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CRAFTING THE FUTURE THROUGH MULTIDISCIPLINARY RESEARCH

VOLUME - 2

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**TRANSDISCIPLINARY THREADS: CRAFTING THE FUTURE THROUGH MULTIDISCIPLINARY
RESEARCH: VOLUME – 2**

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Abstract

The endeavor to forecast stock values is a formidable challenge in the financial world, characterized by its complexity and the influence of multifaceted variables. In this paper, we embark on an extensive exploration of how machine learning algorithms can be effectively employed to tackle this challenge. Our primary objective is to elucidate the methodologies and strategies that can lead to more accurate stock market predictions. We delve into the intricate art of stock value prediction and analyze the various machine learning algorithms that have been proposed and utilized for this purpose. Through a critical examination of these algorithms, we aim to offer insights into their respective strengths and weaknesses, ultimately guiding the reader toward an informed choice of the most suitable algorithm for their specific forecasting needs. In addition to algorithm selection and attribute analysis, our review extends to the examination of external factors that can exert a significant influence on stock values. These factors encompass a wide array of variables, such as economic conditions, geopolitical events, corporate news, and market sentiment. Understanding the interplay between these external elements and stock market dynamics is crucial for the development of more robust and reliable prediction models.

Keywords: Stock Forecasting, Machine Learning, LSTM Analysis.

Introduction

The stock market is where people buy and sell a company's stocks. As time goes on, more individuals are becoming interested in the stock market. This growing interest has made it an important subject for research. Machine learning offers various predictive tools that can be very useful in this area. Various industries are using machine learning to improve their processes. Machine learning allows computers to learn on their own without external programming. Recurrent neural networks (RNN), especially Long Short-Term Memory, have proven to be among the most powerful models for handling data that comes in a sequence.

In simpler terms, the stock market is where people trade company stocks. More and more people are becoming curious about the stock market, which is why it's an increasingly important topic for research. Machine learning offers tools that can help predict stock market trends. Many industries are using machine learning to make their operations better. Machine learning allows computers to learn by themselves, without needing external assistance. Recurrent neural networks, like Long Short-Term Memory, are excellent at handling data that happens in a specific order, like stock price movements.

Recurrent Neural Networks (RNNs) are really good at learning from data, especially when it involves recognizing long-term patterns. They were first introduced by Hochreiter & Schmidhuber in 1997 and have since been improved and made popular by many other researchers. RNNs have proven to be highly effective in solving a wide range of problems and are widely used in various applications.

In our research, we used a specific type of RNN called Long Short-Term Memory (LSTM) to build a model that predicts the stock returns of Apple and five other major tech companies. This research aligns with the increasing focus on financial education and the continