, six days a week up to twelve weeks except on Sunday. The sample for the study is 120, Dr. Babasaheb Ambedkar Marathwada University students will be used, between the age group 18to 26Years will be used simple random method. The sample considers was divided into equal groups called as control group and experimental group, each group consist of 60 students

Sample of Circuit Training Exercises

Si. No	Category of the subjects	category	Age Group	Number of subjects
1	Control Group	Dr.BabasahebAmbedkar Marathwada University	18-26 years	60
2	Experimental Group	Dr.BabasahebAmbedkar Marathwada University	18-26 years	60
	Total			120

After 12 weeks the Post tests were conducted on Experimental Group and Controlled group by making them to conduct physical and physiological tests and results were recorded. As explained earlier the sample of the study was contained the players who were participated practice of Circuit training for students. The sample has taken (i) control group (not given Circuit training) and (ii) Experimental group (who have given Circuit training for 12 weeks) of the Dr. Baba sahib Ambedkar Marathwada University students in Maharashtra. The training schedule was designed to the experimental group to practice of training one hour everyday in the morning, six days a week up to twelve weeks except on Sunday. The training time is scheduled between 6-A.M to 7 A.M.

Showing the physical variables, Tests and equipment required and its Measuring Units.

	Variables	**Test and equipments Required**	**Measuring Units**
1	speed	**50 Meter Run**	**Seconds**
2	endurance	**800meters run**	**Minutes**

Showing the physiological variables, Tests and equipment required and its Measuring Units.

s.no	Variables	Test and equipment Required	Measuring Units
1	Vital Capacity	Peak flow monitor	Liter per minute
2	Resting Heart rate	Apollo Blood pressure Monitor	Breath per minute

Statistical analysis:

Mean, standard deviation, standard 'norms' simple and multiple correlation coefficients and regression equations of various physical parameters will be computed.

Table : Mean Standard deviation can't' value of Vital capacity and Resting Heart rate among University students.

Variable	Group	N	Mean	S.D	T-Value
Vital capacity	Experimental group	60	3.96	0.46	3.18
	Control group	60	3.62	0.50	
Resting heart Rate	Experimental group	60	71.23	7.86	5.96*
	Control group	60	60.05	6.92	

*Significant at 0.05 level

The above table depicts the mean value, standard deviation and't' value of vital capacity and Resting heart rate. There was significant difference in Vital capacity resting heart rate among control group and Experimental groups of the University students. Experimental group's students have good Vital capacity and resting heart Rate than Control group students. The above table shows the calculated t value 3.18 and 5.96, which is significant at 0.05 levels.

COMPARISON OF SPEED, ENDURENCE AMONG UNIVERSITY STUDENTS

Variable	Group		N	Mean	S.D	"t" ratio
Speed	Experimental group		60	6.97	0.39	1.33
	Control group		60	6.94	0.58	
Endurance	Experimental group		60	2.49	0.64	4.51
	Control group		60	2.55	0.26	

Significance at 0.05 level, "t'=1.96

The above table depicts the mean value, standard deviation and't' Speed and Endurance. There was significant difference in Speed and Endurance among control group and Experimental groups of the University students. Experimental group's students have good Speed and Endurance than Control group students. The above table shows the calculated t value 1.33 and 4.51, which is significant at 0.05 levels.

Result:

On the basis of the finding of the present study, the following conclusion has been drawn;

The above result shows that there was significant difference between the Experimental group and control group in the selected physiological variables such as Vital capacity and Resting Heart Rate capacity between Experimental group and Control group students. There was significant difference in Vital capacity and Resting Heart Rate capacity of University students. The Experimental Group of students were having good Vital capacity and Resting Heart Rate capacity than Control Group students.

The above shows that there was significant difference in the selected Physical variables such as speed and Endurance among university students. Experimental students were better in speed and Endurance than the Control group students.

Conclusion:

Finally, I concluded that on the basis of result, there was a significant differences between experimental group and control groups on selected Physiological variable such as Vital capacity and Resting Heart rate and Physical variables offer the scheduled training program and improvement in favor of experimental group due to 12 weeks Circuit Training.

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POTTI SRIRAMULU – LIFE, REFORM AND SACRIFICE – A STUDY

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Potti Sriramulu sacrificed his life for the cause of separate linguistic statehood for the Telugu speaking people. He took up the case of self-respect for the Telugu people and went on a 58 days hunger strike in unrelenting manner and gave up his life in the process. Sriramulu was one of the ardent satyagrahis who followed the footsteps of Mahatma Gandhi. This could be the reason which made Gandhiji once declare that "If there are ten satyagrahis like PottiSriramulu, India can achieve independence in just one year" Dr. BabuRajendra Prasad reiterated that the real definition of the word "Satyagrahi" one who follows "Satyagraha" is epitomized by Sriramulu.

Sriramulu was born on March 16thin the year 1901. His father was Potti Guravayya and mother Mahalakshamma. Theirs was an economically poor family. Sriramulu lost his father at a very young age; hence was brought up by his mother. A midst trying conditions, Sriramulu studied Sanitary Engineering Diploma Course. He worked as Assistant plumber in Great Indian Peninsular Railway. His life had many personal losses. His brother and sister were died. At his 29th year Sriramulu lost his wife, son and his mother, with this he lost every one personal. At this juncture he distributed all his possessions to poor people, and went to Sabarmati Ashram as Gandhi's disciple.

From then on, Sriramulu had devoted his entire life in the service to the nation. He was deeply immersed in the freedom struggle; and he was imprisoned in 1930. He served people who became shelter less during Bihar earth quake. He worked for the complete ban for alcohol in Andhra area. Sriramulu worked for the financial upliftment of sanitary workers. He went into hunger strike for another social cause namely "Right for entry into Hindu Temples for Dalits. He took up the noble cause of provision of last rites for orphan dead bodies. He would go onto play an active role in the Quit India movement in 1942 and was jailed. His entire life was dedicated to various public movements which culminated in the separate statehood for Telugu speaking people.

Keeping in view of the unsolved problem of separate statehood for Telugu speaking people goes away back to the early 1900, he took up fast unto death for 58 days at a stretch from 19-10-1952 to 15-12-1952. It was a very stern and steadfast movement. Sriramulu submitted his life to the ordeal of Satyagraha movement in thought, word and deed in the form of his hunger strike. The proclamation of Andhra State for Telugu speaking people came on the third day after his sacrifice. Andhra state was formed on 01-10-1953, with Kurnool as its capital.

The ideology of Sriramulu paved the way to linguistic base for states Reorganization in independent India. His dedicated efforts have become ideals for the future generation in all aspects.

The services of Potti Sriramulu, his social work and his 58 days fervent hunger strike are etched forever in the memory of people. They stand tall in the history of Andhra Pradesh. The Principal aim of this thesis is to probe, study and analyze, these aspects in the life history of Potti Sriramulu.

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Effect of Medicine Ball Exercises for development of Explosive Power among Rowers of Hyderabad District

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Abstract:

The Objective of the present study to find out the effect of medicine Ball Exercises for the development of explosive power among Rowers of Osmania University. medicine ball exercises is commonly used to build core strength, which means building muscles in your abdomen and back. This helps with balance, posture, and overall wellness through proper alignment. The sample for the present study consists of 20 Male Rowers of Osmania University in India out of which 10 are experimental group and 10 are controlled group. Medicine Ball exercises such as over head squat, side lungs, dead lift, hitting the ball, Throwing and catching, mountain climbers back press etc. were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training for six weeks . The results of the study were found that there was a significant difference of performance due to medicine ball exercises when compared with the control group for development of explosive power among Rowers. Hence Medicine ball exercise training recommended for Rowing for development of Motor fitness.

Key words: medicine ball exercises, rowers, core strength, explosive power etc

Introduction:

Competitive rowing is a serious sport that requires athletes to have the right amount of muscle, functional strength and endurance to get the edge over other competitors. This requires specific muscles that are needed to perform the rowing motion which results in consistent momentum with the perfect speed required for rowing faster while also being able to synchronize movements with their teammates.

Competitive rowers will usually work on building up muscle mass in their back and legs rather than the arms since these two areas are the largest muscles groups involved with the sport. Secondary muscles involved in the rowing motion consist of the biceps, triceps and shoulders which all come into play. As you can see, rowing is one of the best overall body exercises you can do since it incorporates so many different muscles groups with each repetition and it's an excellent exercise for burning lots of calories and fat.Medicine balls, like kettlebells, have proven especially adept at helping athletes develop explosive strength. Studies have shown that medicine ball training can be more effective than conventional strength training at boosting throwing and swinging performance.

A medicine ball is commonly used to **build core strength**, which means building muscles in your abdomen and back. This helps with balance, posture, and overall wellness through proper alignment

Medicine ball exercises offers the following benefits.

a). Helps develop power and muscle elasticity.

b). Improves stride frequency and length.

c). Develop explosive power and build body strength.

d) Enhance speed, movement accuracy for physical preparedness. ...

Previous Studies:

Prof. Rajesh Kumar (2022) Studied the effect of plyometric and medicine ball exercises on the development of explosive power among school sprinters of Hyderabad District in Telangana State. To achieve this purpose, 30 sprinters in the age group of 14–16 years taken as subjects. The selected 30 subjects were divided into three equal groups of ten members each as two experimental groups and one control group, in which Group – I (n = 10) underwent plyometric exercises for 3 days/week for 6 weeks, Group – II (n = 10) underwent the medicine ball exercises for 3 days/week for 6 weeks, and Group – III (n = 10) acted as control who are not participate any training apart from their regular activities. The standing Broad Jump Test pre- and post-test were conducted among three groups to assess the explosive power of legs. The results of the study were found that there was a significant difference of performance due to plyometric exercises and medicine ball exercises when compared with the control group for development of explosive power

Objective of the Study:

The Objective of the present study to find out the effect of medicine Ball Exercises for the development of explosive power among Rowers of Osmania University.

Methodology:

The purpose of the present study to find out the effect of medicine ball exercises for the development of explosive power among Rowers of Osmania University, Hyderabad.The sample for the present study consists of 20 Male Rowers of Osmania University in India out of which 10 are experimental group and 10 are controlled group. Medicine Ball exercises such as over head squat, side lungs, dead lift, hitting the ball, Throwing and catching, mountain climbers back press etc. were given to experimental group on alternate days i.e. three sessions per week and controlled group were given the general training .

Result:

Table I showing Mean values and Independent Samples Test of Standing Broad Jump Test between experimental and control groups of Rowers

Variables	Group	Pre Test Mean ± SD	Post Test Mean ± SD	t	P - Value
Standing Broad Jump	Experimental	2.31 ± 0.157	2.42 ± 0.185	3.55	0.001
	Control	2.26 ± 0.159	2.22 ± 0.161		

*Significant at 0.05 level

The Experimental Group of Rowers in Standing Broad Jump is 2.31 in Pre Test and Controlled Group Rowers mean is 2.26. The Experimental Group Mean is 2.42 in Post Test and Controlled Group mean is 2.22. The Mean Performance of Experimental Group has increased a lot.

Conclusions;

Medicine ball slams target muscles in both your upper body and lower body. When performed properly, they build strength in your upper back, core muscles, triceps, glutes, quads, and hamstrings. The results of the study were found that there was a significant difference of performance due to medicine ball exercises when compared with the control group for development of explosive power among Rowers.

Recommendations:

Similar Studies will be conducted on other sports and Games. This study is useful for coaches in Rowing and other sports. Hence Medicine ball exercise training recommended for Rowing for development of Motor fitness.

Acknowledgements:

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To Educate and Create Awareness about the Proper Disposal Of Solid Waste For Environmental Sustainability

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Waste Operation (or waste disposal) include the processes and conduct needed to manage waste from its commencement to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the waste operation process and waste- related laws, technologies, profitable mechanisms. Waste can be disposed grounded on material, similar to plastic, paper, glass, essence, and organic waste.

Categorization may also be grounded on hazard eventuality, including radioactive, ignitable, contagious, poisonous, or non-toxic wastes. Orders may also pertain to the origin of the waste, whether artificial, domestic, marketable, institutional, or construction and obliteration including natural, ménage, external, organic wastes. In some cases, waste can pose a trouble to mortal health.

Health issues are associated throughout the process of waste operation through the running of solid waste. Waste operation is intended to reduce adverse goods of waste on mortal health and the terrain. Around the world, waste generation rates are rising. In 2016, the worlds' metropolises generated 2.01 billion tons of solid waste, amounting to a footmark of 0.74 kilograms per person per day. The fast population growth and urbanization, periodic waste generation is anticipated to increase by 70 from 2016 situations to 3.40 billion tons in 2050.

Waste operation practices aren't invariant among developed and developing nations, regions like civic and pastoral areas, and domestic and artificial sectors can all take different approaches. Proper operation of waste is important for erecting sustainable and inhabitable metropolises, but it remains a challenge for numerous developing countries and metropolises. A report set up that effective waste operation is fairly precious, generally comprising 20 – 50 of external budgets. Operating this essential external service requires integrated systems that are effective, sustainable, and socially supported.

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An Overview on the Importance of Mental Health Education in Schools and Remedial Measure to Combat It in Secondary School Students

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The World Health Organization (WHO) defines health as 'a condition of full physical, mental and social well-being and not only the absence of sickness or infirmity'. These findings suggest that addressing the global burden of illness caused by mental disorders—which is substantial—should be a top priority in the effort to enhance health worldwide. Unipolar depression, self-inflicted injuries, and alcohol use disorders are among the top three primary causes of illness burden across all age groups. In addition to the isolation, stigma, and prejudice that people with mental illness already face, their ability to function in daily life may be impaired by their condition. At the societal and neighbourhood level, this load may have far-reaching economic and social effects. Schools and family are crucial social units which underpin the health and well-being of all persons. For the sake of students' long-term well-being, it is imperative that educational institutions prioritise students' psychological, social, and physiological well-being. New pressures have forced schools to prioritise pupils' emotional and social health. Safe habitats may be fundamentally created via detection and prevention. This Article Covers the Importance of Mental Health Education in Schools and Remedial Measure to Combat It in Secondary School Students.

The Educational Committees in India before New Education Policy 2020 and Highlights of NEP 2020

Dr. Bondu Raju, Assistant Professor, MANUU College of Teacher Education, Bidar

The NEP 2020 (66 pages document) is approved by the Union Cabinet on 29 July 2020. The highlights of NEP2020 are: Primary Education should be in the mother tongue. Education should be started at three years, in the name of Early Child Care Education (ECCE) should be started. Conversion of all Anganwadis into teaching-learning Centers. Breakfast should be provided to attract the students. The main focus of primary education is to access students, retain those students and give them quality education. The policy emphasized the importance of the school Education commission. Three language formula, the importance of girls' education, National Aptitude Test, and revamping of quality research degrees. Formation of National Research Funding (NRF)

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Malware Protection Using Traditional Security Tools

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In today's digital world everyone is becoming (or) part of it. Digital technology has become integral part of everyone's life and is being used from day to day works such as purchase of daily needs, bill payments, etc. to complex tasks/works such as handling air traffic control. While using the technology one of the primary concerns to all is privacy, availability, security of the information stored/transmitted by using the digital technology/device. Denial of access to the information, interruption in the process while accessing any data or device/system when required by the authorised user is one of the main issues in this digital world. In digital world this type of cybercrimes can be carried out from any part of the world which is contrary to conventional crimes. Malware is one of the main threats to any individual device or organisation systems. It will have a great impact on the CIA of the information security i.e., Confidentiality, Integrity and availability as malwares compromise them. End point/user of any process is very important because maximum crimes can be avoided if the end point/end user of the process/device is cautious and this is the main concern in this project/research. This project/research is about, to know what is malware, steps to be taken by individual/organisation for mitigation, prevention and control of malware attacks. This is carried out by studying the traditional tools/methods available for End point security of any system.

Quantitative Comparison of the Two Stock Exchanges NSE & BSE

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This paper deals with the comparison between the domestic and international stock exchange with reference to BSE and NASDAQ as these stock exchanges are very renowned and has a huge customer base. The two exchanges are compared on the basis of qualitative as well as quantitative factors on the basis of historical data of the exchanges for the financial year 2019-20, 2020-21, and 2021-22.The data collection was the crucial and challenging part of this study however; all the data used in the projects are taken from the authentic websites, monthly report of the exchanges, etc. and are accurate to the extent possible. In case of Indian stock exchange, it is interesting to note that the Sensex has multiplied 560 times since its inception with 1979 as the base year. By averaging around 15% CAGR during the last 42 years,Sensex has rewarded long term investor handsomely. Similarly, in case of US stock exchange, indices such as NASDAQ-100 Index, NASDAQ Biotechnology Index, NASDAQ Composite Index, ABA Community Bank NASDAQ Index have shown a rise of +684.80%, +440.40%,+711.19%, +121.86% respectively since inception till 2003. This project can help exchanges in recognizing their loopholes and can be used for further study.

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Study of Additive and Multiplicative Relations Connecting Conjugate Algebraic Numbers

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The present work look at what algebraic numbers may be represented with the aid of using a manufactured from algebraic numbers conjugated over a set wide variety area K in constant integer powers. The hassle is nontrivial if the sum of those integer powers is identical to zero. The norm of this sort of wide variety over K ought to be a root of harmony. We display that there are infinitely many algebraic numbers whose norm over K is a root of harmony and which can not be represented with the aid of using this sort of product. Conversely, each algebraic wide variety may be expressed with the aid of using each sufficiently lengthy product in algebraic numbers conjugate over K. We additionally assemble non symmetric algebraic numbers, i.e., algebraic numbers such that no factors of the corresponding Galois organization performing on the entire set in their conjugates shape a Latin square. The dependence family members among answer techniques, algorithms, and parts end up apparent. Fracture algorithms may be obviously forged on this framework. Solutions primarily based totally on manipulate equations also are immediately included as equality constraints. The arbitrary parts may be used so long as the ensuing directed graph is acyclic. It is likewise proven that graph walls and orderings need to be finished within side the innermost a part of the algorithm, a truth with a few ordinary consequences. In terms of the Legendre image, the law of quadratic reciprocity for notable odd primes states. A reciprocity law is a generalization of the law of quadratic reciprocity. The class huge type of approach relates many critical invariants of a whole lot of problem to a completely unique charge of its Dedekind zeta function.

The Effect Of Yoga Practices On Anxiety Among Boxers Of Mahatma Gandhi University, Nalgonda, Telangana, India

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NAGARJUNA GOVERNMENT COLLEGE (A), NALGONDA, TELANGANA

This study was conducted to find out the effect of yoga practices on anxiety among boxers of Mahatma Gandhi University, Nalgonda, Telangana. Twenty male Boxers were selected 18 to21 year’s age group and also considered as experimental group. Data were considered before and after six week training program of Yoga practices the collected data were statistically analyzed dependent ‘t’ test, it was found that there was significant changes on Anxiety due to practice of Yoga. I used SCAT (Sports Competition Anxiety Test) test to find out anxiety levels.

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Reading Problems Faced By Learning Disabled Children In Classrooms: A Teacher's Perspective

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Reading comprehension is a necessary skill throughout schooling and a vital component of the successful transition to adult responsibilities. It is the complex outcome of the process of constructing meaning from print. Students' success in comprehension is influenced by how interesting and relevant they find the text they are reading; their competencies in recognizing, decoding, and pronouncing words fluently and accurately; their awareness of the different purposes associated with reading and facility with comprehension monitoring strategies. The top-down model advocates reading instruction that de-emphasizes skills and focuses instead on a holistic approach to reading connected text as well as the value of immersing children in a literate environment. Reading comprehension is an important academic skill. It underpins school learning and becomes increasingly important in all subject areas as students progress through the grades.

Teachers play an important role throughout our learning process. An effective teaching strategy can improve reading comprehension difficulties in LD children by understanding their problems. So this study is designed to explore difficulties during reading comprehension in learning disabled children in Telangana with respect to teachers' perspective. The total number of samples selected from the aided schools is 155, Government schools are 216 and from the private schools are 130 through convenient random sampling method. Out of all distributed questionnaires to teachers, 27questionnaires were complete and the same was considered for the analysis of data.

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Understanding the Need Of Yoga Practices For Mental Well Being In The Time Of The Pandemic

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Yoga is a practise with its roots in a highly nuanced scientific tradition, with the ultimate goal of achieving a state of harmony between the mind and the body. Keeping oneself healthy is both an art and a science. When you practise yoga, you'll find that your mind and body, as well as your awareness and the consciousness of the universe, are in perfect harmony.

Yoga may aid in the development of both physical and mental fitness, the maintenance of internal peace, and the control of stress and its aftereffects in everyday life. Psychological distress is spreading over the globe as a result of the COVID-19 epidemic.

The global lockdown has had a significant impact on the economy, the labour market, and company operations worldwide. All segments of society have felt the effects, but those tasked with providing healthcare or securing basic necessities have been hit particularly hard. COVID-19 is largely believed to mostly impact the elderly and those with preexisting conditions such as diabetes, hypertension, and other CVDs.

Anxiety and stress, as indicated above, have been shown to promote sleeplessness and have the ability to significantly damage the immune system, which is the body's only defence against the virus, according to preliminary findings from a study that is still underway. ‘The research examines the importance of yoga for mental health throughout the epidemic.’

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Influence Of Personality On Achievement Motivation A Study On Secondary School Students.

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Personality is the dynamic organization within the individual of those psychological systems that determine his characteristic behavior and thought. Personality represents a unique integration of trait so as to differentiate one person from another on the basis of quality. Motivation plays a significant role in students' academic life. Achievement motivation is the basic need for success or the attainment of excellence. Achievement motivation forms to be the basis for a good life. All students were influenced by a need to achieve. It causes them a want to be successful at what they attempt. But each student is affected at different degrees.

High school students utilized most of their time in school environment. This is important stage of personality development of students' life as well as its motivational for achievement. Between this stage students are get efforts to develop their area of personality and achievement. Every School, High school try to provide maximum educational and personality related skills to their students but some student not shown interested for grab this opportunity, and not fulfill the expectations of their parents and educational institutes. Most of the students are not able to take proper decisions due to support, with support they drives to accomplish given task, most of students accomplished task as per their priority and values of the task and its importance.

Achievement motivation concept developed by social psychologist McClelland to denote the strong urge felt by an individual or society for achievement in various aspects of life that satisfies the need of self-esteem. The achievement motive is the deciding factor in attaining success in different fields. Personality traits referred to the stable characteristics which are psychological in nature and provide reasons for person's behavior. These traits described a person and determine his emotional, cognitive, and behavioral interpersonal, experiential, attitudinal, and motivational styles that explain behavior in different situation.

The data was collected and measure the personality traits used "Dimensional Personality Inventory" constructed by Dr. Mahesh Bhargava of Agra. And achievement Motivation of Deo- Mohan Achievement Motivation (N- Ach) Scale on 30 samples of students in various schools

This paper aims to study the influence of personality on achievement, motivation of high school students intact classes of VIII to X were taken.

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Photochemistry, Anti-Diabetics And Anti-Cancer Properties Of Betula Utilis

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The plant known as betula has a wide range of applications due to its adaptability and versatility. The D. Don tree, which is a member of the Betulaceae family and has a very long lifetime, has been referred to in Sanskrit for around four centuries as the Himalayan birch, bhojpatra, or Bhurja. This name comes from the fact that the D. Don tree is a member of the family Betulaceae. It is common known that the plant, when prepared in a medicinal form, has potential efficacy.

A recent surge in attention in the use of birch bark as a possible therapy for cancer may be attributed to the high concentration of triterpenoids found in birch bark. These triterpenoids include betulinic acid and oleanolic acid, amongst others. Cancer cells are the target of the anticancer drug known as betulinic acid, which is responsible for their death. As a direct result of this, it set itself apart from several other alternative therapies for cancer. It has been shown that several species of the genus B. utilis contain both phenolic and flavonoid compounds.

In addition to detecting the ability of phytochemicals to attach themselves to cancer cells, the SRB test is used to examine whether or not phytochemicals had anticancer properties when tested in a range of different solvents.

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Infinite and Infinitesimal In Mathematics, Computing and Natural Sciences

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Limited numbers are the reason for customary PCs. The utilization of limitless or little sums in specific conditions is generally explored hypothetically. In this examination, mathematical tasks with limited, boundless, and little numbers are performed utilizing an as of late evolved computational methodology. This should be possible on a fresh out of the box new type of PC called the Infinity Computer, which can deal with this multitude of various types of numbers. The improvement of new figuring instruments considers the execution of estimations of another sort and grows the opportunities for growing new numerical models that utilize calculations including limitless and additionally little numbers. Various mathematical models delineating the new strategy's true capacity and tending to dissimilar series, limits, likelihood hypothesis, straight variable based math, and the calculation of article volumes are introduced.

Recent Developments in Applied Mathematics and Computation

T.Saritha , Research Scholar, Career Point University

Numerical ideas become more unique over the course of time. This paper examines various applications, logical headways specifically, and designing thoughts with regards to science. This paper likewise underscores how science is utilized in designing, TEM, EPRI, and clinical imaging like 3D-tomography, so on.

Up to the eighteenth hundred years, the meaning of science was "the investigation of numbers." Mathematicians and savants began to propose various definitions as the investigation of arithmetic turned out to be more thorough and begun to deal with dynamic subjects like gathering hypothesis and projective calculation, which have no undeniable association with amount and estimation. These definitions change in their accentuation on different parts of math, including its dynamics, its logical nature, and specific numerical themes. Indeed, even among specialists, there is at present no overarching meaning of arithmetic. Indeed, even the grouping of math as a science or a workmanship is questionable. Many rehearsing mathematicians are uninterested in or feel it is absolutely impossible to characterize arithmetic. Certain individuals just state, "Mathematicians work in math."

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Attitude Towards RTE Act 2010 Towards Primary Teachers Level

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The investigator made know the levels of attitude of primary school Teachers towards the "Right to Education Act, 2010" perceived by teachers. This study was conducted in the district of Bangalore, Karnataka. The researcher has used Descriptive Survey method. The sample consists of 100 Teachers from 50 (Fifty) selected primary schools which are situated in the district of Bengalore Urban District, Karnataka. The Purposive sampling technique has been used for the selection of sample. The investigators have developed one Questionnaire by themselves to measure the attitude of Teachers towards the Right to Education Act, 2010 and its practical implementation in primary school education. The investigators analyzed the data item wise by using simple percentage technique. The overall results indicate that the attitude of primary school teachers was different with different items. The primary school teachers have given their opinion in favour with the few items related to RTE Act, 2010.

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Interest Rates on Home Loans of Select Banks – A Comparative Study between Public Sector and Private Sector Banks

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Abstract

The home loans from selected private and public sector banks had been discussed in this paper. The perception of home loan borrowers regarding home loans from private sector banks and public sector banks had been compared in this paper. The major finding of this research is interest rate of home loans from public sector banks is less compared to private sector banks. The results of this study provide insights for stakeholders of banking sector. It is important for borrower to consider interest share and principal share in easy monthly installments. The long tenure of home loans is not suggested and average tenure for home loans can be fifteen years.

Keywords: Interest rate, private banks, public sector banks, home loans, bank loans

Introduction

The basic need for modern people had become home because everyone is able to procure food and clothing. The disposable income of people had increased in the recent decades and people are looking for shelter.

The housing sector is very important for growth of the economy. In this regard the perception of home loan borrowers both in public sector banks and private sector banks had been analyzed in this study. The interest is important factor in selecting home loan from various banks but along with interest rates there are also other factors which are discussed in this paper.

According to (Pate, n.d.) in a very real way, the home loan is the driving force behind the Indian residential real estate market. Without a home loan, a large portion of the Indian population would be forced to live in rental houses.

Because of this facility, one can be a proud home owner without having to have enormous amounts of ready cash. Since they play an extremely vital role in sustaining the real estate market, it is not only home buyers who depend on home loans, but developers as well.

Home Loans are used for purchase of a flat, row house, bungalow from private developers in approved projects. Ministry of Housing and Urban Poverty Alleviation (MOHUPA) has introduced in June 2015, an interest subsidy scheme called Credit Linked Subsidy Scheme (CLSS) under Pradhan Mantri Awas Yojana (URBAN)-Housing for All, for purchase/construction/extension/improvement of house to cater Economical Weaker Section (EWS)/Lower Income Group(LIG)/Middle Income Group (MIG), given the projected growth of urbanization & the consequent housing demands in India.

Just like food and clothing, housing is a basic necessity. Needless to say, every Indian aspires to having his or her own house. Also, settling down in India is also almost synonymous with owning a house.

However, with the passage of time, owning a residential property has become a Herculean task owing to escalating real estate prices.

However, a home loan can come to the rescue. It is an easy way to fund your house purchase, as you will not have to burn out your savings. Banks and other housing finance establishments offer multiple options in terms of home loans.

Objectives of the study

1. To compare the home loans interest rate of selected public sector and private sector banks.
2. To know the perception of customers on various factor of home loans by public sector and private sector banks.
3. To provide some suggestions for home loan borrowers.

Scope of the study

In this study only interest rate of home loans has been analyzed. Banks provide various kinds of loans like vehicle loans and personal loans but this study had considered only home loans. There are many public sector and private sector banks but only popular banks have been considered have been selected.

Limitations of the study

The duration of study period is small and data had been gathered from secondary sources. The time constraint and money constraints have limited to consider only few factors while analyzing the home loans interest rate.

Literature Review

Bandyopadhyay and Saha (2011) had described features of home loan market in India. Their results suggested that borrower defaults on housing loan payments is mainly driven by change in the market value of the property concerning the loan amount and EMI to income ratio. Vijayakumar and Subburaj (2010) had mentioned that gross domestic product of a nation is having association with housing sector. It is found from their study that majority of the consumers are not aware about the various clauses in the home loan agreement and majority of the customers do not know the importance of reading it.

Rani (2012) had explained about perception of employees towards ICICI and HDFC bank and found that customers are likely to develop long term commitment for home loans rather than short term. Senugupta and Tipple (2007) had conducted a study on housing sector in West Bengal and found that the public-sector agencies are leading the reform initiatives by assuming the role of a real estate developer. Gupta and Sinha (2015) had conducted a study on factors influencing during purchase of home loan and stated that the demand for home loans has been increasing in India due to the requirements of residential accommodation. A large amount of Indian population is availing the home loan facility which is offered by the public as well as the private sector banks.

Shukla et al (2011) had mentioned that Government of India and financial institutions are continuously trying to strengthen the housing sector by introducing various housing loan schemes for rural and urban population. Ghosh (2014) had briefed about loan policy of public sector bank in India regarding eligibility, security, documents required, and breakup of principal and interest amount. The housing sector is one of the major contributors to the economy and provides growth impulses to the broader economic development of the country.

The role of the financing institutions viz. Banks and Housing Finance Companies has grown significantly over the years in the housing sector

Methodology

A structured questionnaire had been used for collecting primary data from existing home loan borrowers from both public sector and private sector banks. Quota and convenient sampling method had been used for selecting the respondents. Secondary data had been gathered on interest rates from websites of respective banks. Three public sector banks and three private sector banks are used for this study. Five point Likert-type scale is used with five for strongly agree and 1 for strongly disagree. The responses of public sector home loan borrowers are compared with private sector home loan borrowers.

Data Analysis

Among the total of 140 respondents 83 percent are male and 17 percent are female respondents. Majority of the respondents nearly 70 percent are graduates and above graduation. Out of the total respondents 67 percent are salaried employees and 33 percent are self employed. The average age of respondents is 38.50 years and most of the respondents are working in private sector.

Table 1: Home loan interest rate

Type	Bank Name	Current Year (2020)
Private	ICICI	9.05
	HDFC	8.50
	AXIS	8.00
Public	SBI	7.90
	AB	8.15
	PNB	8.45

(Source: Compiled by the researcher)

It is found fro above table that interest rate of public sector banks is less compared to interest rate of private sector banks with regard to home loans. Among the following interest rate of different banks the SBI is offering home loans at low interest rate and ICICI interest rate is high.

Table 2: Group Statistics

	Bank Type	N	Mean	Std. Deviation	Std. Error Mean
Cooperative Staff	Public	70	3.700	0.461	0.055
	Private	70	4.600	0.668	0.079
Fast processing time	Public	70	3.700	0.644	0.077
	Private	70	4.000	0.637	0.076
Easy documentation	Public	70	2.700	0.461	0.055
	Private	70	4.000	0.450	0.053
Trust on institution	Public	70	4.800	0.402	0.048
	Private	70	4.300	0.461	0.055
Low interest rate	Public	70	4.700	0.461	0.055
	Private	70	4.300	0.461	0.055

From above table it is found that staff cooperation, fast processing time and easy documentation is good in private sector banks whereas trust on institution and lower interest rate are high in public sector banks.

H1: The cooperative staff has a positive impact on trust on institution among home loan borrowers.

Result: The p-value is more than 0.05 for cooperate staff in the regression table. Therefore there is no impact of cooperative staff on trust on institution among home loan borrowers.

Table 3: Regression Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.520	0.222		24.863	0.000
	Cooperative Staff	0.023	0.060	0.033	0.380	0.704
	Easy documentation	-0.318	0.055	-0.506	-5.808	0.000

a. Dependent Variable: Trust on institution

H2: The easy documentation had a positive impact on trust on institution in banking sector regarding home loans.

Result: The p-value in regression coefficients table is less than 0.05. Hence easy documentation had a positive impact on trust on institution in banking sector regarding home loans.

Discussion

The performance of private sector banks is good with regard to home loans. Loan borrowers are giving importance for fast processing time rather than low interest rate. The staff cooperation is high in private sector compared to public sector. The job security is high in public sector banks which is another reasons they are not worried about customer satisfaction. The trust on institution is high on both private sector and public sector banks.

Recently the Reserve Bank of India (RBI) has directed all scheduled commercial banks (except regional rural banks), local area banks and small finance banks to link interest rates of all retail loans including home loans. Hence home loans interest rate is influenced by RBI and other macroeconomic factors.

Conclusion

Even though the interest rate on home loan sis less in public sector banks the factors like cooperative staff and easy documentation are helping private sector banks to give tough competition. The interest rate is one of the element and not primary element to select home loans. While selecting home loans the most important factor is to breakdown of principal amount and interest amount in the easy monthly installment (EMI). Even though customers know all the details exist in

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Gender and Work Life Balance- A Phenomenological Study Of Women Entrepreneurs

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ABSTRACT

Work-life balance is a daily endeavour to create time for family, friends, community engagement, spirituality, personal development, self-care and other personal pursuits, in addition to the obligations of the office. When we speak about women entrepreneurs, they set up their own firms so that they may be able to obtain more freedom and control over their job domain and personal duties. By such entrepreneurial efforts, they aid and contribute towards job generation, innovation and holistic growth of the country at large. With this in mind, we found that the work-life balance problem may be a huge stumbling block for working women entrepreneurs, causing them to be less productive and successful in their ventures. The major goal of this research was to analyse and make sense of the work-life balance experiences of women entrepreneurs. This research uses a questionnaire to explore the experiences of 120 female business owners and the challenges they face striking a balance between their personal and professional lives. This research found patterns that assisted offer insight of how women entrepreneurs navigate the public domain of work and the private sphere of family and living.

Keywords: Women, Work-life, Entrepreneurs, Gender, Role-conflict.

I. INTRODUCTION

Women are vital to every aspect of society. "As was previously said, a nation's health may be gauged by investigating the position of its female citizens." Cultural cultures like India traditionally encourage males to work and participate in economic activity, but in modern times women have also been encouraged to do so. With the advent of globalisation, the position of women in the workforce has undergone a radical transformation. Many women are coming up with entrepreneurial pursuits. As growing obligations in working field it is getting challenging for women to balance work life and professional life. They need to be self-employed so they may set their own hours and prioritise their own projects. Women have gradually progressed; society has opted for them to gain autonomy, independence, and economic strength; and they have figured out how to live on their own, pursuing their own goals. Women being strong backbone of the family, she controls all the domestic operations (Broto Bhardwaj, V. M. 2017). (Broto Bhardwaj, V. M. 2017). She excels at being a mother, wife, daughter, and homemaker all at once. She excels at assuming a variety of roles. She can handle both personal and career life efficiently. However, there are moments when one's professional and private lives collide. Women in the past were relegated to staying at home and taking care of the house, children, and other domestic responsibilities, with no access to the outside world. Women were viewed as home maker. Nowadays, women not only contribute greatly to the family, but also to the professional world. "As a result of the rising cost of living, more women are now joining their husbands in the workforce, and many families have two breadwinners." As of 2015 (Ramadevi),

The traditional position of women in society has not altered much despite this change in economic patterns, which has had a little impact on the cultural environment. Gherardi (2015) argues that gender socialisation via cultural norms gives women (entrepreneurs) the major duty for maintaining the house and caring for children. India, along with other traditionally conservative and patriarchal Asian societies, gives greater weight to this gender socialisation approach. Thus, the female business owner has a lot of pressure to maintain a thriving home and company life at the same time. Consequently, women have grown overworked as they strive to care for both their families and their careers.

II. PROBLEM OF GENDER ISSUES AT WORKPLACE

In contrast to males, many women are unable or unwilling to put in the same amount of overtime. However, unless there is an emergency, married women are less likely to be allowed to work late hours because to potential opposition from their patents, in-laws, and/or society at large. "Women seldom become part of this companionship, and the men may regard their presence to be a drag, but young bachelors discover a social life at the workplace that pushes them to remain late." Businesses often provide for evening drop-offs, but women still need to get home securely (Bird, S.R. 2006).

As if working within societal norms wasn't difficult enough, married women have home obligations (which married men often avoid) that necessitate them leaving at a reasonable hour. Women often have difficulties locating appropriate child care and a safe environment. These limitations lead to resentment and a tendency to marginalise women in terms of allotment of work, particularly in situations where there is work pressure or an urgent deadline to meet. This is especially true when women are blamed by their male colleagues for being unavailable or not contributing their fair share to the team. It's not uncommon for the male members of an all-male team to raise an objection when it's suggested that they hire a female member; in addition to lowering the team's productivity, they worry that a female member will disrupt the comfortable atmosphere of male camaraderie and gender informality that makes it possible to tell racy jokes amongst themselves. Women, who are already in the minority, might be unfairly targeted by the peer pressure system inside the team, leading to subtle forms of pressure and marginalisation if they fail to meet the expectations of their colleagues. The team manager divides up tasks across team members after consulting with each member. As a result of stereotypes, women may be assigned less challenging jobs because they are assumed to be unable to manage them (Niharika Doble and M.V.Supriya 2010).

The need for both short and long-term onsite work is another barrier to women's advancement in their careers. It's not uncommon to see many single women working alongside their male coworkers in international locations, but married women often decline onsite assignments because of the demands of raising a family or caring for an elderly parent. Although the firm cannot make an employee attend onsite, it will look poorly on the employee's record if she repeatedly declines onsite assignments. Given the rate at which technology is evolving and the need of staying current, professional breaks for women who have children may be especially detrimental to their advancement (Sumaira Rehman & Muhammad Azam Roomi 2012). Some employers enable women to return to work following maternity leave on a part-time, consulting, or work-from-home basis for a year or more, and most provide at least three months of paid leave. Some employers even enable women to take leave without pay for a year.

Women who are caring for small children typically struggle to maintain their work in high-stress jobs. Maternity leave may be devastating to a woman's professional and personal development because of the time she misses out on both. Depending on the circumstances, young couples may rely heavily on maids and crèches, or they may reconstitute the joint family by asking one or both sets of parents to move in with them, particularly for the purpose of providing childcare. However, the effort required for women to establish and maintain these situations usually increases their stress levels. In other situations such spouses even leave their children with relatives in India while they are working overseas. Most women put off having kids until they are financially and emotionally 'settled' because of these challenges. Another issue that impacts women's careers is the husband's profession. Men often leave because they want to advance in their jobs or get better offers elsewhere; women typically leave because they get married, have children, or follow their husbands to a new job. In the event of a work transfer or an abroad assignment, the husband normally takes precedence, forcing the wife to forfeit chances or force the couple to split up.

III. SCENARIO OF WORK-LIFE BALANCE IN LIFE OF WOMEN ENTREPRENEUR

A family's financial situation is not only based upon the wages of the men. Women are also equally liable stakeholders for preserving greater economic well being of a household. Women tend to exceed the stereotypical socio-cultural obstacles and evincing push and pull elements to acquire attention by creating their individuality in the society. In order to build economic self-reliance, women undertake their own projects although the motivational drive for such aim is produced by push and pull elements. Attractive motivators include the chance to shine in one's own right, get respect from peers, boost one's sense of self-worth, run one's own show, make more money, and establish one's own financial independence. Push elements are considered as discontentment from the work, financial state of family, education and care for children, illness and death of family members. In a manner, we can say that women attempt to overcome their economic crises and want to give a healthier and better lifestyle for their children and family members via their entrepreneurial talents. In this era of technology and globalisation, women are proving to be a dynamic force which cannot be neglected by our politicians. "In the contemporary context, women entrepreneurs have been regarded as wealth builders, job providers and also producers of the answer to many economic challenges occurring in the society." When we speak about work-life balance it simply implies achieving harmony between job and lifestyle of a person. ‘Job life balance' was initially coined in the United Kingdom in the late 1970’s that represents the equilibrium between an individual's work and personal life. Men and women alike are unable to eschew their responsibilities at work or at home. Women today are also playing the position of a breadwinner and incomes for the purpose of the advancement of the family status as a consequence of this role, the equilibrium of the family is being upset. Women going for entrepreneurship as a career might assist in many ways to preserve this balance between work and family.

According to Shelton (2005) female entrepreneurs continue to confront substantial obstacles in balancing work and family, with multiple studies demonstrating that women report greater workfamily conflict than males. The added strain of being a successful company owner, as well as the societal assumption that women should be the primary caregivers in their families, are also considerations. According to Collins-Dodd, Gordon, and Smart (2004) women establish their own enterprises with a greater drive than males to assist them find a balance between work and family. Despite the fact that working women continue to do the bulk of housework, this is the case. Women also show a deep commitment to their enterprises, to the point where it becomes an integral part of their identity. "This makes it more challenging for them to balance their personal and professional lives (Heilbrunn & Davidovitch, 2011)." There are responsibilities and obligations placed on these businesswomen as a result of these connections.

IV. PROPOSED METHODOLOGY

The research at hand relies heavily on survey work done in the field. The study's sample size is set at 120 women company owners from various industries (beauty salons, boutiques, ready-to-wear, restaurants, and more).

For obvious reasons, this was a ‘exploratory’ research. The co-relational hypothesis was developed as a result of the structured arrangement of the dimensions. The study's overarching goal was to get an understanding of the degree to which entrepreneurial women experience work-life balance and to identify the factors that contribute to their inability to do so. The studies were conducted outside, in their natural habitats, with no artificial conditions.

SPSS was used for all of the sophisticated statistical tests, whereas Microsoft Excel was used to calculate percentages for the demographics. As soon as data was entered into SPSS, the Cronbach Alpha test was performed to ensure data consistency.

Table 1 Reliability Statistics (Cronbach Alpha

Reliability Statistics

Cronbach's Alpha	N of Items
.941	32

Table 2: Role Conflicts

Role Conflicts	Strongly agree	Agree	Partially agree	Disagree	Strongly disagree
Feels that you have less time to spend with family.	(50.0)	(37.5)	(6.25)	(3.75)	(2.5)
Your husband and family members have to put up with inconveniences because of your enterprise	(12.5)	(12.5)	(36.25)	(28.75)	(10.0)
You cannot be a good spouse while running business	(47.5)	(8.75)	(31.25)	(7.5)	(5.0)
You cannot be a good spouse motherly attention	(6.25)	(37.5)	(2.5)	(45.0)	(8.75)
You are not able to spend enough time with your family	(23.75)	(27.5)	(35.0)	(25.0)	(11.25)
You forgo your hobbies and entertainment	(18.75)	(11.25	(28.75)	(36.25)	(5.0)
Children's education suffers because of your lack of time to Attend to their studies	(25.0)	(48.75)	(16.25)	(8.75)	(1.25)
You feel you are overloaded with domestic and enterprise workload	(8.75)	(13.75)	(15.0)	(55.0)	(7.5)

You feel that you are hampered from giving your best to the enterprise	(31.25)	(18.75)	(16.25)	(25.0)	(8.75)
You feel that you will not be able bear children because of managing business	(12.5)	(12.5)	(31.25)	(41.25)	(2.5)
You have not been able to have close ties with friends and relatives	(7.5)	(21.25)	(28.75)	(37.5)	(5.0)
You feel that you could have earn more profits in business	(10.0)	(16.25)	(23.75)	(46.25)	(3.75)
You would like to lead a more cultural and traditional life	(6.25)	(10.0)	(13.75)	(42.5)	(27.5)

The tension between their roles comes from the fact that they are expected to fulfil multiple responsibilities in at least three different roles: worker/owner, spouse/parent. What follows is a table displaying the replies of female business owners on the question of role conflict. It has been noted that family members of women business owners should assist them by helping with domestic chores, providing spiritual support, and adjusting their lifestyles as needed so that their businesses may function efficiently. They need to have access to the financial and emotional support they need at all times.

Table 3: Work effect on the relationship with their husband and children

Response	No of Respondents	Percent
Yes	30	25%
No	90	75%
Total	120	100%

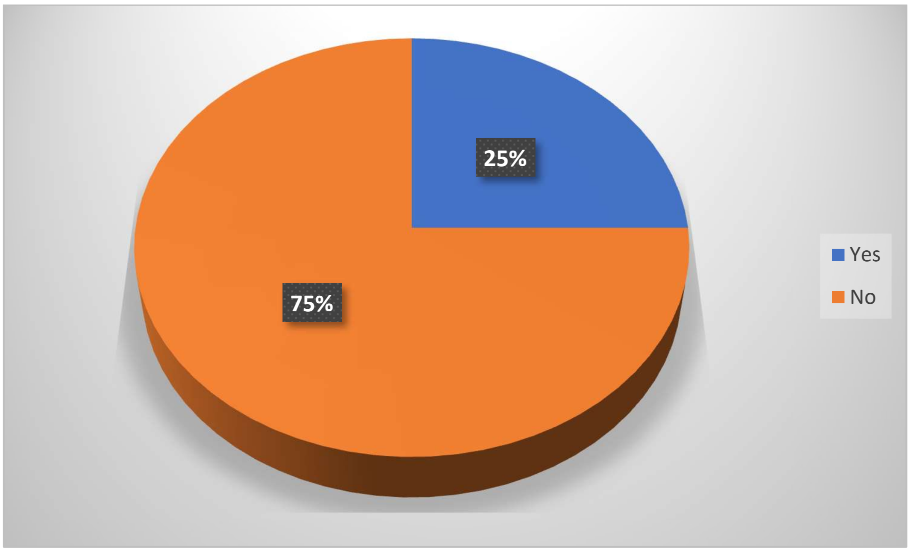

Figure 1: Graph showing Work effect on the relationship with their husband and children

When we discuss about effect of work on the relationship with their husband and children, 25% respondents are agreed with it while 75% of respondents disagreed with this statement
.

Table 4: Highest Satisfaction Factor by Women Entrepreneurs

Response	No of respondents	Percent
Career	18	15%
Home	48	40%
Career, Occupation and Home	30	25%
Leisure/religious activities	12	10%
Any other	12	10%
Total	120	100%

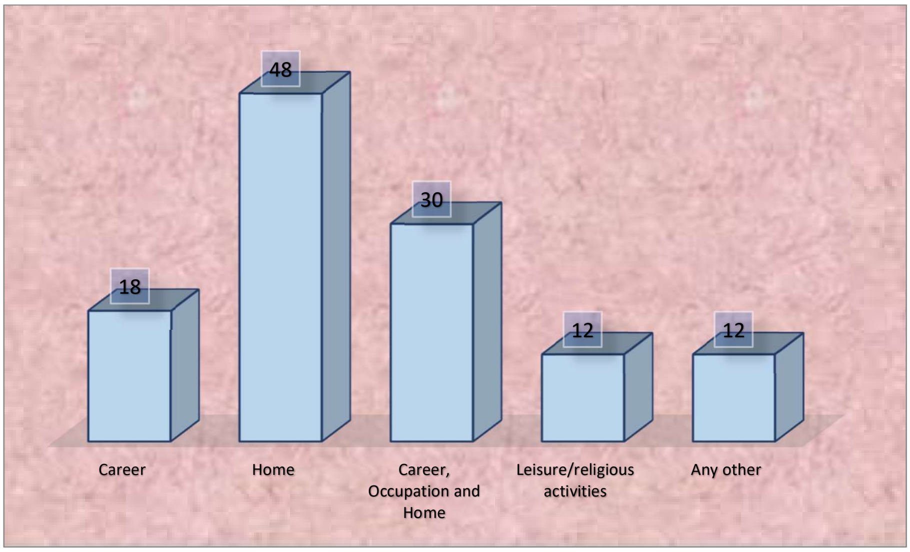

Figure 2: Graph showing Highest Satisfaction Factor by Women Entrepreneurs

Data from this table shows that forty percent of respondents rate their living situation as excellent. Although 75% of people are happy with their lives overall, 25% are happy with their careers, jobs, and homes. Only 15% of people are happy with their jobs; the rest are content with their careers, their personal lives, or a combination of the two.

Gender and Work-Life Balance

The following hypothesis is developed to test the relationship between 'gender' and 'work-life balance':

Ho: There is no difference in the mean of work life balance and gender variable.

H0: $\mu 1 = \mu 2$

H1: There is difference in the mean of work life balance and gender variable.

H1: $\mu 1 \neq \mu 2$

Table 5: ANOVA: Gender and Work Life Balance

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	6.269	4	1.572	4.251	.004
Within Groups	78.635	116	.373		
Total	84.904	120			

The above table clearly shows that value of $p < 0.05$ i.e. different classes of the number of dependent variable have different perception towards gender. It is concluded that H0 is rejected, H1 is accepted.

Nature of Family and Work Life Balance

As far as the family support is concerned, it is important to understand the 'type' of family from which an entrepreneur comes. So, the suggested hypothesis statements are as follows:

Ho: There is no difference in the mean of work life balance and nature of family variable.

H0: $\mu 1 = \mu 2$

H1: There is difference in the mean of work life balance and nature of family variable.

H1: $\mu 1 \neq \mu 2$

Table 6: Kruskal-Wallis Test: Nature of Family and Work-Life Balance

Nature of Family		Mean Rank
Work life Balance	Joint Family	96.51
	Nuclear Family	173.07
	Total	

Women who choose to live in nuclear families have a more skewed work-life balance, as shown in the table, whereas women who prefer to live in joint families have greater family support and are better equipped to achieve work-life harmony. Therefore, we go with H2.

Correlation Analysis

As per the factors identified in the literature review, a correlation test has been run using SPSS to identify which factors play a significant role in maintaining a work-life balance. The women entrepreneurs were asked questions related to the following factors:

1. Their 'roles' in the family, society and professional work.
2. Their 'ability' to meet their own health demands and carry out their personal activities in life.
3. 'Dependence' of family members on the women entrepreneur.
4. Their ability of 'manage time' for their family, work commitments and society.
5. The 'type' and 'magnitude' of Support Network/System the women entrepreneurs enjoy.

The following table shows the result of the correlation analysis (two-tailed analysis):

Table 7: Correlation Analysis

		Role Overload	Qualityof Health	Dependent Care Issues	Time Managemen t	Support Network
Role Overload	Pearson Correlation	1	.859**	.640**	.965**	.259**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	120	120	120	120	120
Quality of Health	Pearson Correlation	.895**	1	.587**	.886**	.382**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	120	120	120	120	120
Dependent Care Issues	Pearson Correlation	.637**	.587**	1	.583**	.427**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	120	120	120	120	120
Time Management	Pearson Correlation	.965**	.889**	.583**	1	.266**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	120	120	120	120	120
Support Network	Pearson Correlation	.259**	.379**	.430**	.268**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	120	120	120	120	120

**. Correlation is significant at the 0.01 level (2-tailed).

Based on the data in the table, it seems that ‘Difficulty Management’ and ‘Role Overload’ are the most important factors in determining the work-life balance of female entrepreneurs. This is because women business owners have a harder time balancing their personal and professional responsibilities.

V. SUGGESTIONS FOR MAINTAINING THE WORK-LIFE BALANCE

From the analysis of the extent to which work-life balance issues affect the female entrepreneurs, this study suggests the following recommendations:

- In order to aid female business owners in increasing the flexibility of their work schedules, they must find and educate qualified employees who can provide customers with high-quality service even when the owners are not there. "The salon proprietors will be able to schedule relaxation and other leisure activities as a result."

- Maintaining a healthy balance between personal and professional life requires effective time management.

- Having assistance in the domestic sphere would significantly improve managing the family obligations. The women business owners are urged to think about inviting a member of the extended family to live with them and assist out because the majority of them have young children. Compared to employing an assistant, this looks like a superior choice.

- In addition to Sunday, it is advised that the female business owners take required time off to relax and recuperate physically in order to boost their physical health. They may maintain their physical fitness by getting regular health checks, including massages.

- To maintain mental tranquilly, proper stress management techniques should be used.

VI. CONCLUSION

The two most significant components of working women's life are job and family, and in order to achieve balance between the two, female entrepreneurs choose self-employment so that they may manage and control both of them. Women's participation in business endeavours improves their personal lifestyle by enhancing their confidence and gaining respect. In the end, we draw the conclusion that women might benefit greatly from improving their entrepreneurial abilities, such as communication, planning, organising, delegating, etc. in the most effective way, in order to preserve their work-life balance and gain from it. Additionally, correlation analysis has been utilised to pinpoint the elements that have a big influence on how women entrepreneurs combine work and life. The research is notable since it was performed in light of a developing nation where women in society confront many obstacles and are ‘constrained’ to fill a variety of positions. Role juggling, physical and psychological issues that make it difficult to maintain good health, an inability to manage time effectively that results in imbalance in life, obligations to fulfil regarding dependent care, and a lack of involvement in one's support network that prevents one from receiving assistance from social networking are the top issues relating to work-life balance for an entrepreneurial woman.

Because it offers opportunities for the growth and development of the nation, policymakers are increasingly paying close attention to women entrepreneurs. Since several government organisations and NGOs are focusing on training workshops and entrepreneurial skill development initiatives to enhance the capacities of women, women entrepreneurs are in the limelight. Future research has a lot of room since it is a growing area with a lot of potential to grow with new chances. Additionally, there is plenty of room to compare the work-life balance of male and female entrepreneurs and assess its applicability in light of the difference. Comparative research between female executives and entrepreneurs has a lot of potential.

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"Impact of Anthropogenic Activities on Floristic Diversity and Habitat Integrity in Utnoor Forest"

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Abstract:

In Telangana's Adilabad District, the Utnoor Forest is an important ecosystem that supports a wide variety of flora and wildlife. The floristic variety and integrity of this delicate environment are seriously threatened by the growing encroachment of human activity. The influence of human activity on the Utnoor Forest ecosystem is examined in this research, with particular attention paid to how floristic diversity and habitat integrity vary over time. We determine the scope and makeup of human pressures such as illicit logging, grazing, deforestation, and agricultural growth by combining field surveys, remote sensing research, and community discussions. Our research indicates a decrease in habitat quality and floristic diversity linked to more severe human disturbances. We explore the consequences for ecosystem resilience and biodiversity conservation after identifying the main causes of habitat deterioration. We also look at possible management approaches to lessen the negative impacts of human activity and support sustainable forest management techniques. Through the clarification of the connections between human activities and the health of the ecosystem, this research aids in the creation of efficient conservation strategies for the Utnoor Forest and other forest ecosystems that face comparable risks globally.

Keywords: Utnoor Forest, Floristic Diversity and Habitat Integrity.

EXPLORING SENTIMENT DYNAMICS IN BUSINESS, POLITICS, AND FINANCE USING NLP

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Abstract

Sentiment analysis has become a vital technique for comprehending public trends, preferences, and attitudes in a variety of fields. Sentiment dynamics have a big impact on market movements, political campaigns, brand perception, and decision-making in the fields of business, politics, and finance. Using large amounts of unstructured big data, this study investigates the use of Natural Language Processing (NLP) tools to assess sentiment patterns. It demonstrates how sophisticated natural language processing (NLP) models can analyse text from a variety of sources, including news sources, social media, and financial data, and reveal insightful patterns based on emotions and opinions. This article offers a comparative examination of how public sentiment influences financial market performance, company strategy, and election results by looking at sentiment dynamics across the three domains. Along with providing suggestions to improve the accuracy of sentiment evaluations, it also highlights important issues in sentiment analysis, like controlling data biases, handling multilingual data, and sarcasm detection. The results of this study highlight how NLP may revolutionise sentiment trend decoding, opening the door to more strategic and informed decision-making in financial, political, and corporate contexts.

Keywords: Sentiment Analysis, Natural Language Processing, Decision-Making.

1. INTRODUCTION

One area of natural language processing (NLP) that focusses on finding and analysing subjective information in textual data is sentiment analysis, often known as opinion mining. It is a useful tool for many fields, including business, politics, and finance, as it is essential to comprehending public sentiments, beliefs, and attitudes. Sentiment analysis helps businesses measure customer happiness, track brand reputation, and adjust marketing tactics depending on client input. Businesses may stay competitive by gaining real-time insights into consumer expectations and industry trends by assessing opinions posted on forums, social media, and review sites. Sentiment analysis has completely changed how public opinion is monitored and interpreted in politics. It helps lawmakers and political parties track public opinion, pinpoint important topics, and develop campaigns that appeal to voters. It also gives leaders information on how the public is responding to events and policies, which helps them modify their plans accordingly. The importance of sentiment analysis in finance is demonstrated by its use in investment choices and market forecasts. Investor behaviour and market patterns are frequently influenced by sentiments expressed in news stories, financial blogs, and social media posts. Financial analysts and organisations may forecast changes in stock prices, evaluate risk, and create data-driven strategies by utilising sentiment analysis. In today's data-driven world, sentiment analysis has become essential because it provides a sophisticated knowledge of the emotive and opinion-based aspects that influence decision-making in a variety of industries.

The study of sentiment dynamics, or how feelings and viewpoints change over time, is crucial in determining how things turn out in politics, business, and the financial sector. Making educated judgements across different areas, predicting changes, and adjusting tactics all depend on an understanding of these developments. Sentiment dynamics in business have an impact on market positioning, brand loyalty, and customer behaviour. A company's reputation and earnings can be significantly impacted by shifts in public opinion brought on by new product introductions, customer experiences, or outside events. Positive social media sentiment patterns, for example, frequently result in more brand endorsement, whereas negative sentiment trends can harm a company's reputation and cause it to lose market share. Businesses may sustain competitive advantages and cultivate deeper consumer connections by monitoring and reacting to these changes in real-time. Sentiment dynamics in politics are essential for comprehending voter behaviour and public opinion. Voter attitude changes frequently influence political campaigns, policy decisions, and administration. To address issues, hone message, and adjust their tactics to the changing priorities of the people, leaders and parties depend on these insights. Sentiment tracking is a crucial instrument for political success because abrupt shifts in public opinion, brought on by debates, scandals, or policy announcements, have the power to reshape political environments. In the world of finance, investor conduct and market movements are greatly influenced by market sentiment, which is fuelled by feelings like fear, greed, and optimism. Global financial markets are impacted by shifts in sentiment, which also affect trade volumes, stock prices, and risk tolerance. Positive corporate news, for example, frequently boosts investor confidence and stock prices, but negative sentiment can result in sell-offs and market downturns. Financial analysts and institutions may reduce risks and take advantage of opportunities in tumultuous markets by having a solid understanding of sentiment dynamics. Sentiment dynamics provide a window into the public's overall emotional condition in all three domains, allowing stakeholders to take proactive and well-informed decisions. In today's data-driven environment, the capacity to assess and comprehend these changes has emerged as a critical success factor.

In the big data age, sentiment analysis relies heavily on Natural Language Processing (NLP). Every day, social media, news stories, reviews, and financial reports create enormous volumes of textual data. NLP techniques make it possible to filter, comprehend, and extract valuable insights from this unstructured data in an effective manner. NLP's capacity to preprocess and organise large datasets is one of its primary functions in big data sentiment analysis. This includes processes that transform unprocessed text into forms that can be analysed, such tokenisation, stemming, lemmatisation, and part-of-speech tagging. In order to manage the linguistic diversity and noise present in huge datasets, this preprocessing is essential. Additionally, NLP offers sophisticated sentiment classification algorithms that enable the recognition of neutral, negative, or positive attitudes in text. Even in complicated circumstances like sarcasm, irony, or mixed attitudes, machine learning and deep learning models—including support vector machines (SVM), recurrent neural networks (RNN), and transformers like BERT—have greatly improved the accuracy of sentiment recognition. Additionally, NLP is essential to multilingual sentiment analysis since it makes sentiment identification possible in a wide range of languages and dialects. This is especially crucial in international settings where sentiment analysis must account for a variety of language and cultural quirks. Real-time sentiment trend analysis is made possible by the scalability of NLP algorithms, which gives financial institutions, political organisations, and corporations immediate information. Big data-derived sentiment trends frequently reveal patterns that are not immediately obvious, assisting stakeholders in forecasting market behaviour, assessing public opinion, and successfully responding to customer feedback. NLP is a vital tool for sentiment analysis since, in essence, it turns large data into insights that can be put to use. Its capacity to manage the size and complexity of contemporary information enables decision-makers from a variety of industries to comprehend and react to the fluctuating nature of public opinion.

2. THEORETICAL BACKGROUND

- **Sentiment Analysis**

One area of Natural Language Processing (NLP) that focusses on locating and interpreting subjective information in text is sentiment analysis, often known as opinion mining. Its main objective is to identify a text's emotional tone and categorise it as neutral, negative, or positive. Decision-makers may learn how people or groups see certain subjects or events thanks to this categorisation, which offers insightful information about public sentiments, views, and attitudes. Sentiment analysis involves more than just categorisation; it also includes determining the sentiments' strength, context, and patterns across large and varied datasets. Three major categories can be used to categorise sentiment. Favourable feelings like contentment, joy, or optimism are reflected in positive sentiment, which frequently shows support or acceptance of a topic. Conversely, negative sentiment conveys criticism, discontent, or unpleasant feelings, offering information about areas of worry or unhappiness. A lack of intense emotional involvement is shown in neutral feeling, which provides fair or impartial viewpoints. When examined combined, these categories aid in creating a thorough grasp of the processes of public opinion. Sentiment analysis has a wide range of applications. It is employed in business to track how consumers perceive a brand, comprehend consumer input, and develop marketing plans. It is essential to politics for analysing voter emotions, forming campaign plans, and assessing public opinion. Sentiment research is used by the financial industry to forecast market trends, gauge investor confidence, and analyse how news affects stock performance. Sentiment analysis is also crucial for monitoring society opinions, comprehending patient input, and instantly addressing public issues in domains like social media and healthcare. Sentiment analysis has emerged as a crucial instrument in today's data-driven decision-making processes, impacting strategies across sectors and domains by making it possible to extract significant insights from vast amounts of unstructured data.

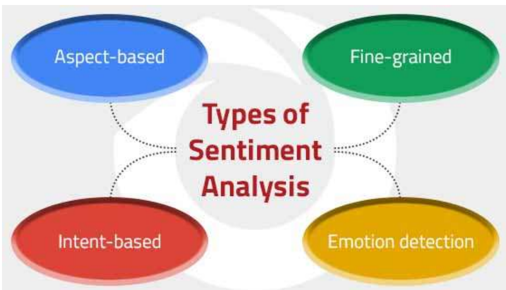

Fig: Approaches to Sentiment Analysis

- **Natural Language Processing (NLP)**

The study of how computers and human language interact is the focus of the artificial intelligence (AI) area of natural language processing (NLP). Making it possible for robots to comprehend, interpret, and produce meaningful and practical human language is the main goal of natural language processing (NLP). NLP is a fundamental technique in many applications, such as sentiment analysis, chatbots, and machine translation, since it integrates linguistics and computer science to close the gap between human communication and machine comprehension. Tokenisation, which divides text into smaller units like words or sentences; lemmatisation and stemming, which reduce words to their base forms; and part-of-speech tagging, which assists in identifying the grammatical components of a sentence (nouns, verbs, etc.) are important ideas in natural language processing. Another essential method for locating and categorising elements like names, dates, and places inside a document is Named Entity Recognition (NER). These fundamental methods serve as the cornerstones for more intricate NLP assignments, such as sentiment analysis. Since unstructured text data makes up the great majority of data created today, NLP's significance rests in its capacity to interpret and extract meaning from this type of data. Unstructured data is presented as free text and includes things like social media postings, news stories, reviews, and consumer feedback, in contrast to structured data, which is arranged in tables or databases. Computers can analyse, analyse, and understand this material using natural language processing (NLP) techniques, producing structured insights that are useful for making decisions. Large amounts of unstructured text data would be difficult, if not impossible, to analyse without natural language processing (NLP). NLP's capabilities have greatly increased recently, particularly in the area of sentiment analysis. Text sentiment extraction has seen a radical change with the introduction of deep learning and transformer models. By processing information sequentially, deep learning techniques like long short-term memory (LSTM) networks and recurrent neural networks (RNNs) allow machines to comprehend the context of a phrase. Transformer models, such as BERT (Bidirectional Encoder Representations from Transformers) and GPT (Generative Pre-trained Transformers), have significantly increased the precision and effectiveness of sentiment analysis, making them the most revolutionary advancement in natural language processing. By utilising attention processes, these models enable the model to concentrate on significant words and their connections within the text, therefore capturing context and subtle meanings that were previously difficult for conventional models. Transformers have raised the bar for natural language processing (NLP), enabling text comprehension and interpretation that is almost human-level. NLP has developed into a crucial instrument for managing and deciphering unstructured text data, opening the door to potent uses such as sentiment analysis. NLP keeps developing thanks to continuous improvements in deep learning and transformer models, which provide more complex methods of deriving insightful information from text and revolutionising a variety of sectors, including business, healthcare, and finance.

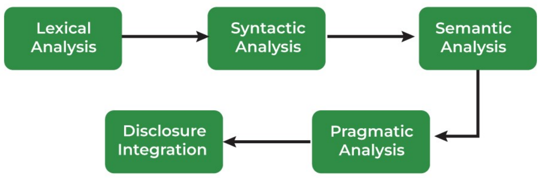

Fig: Stages of Natural Language Processing (NLP)

- **Sentiment Dynamics**

The study of how sentimentswhether neutral, negative, or positivedevelop and shift throughout time is known as sentiment dynamics. It entails comprehending the fluctuating trends of feelings or viewpoints in a certain setting, be it a financial, political, or business setting. Sentiment dynamics records how emotions change and impact decisions, behaviour, and trends in addition to capturing their intensity. For example, the mood around a political election or a product launch can shift significantly based on a number of variables, including media coverage, social media conversations, and new developments. Understanding the patterns of public sentiment, forecasting future trends, and making well-informed judgements based on how sentiment changes over time are all possible through the analysis of sentiment dynamics. The trajectory of these emotional changes is reflected in sentiment trend patterns, which show whether feelings are getting more neutral, negative, or positive across particular time periods. Organisations and stakeholders can predict shifts in consumer preferences, market behaviours, or public opinion by recognising these trends. For instance, a steady rise in unfavourable opinions about a prominent figure or financial product might be an indication of a crisis or a change in public confidence. On the other hand, a persistent increase in positive attitude may be a sign of expanding support for a new product, policy, or market advancement. Accurately analysing sentiment dynamics requires a grasp of the elements that impact sentiment shifts across different domains. In the corporate world, sentiment may be significantly impacted by elements including marketing efforts, social media involvement, product quality, and customer experiences. While a product recall or a customer service incident may cause a surge in bad sentiment, a new product feature or a viral commercial may create positive sentiment. Events like debates, speeches, policy announcements, scandals, or global events frequently influence sentiment dynamics in the political sphere. Significant changes in attitude may also be sparked by political campaigns and social movements, as people respond to media attention, controversies, and promises. Economic indicators, corporate earnings reports, governmental regulations, and worldwide occurrences such as financial crises or natural catastrophes frequently impact attitude in the banking industry. Market behaviour may be significantly impacted by investor attitude, and abrupt changes in sentiment may cause market volatility or the sharp increase and decrease of asset values. Identifying sentiment and comprehending how it changes over time are both components of sentiment dynamics. Sentiment research may offer important insights into upcoming developments by taking into account the elements that impact these changes, assisting stakeholders in business, politics, and finance in modifying their strategy appropriately.

3. SENTIMENT ANALYSIS IN KEY DOMAINS

- **Business**

Sentiment analysis has emerged as a key tool in the business sector for controlling brand reputation, enhancing marketing tactics, and obtaining a deeper understanding of customer behaviour. Businesses may gain a better understanding of consumer sentiment by assessing public sentiment from a range of sources, including social media, reviews, and polls. This understanding has a big influence on strategy creation and decision-making. By determining the emotional tone of customer interactions, sentiment analysis helps marketers improve their content strategy and advertising efforts. Businesses may determine how the public is responding to their goods, services, or marketing messages in real time by assessing sentiments in blog reviews, customer comments, and social media posts. For instance, favourable opinions on a certain campaign may be used to increase brand awareness, while unfavourable comments can be promptly resolved to minimise possible harm. Marketers may also tailor their approaches by identifying sentiment patterns and developing offers and advertisements that appeal to particular audience segments according to their emotional preferences and worries. Another significant area where sentiment analysis is essential is brand monitoring. Brands are continuously being discussed and assessed on a variety of platforms; by keeping an eye on these conversations, businesses can monitor public opinion and spot any changes in mood. While negative feelings can cause a drop in customer trust if they are not addressed, positive sentiments can improve a brand's image. Businesses may take proactive management by using sentiment analysis to identify early warning indicators of possible crises, such as a developing reaction against a product or service. Businesses may keep an eye on how their brand is seen and modify their tactics to guarantee constant harmony with consumer expectations and market developments by regularly monitoring sentiment. Sentiment analysis is also essential for managing client feedback. Conventional techniques for getting client input, such focus groups or surveys, can be time-consuming and have a narrow reach. To assess consumer pleasure and pain areas, sentiment analysis, on the other hand, automates the process of evaluating large volumes of unstructured text data, including forum conversations, social media postings, and online reviews. This makes it possible for companies to find out in real time how consumers feel about their goods or services, spot reoccurring problems, and quickly resolve them. Sentiment analysis assists companies in making data-driven decisions to optimise goods, improve customer experiences, and raise the calibre of services by categorising comments as neutral, positive, or negative. Sentiment analysis is essential to contemporary company operations because it enables companies to make well-informed choices about customer interactions, brand management, and marketing. Businesses may improve their competitive advantage, cultivate deeper customer connections, and uphold a favourable public image in a marketplace that is becoming more connected and opinion-driven by giving a clearer picture of consumer mood.

- **Politics**

Sentiment analysis is a potent instrument in the political sphere for gauging public opinion, monitoring the success of political campaigns, and directing policy decisions. Sentiment analysis gives political leaders, parties, and organisations real-time insights into public opinion on particular issues, candidates, or policies by examining massive volumes of text data from speeches, public forums, news sources, and social media. One of the most common applications of sentiment analysis in politics is monitoring public opinion on political topics and campaigns. Public opinion may change quickly during political campaigns and debates due to statements, media coverage, and new developments. Political campaigns may track these swings and determine how people react to certain issues or candidates by using sentiment analysis. Analysing social media responses to a presidential debate, for instance, might give immediate insight into which themes struck a chord with the public and which did not. This aids campaigns in modifying their messaging, honing their tactics, and making the required adjustments to better reflect the opinions of the voters. Sentiment analysis may also monitor the success of speeches and campaign ads, providing a more thorough grasp of voter preferences and issues that might be essential for improving election tactics. Additionally, sentiment analysis is essential to government and policymaking. Government representatives can determine how the public will react to proposed measures by assessing popular mood on a range of political problems. This makes it possible for legislators to make better judgements, guaranteeing that new policies and programs reflect the interests and concerns of the general public. Sentiment analysis, for example, may be used to determine how the general public feels about topics like environmental preservation, taxation, and healthcare reform. Policymakers can change or even scrap a planned policy before it becomes a major source of dispute if mood patterns show strong popular opposition to it. Furthermore, in times of crisis or political upheaval, sentiment research can offer real-time information. Governments can detect emerging problems, social movements, or political unrest early on by regularly monitoring public opinion, enabling prompt and efficient action. Governments have occasionally employed sentiment analysis to track public responses to demonstrations, elections, or social movements in order to inform their approach to governance and diplomatic initiatives. Political organisations may better assess public mood, monitor the success of campaigns, and develop policies that appeal to voters by using sentiment analysis. Sentiment analysis promotes more responsive, inclusive, and efficient government by offering real-time, data-driven insights that assist political leaders in navigating the complexity of public opinion and maintaining relationships with their constituents.

- **Finance**

Sentiment analysis is essential in the financial industry for forecasting market trends, evaluating stock performance, and comprehending investor behaviour. mood research helps determine how public mood affects market movements and investment choices by examining vast amounts of unstructured text data, including news stories, financial reports, social media posts, and earnings calls. In an increasingly complicated and turbulent market environment, this research helps investors, analysts, and financial institutions make better forecasts, reduce risks, and maximise strategy. Understanding how general market movements are influenced by collective sentiment is crucial for forecasting market trends using sentiment analysis. Both basic elements (such economic statistics or earnings reports) and the psychological elements that shape investor emotion frequently have an impact on financial markets.Positive news regarding company expansion or economic recovery, for instance, might inspire hope and raise market indexes. On the other hand, negative emotion can cause a market sell-off, such as anxiety about financial crises, geopolitical unrest, or economic downturns. Sentiment research provides predictive insights that can direct investment strategies by continually tracking sentiment from several sources and identifying early indicators of market movements. In order to predict market fluctuations and make timely choices, traders and financial analysts use sentiment data. They frequently use sentiment as a leading indicator to supplement conventional technical and fundamental research. Public sentiment may also have a big influence on stock performance, and sentiment research is being used more and more to forecast changes in stock prices based on the feelings and opinions of investors. For example, a company's stock price may rise in response to favourable feedback about a new introduction, changes in leadership, or quarterly results report. On the other hand, stock prices may drop as a result of unfavourable sentiment brought on by unfavourable news coverage, regulatory scrutiny, or unsatisfactory financial performance. Investors may better understand market sentiment towards a certain stock by using sentiment analysis to news, social media, and financial information. This will help them manage their portfolios and make more accurate forecasts. Another important area where sentiment research offers insightful information is investor conduct. Emotions like fear, greed, or optimism frequently influence investor decisions, which can result in market bubbles or collapses. Financial analysts may better understand market psychology and how it affects investing behaviour by monitoring mood across various investor groups, from individual investors to institutional investors. Investors can also use sentiment research to determine how outside variables, including social or political developments, affect the market's overall attitude and adjust their investment plans appropriately. Additionally, real-time sentiment monitoring tools enable investors to promptly adjust to shifting market conditions, such as when a company's stock unexpectedly rises or falls as a result of outside influences like media attention or regulatory changes. In the financial industry, sentiment research is a vital instrument that offers vital insights into investor behaviour, stock performance, and market trends. Financial institutions and investors may have a competitive advantage in making better-informed, data-driven choices by using sentiment data from a variety of sources. Sentiment research improves the capacity to forecast and react to market dynamics in real-time by revealing the hidden emotional causes driving market movements in an increasingly complex and interconnected environment.

4. NLP MODELS AND TECHNIQUES

The multidisciplinary discipline of natural language processing (NLP) makes it possible for robots to meaningfully and practically interpret, analyse, and comprehend human language. NLP techniques have changed over time, progressing from more conventional rule-based systems to more complex models that make use of deep learning and neural networks. As a result of this development, NLP is now capable of handling a wider variety of tasks, from straightforward word categorisation to more intricate ones like sentiment analysis, language translation, and text production.

Traditional NLP Techniques

1. Lexicon-Based Methods

One of the first techniques in natural language processing was lexicon-based sentiment analysis. It makes use of pre-compiled lists or dictionaries of terms linked to particular emotions, such neutral, negative, or positive. By calculating the frequency of sentiment-laden words, these lexicons are used to ascertain the sentiment of a document. For instance, the terms "good" and "happy" are seen as positive, whereas "bad" and "sad" are regarded as negative. These techniques are appealing for small-scale sentiment analysis projects since they are quick and easy to use. One of its major drawbacks, though, is their incapacity to comprehend context. A lexicon-based method, for example, might incorrectly classify a statement like "I'm not happy with the service" as positive since it contains the word "happy," yet the mood is generally negative. Irony and domain-specific terminology, which are frequently crucial for interpreting sentiment in more complex texts, are also difficult for these approaches to take into consideration.

2. Rule-Based Approaches

A set of predetermined language rules that regulate the relationships between words and sentences are applied in rule-based systems. These guidelines are founded on semantics (word meaning) and syntax (sentence form). For instance, according to a sentiment analysis guideline, an exclamation point following a word like "fantastic" may suggest a more strongly positive mood. By taking into account the syntactic structure of text, rule-based systems were among the first to capture greater complexity than lexicon-based techniques. However, they are constrained by the labour-intensive nature of their development and upkeep. Furthermore, rule-based systems might perform worse when confronted with big, diverse datasets, and they are difficult to adapt to new or unknown scenarios.

3. Machine Learning Models

Text categorisation, named entity identification, sentiment analysis, and other NLP applications have made extensive use of traditional machine learning (ML) models including Naive Bayes, Support Vector Machines (SVMs), and Logistic Regression. To train a classifier that can forecast sentiment, themes, or other relevant variables based on features taken from the text, these models need labelled data. Word counts, n-grams (word sequences of n), and term frequency-inverse document frequency (TF-IDF) scores are typical characteristics. Compared to lexicon-based and rule-based approaches, machine learning techniques have the benefit of being able to learn from data and not requiring the laborious development of language rules. They also capture intricate patterns in the text more effectively when the material is varied and plentiful. These models still need feature engineering, though, which can take a lot of work and can not always fully capture the richness of textual meaning. Furthermore, machine learning models may have trouble comprehending the text's context and long-range relationships.

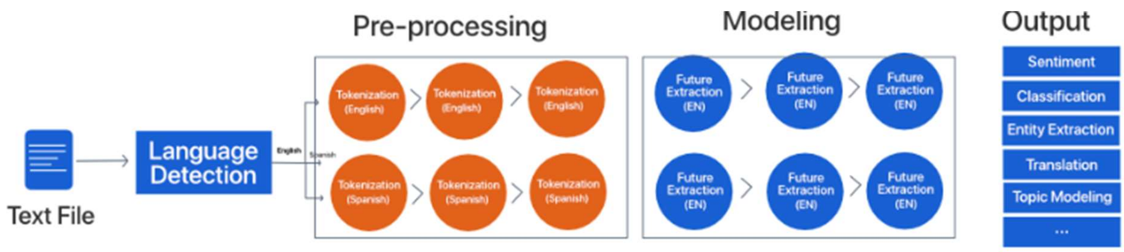

Fig: steps of Natural Language Processing (NLP)

Advanced NLP Techniques

1. Deep Learning Models

NLP has been transformed by deep learning, especially neural networks, which allow models to automatically extract features from unprocessed text without the requirement for human feature extraction. For NLP applications like sentiment analysis and machine translation, models like Recurrent Neural Networks (RNNs) and Long Short-Term Memory (LSTM) networkswhich are intended to handle sequential datawere commonly used. Long-range dependencies in the text, such the relationship between distant words in a sentence, are better captured by these models. Nevertheless, deep learning models may be computationally costly to train and need huge datasets to function well. Furthermore, despite their ability to process sequential input, RNNs and LSTMs may have trouble with excessively lengthy sequences because to problems like the vanishing gradient problem.

2. Transformer Models

A significant advancement in NLP capabilities was made with the release of Transformer models. Transformers are far more efficient than RNNs and LSTMs because they analyse text in parallel rather than sequentially. The attention mechanism, which enables the model to concentrate on various segments of the input sequence when generating predictions, is the primary novelty of transformers. For tasks like text creation or machine translation, this method allows transformers to record associations between distant words in a phrase, independent of their location. One of the most popular transformer-based models is Google's Bidirectional Encoder Representations from Transformers (BERT) model. Large volumes of text have already been used to train BERT, which may then be optimised for a range of tasks, including named entity identification, sentiment analysis, and question answering. By taking into account both the words that come before and after a given word, BERT's bidirectional training helps it comprehend context more fully. GPT (Generative Pretrained Transformer), created by OpenAI, is another noteworthy transformer model. While BERT is mostly used for analysing text, GPT specialises at generating human-like text. Applications such as chatbots and automated content production have made use of GPT-3, the third iteration, which has proven very successful in producing text that is cohesive and contextually relevant.

3. Pretrained Language Models

One important development in NLP is the idea of pretrained language models. By using bigger datasets, improving the pretraining tasks, and fine-tuning the model parameters, models such as T5 (Text-to-Text Transfer Transformer), Roberta, and Albert expand upon the transformer design. With little task-specific fine-tuning, these pretrained models have demonstrated state-of-the-art performance on a variety of NLP tasks, including sentiment analysis, text summarisation, and language translation. Pretrained models' primary advantage is its broad task generalisation, which requires less domain-specific data. Compared to conventional machine learning techniques, pretrained models require comparatively less labelled data to be fine-tuned, which makes them incredibly effective and flexible. However, they need a lot of hardware resources to train and deploy because to their size and processing requirements. The area has changed as a result of the development of NLP techniques from conventional lexicon-based approaches to sophisticated deep learning and transformer models. While conventional approaches are still useful in some situations, more sophisticated approaches such as transformers provide notable gains in efficiency and adaptability, allowing for more precise and contextual language analysis. NLP models will probably get much more complex as technology develops, opening the door to more complex human-computer interactions and more advancements in areas like automated reasoning, sentiment analysis, and language production. In fields where comprehending and processing human language is crucial, including commerce, politics, finance, and healthcare, the continuous advancement of NLP approaches will continue to be crucial.

5. CHALLENGES AND LIMITATIONS

Challenges in Sentiment Analysis Using NLP

Natural language processing (NLP)-based sentiment analysis has grown in significance in industries including banking, politics, and business. Nevertheless, despite developments, academics and practitioners still encounter a number of difficulties when trying to correctly extract sentiment from textual data. The intricacy of human language and the distinct subtleties seen in many fields are the causes of these difficulties. Irony and sarcasm pose serious challenges to sentiment analysis. There are many complexities in human language, where the literal meaning and the intended meaning are not always the same. For instance, if the line "Oh, great, another meeting" were examined in isolation, it may be read as positive; nonetheless, the speaker's tone and context imply that the mood is negative. These phrases are difficult for NLP models, particularly conventional ones, to handle because they are unable to readily account for the difference between the intended emotion and the surface-level meaning. A significant obstacle in NLP research is the need for a greater comprehension of contextual cues and the social dynamics at play in communication in order to identify sarcasm. Data is frequently multilingual in our increasingly globalised environment, which makes sentiment analysis extremely difficult. It is difficult to adapt NLP models to handle many languages since they are typically trained on monolingual datasets. Certain idioms, phrases, and syntactical patterns are exclusive to each language and may not transfer well across them. Cross-lingual sentiment analysis is especially difficult as sentiment expressions in one language might not have a straightforward translation in another. Performance may still differ according on the language pair and the calibre of training data, even though multilingual models like mBERT (multilingual BERT) and XLM-R have been created to solve this problem. Since the tone of the speaker or the surrounding material can alter the mood of a remark, context is essential in sentiment analysis. In a product review, for example, the statement "I love it" could convey a good attitude; nevertheless, in another context, it might convey a negative sentiment, such as "I love being stuck in traffic." Such subtleties are frequently difficult for traditional NLP models to distinguish, which results in misunderstandings. This problem is especially common when assessing brief texts, like reviews or tweets, when there is insufficient information to accurately classify sentiment. The terminology used in business, politics, and finance is specific to each of these fields, and the meanings associated with particular terms or expressions may vary from one area to another. For example, depending on the situation, a phrase like "disruptive" may have a positive meaning in business, indicating innovation, but it may also have a bad meaning in finance. To solve this, domain-specific data must be used to train sentiment analysis algorithms so they can precisely capture the sentiment associated with specialised phrases. Building such domain-specific models, however, may be resource-intensive, and models that have been trained on broad text could find it difficult to accurately classify sentiment in specific circumstances. Although human attitudes are sometimes far more complicated, sentiment analysis typically divides text into basic categories like positive, negative, or neutral. Assigning precise labels is not always simple since people express complex ideas that range from extreme positive to negative. A remark such as "This product is okay" could be seen as neutral, but in contrast to a more positive evaluation, it might convey a little negative feeling. Simple binary or ternary classification is far easier than fine-grained sentiment analysis, which entails differentiating between different sentiment intensity levels.

Limitations Specific to Each Domain

Given the nature of the fields and the language employed in each setting, sentiment analysis in commerce, politics, and finance is subject to certain restrictions. Improving the precision and applicability of sentiment analysis algorithms requires an understanding of these domain-specific constraints. Sentiment analysis is frequently used in business for brand monitoring, product reviews, and consumer feedback. Many corporate communications contain technical phrases or brand-specific jargon that are difficult for standard sentiment analysis algorithms to understand. Terms like "user-friendly" or "cutting-edge," for instance, may have a positive connotation in corporate settings, but the model must identify them as such. Customers may express conflicting opinions in commercial applications, such as "The product works well, but the customer service is terrible." Sentiment analysis techniques have a difficult time capturing both positive and negative sentiment in the same text. Texts pertaining to business, such as advertising or product descriptions, are frequently meant to influence or convince, and their attitude may not always be clear-cut or sincere, which can result in incorrect categorisation. There are a number of difficulties in political sentiment analysis, where the objective is frequently to comprehend public opinion on issues, politicians, or policy. Extreme feelings are more likely to be voiced in political speech, which is frequently polarised. In certain situations, exaggeration or hyperbole may obscure the subtleties of feeling, making it challenging to appropriately categorise sentiment. Sarcasm and satire are common in political discourse, particularly in media articles and social media posts. Because it frequently necessitates a comprehension of broader social, cultural, or political settings, detecting sarcasm in political comments presents a difficulty for NLP models. Misinformation may be common, and political materials may be biassed. Neutrality in analysis is challenging since sentiment analysis must be prepared to handle biassed language as well as subtle kinds of propaganda and manipulation. In order to forecast market trends or stock prices, sentiment research in the finance industry usually entails examining news articles, social media posts, earnings calls, and financial reports. A particular language used in the financial area might not be adequately represented in conventional NLP models. In contrast to their widespread meanings in ordinary English, words like "bullish," "bearish," "liquidity," and "yield" have unique meanings that rely on the situation and may have varied emotional values. Financial sentiment analysis must comprehend a text's emotional tone as well as how that mood will impact market behaviour. An unfavourable news report about a business, for instance, could affect investor mood, however the effect might differ based on the state of the market as a whole or the company's financial standing. Jargon and complicated terms that might cause misinterpretation are frequently used in financial reports and news. Without knowing the whole context, a model can interpret a line like "The company is in the red" incorrectly, particularly if it doesn't realise that "red" in financial terms denotes a loss. Even while NLP-based sentiment analysis has advanced significantly, there are still many obstacles and restrictions, particularly when dealing with sarcasm, multilingual data, domain-specific terminology, and complex sentiment expressions. Working in specialised fields like business, politics, and finance, where specialised terminology, contextual elements, and emotional extremes can make correct sentiment interpretation more difficult, exacerbates these difficulties. To increase the precision and dependability of sentiment analysis across a range of disciplines, future developments in NLP will need to overcome these problems.

6. IMPLICATIONS AND FUTURE DIRECTIONS

Natural language processing (NLP)-based sentiment analysis has important ramifications for a number of industries, including financial predictions, political campaigns, and corporate strategy. NLP assists decision-makers in developing better strategies and forecasting future trends by offering insightful information on customer behaviour, market mood, and public opinion. Sentiment analysis is essential in business to comprehend consumer feedback, brand perception, and market sentiment in general. Businesses may use natural language processing (NLP) to learn more about what customers think, improve their product offerings, and create marketing campaigns that appeal to their target markets. Businesses may learn a lot about how consumers feel about their brands, goods, and services by examining social media mentions, reviews, and comments. By using this input, businesses may improve consumer experiences, proactively solve problems, and forge closer bonds with their clientele. Businesses may track the reputation of their brand in real time with the use of sentiment analysis. Businesses can promptly spot any PR disasters and take remedial action before they worsen by evaluating sentiment patterns across social media, news, and forums. Businesses may adjust their marketing strategies to better suit client preferences by comprehending the mood underlying customer feedback. Based on the emotion of their target audience, businesses may better position their products, provide tailored offers, and optimise their advertising tactics. Sentiment analysis may be used to research rivals and determine how the general public views competing goods and brands. Businesses may use this to assess their performance, find market gaps, and obtain a competitive advantage. Because sentiment analysis makes it possible to follow public opinion and mood in real time, it has revolutionised the way political campaigns are conducted. Politicians and campaign teams may better understand voter preferences and strategically coordinate their messaging by evaluating speeches, debates, news articles, and social media. Sentiment analysis is a useful tool for political campaigns to monitor changes in public opinion in reaction to speeches, proposed policies, or significant events. Political strategists may use this real-time data to gauge how well their messages are connecting with voters and make the required corrections. Campaigns can determine the main topics that are most important to particular voter groups by assessing sentiment from various demographics and geographical areas. This increases the likelihood of voter involvement and support by enabling campaigns to create communications that are specifically tailored to the interests of certain voter groupings. opinion analysis may be used by political campaigns to identify early indicators of discontent or reaction. This enables campaign personnel to promptly resolve any disputes or unfavourable opinion before they worsen. Early detection of any PR problems lessens reputational harm to a candidate. To evaluate the impact of their rhetoric and messaging, politicians might examine changes in public opinion both during and after debates, speeches, or rallies. Campaign tactics may be improved and future public speaking engagements can be guided by this analysis. In the financial industry, where a variety of external influences, such as news and public sentiment, impact market movements and stock performance, sentiment research is essential. Financial institutions and investors may learn about market movements and predict trends by evaluating sentiment in investor communications, financial news, reports, and social media. Investors may forecast short-term price fluctuations and trends with the use of sentiment analysis, which can offer insightful information about market mood. Potential changes in stock prices or market activity might be indicated by the degree of positive or negative sentiment surrounding a business or the state of the economy. By monitoring unfavourable sentiment in financial reports, earnings calls, and social media conversations, sentiment analysis assists financial analysts in identifying possible dangers. Better risk mitigation techniques are made possible by this, and investments in assets that can be influenced by unfavourable public sentiment or outside events can be avoided. Some investors base their algorithmic trading tactics on sentiment research. Traders might find ways to profit from market swings and position themselves in assets that can see large price swings as a result of mood shifts by evaluating real-time sentiment data. Predicting market movements, particularly in turbulent markets, requires an understanding of investor mood. News and social media sentiment research can shed light on how investor sentiment may affect trading activity and asset values.

7. CONCLUSION

This study concludes by highlighting the critical role sentiment analysis plays in influencing political, corporate, and financial decision-making processes. Organisations, governmental bodies, and financial institutions may efficiently evaluate enormous volumes of unstructured data from many sources by utilising sophisticated Natural Language Processing (NLP) techniques. This allows them to derive important insights regarding emotional patterns and public opinion. These revelations have significant ramifications for market forecasts, political campaigns, and corporate strategy, allowing for more proactive and knowledgeable decision-making. Though sentiment analysis has many benefits, there are still a number of difficulties, especially when dealing with multilingual data, sarcasm, and biases present in the data sources. Continuous improvements in NLP techniques are necessary to overcome these obstacles, including the creation of more complex models that can comprehend contextual information and subtle linguistic aspects. In the end, this study demonstrates how NLP may revolutionise the understanding of sentiment dynamics and offer insightful information that can direct decision-making in the intertwined domains of politics, business, and finance.

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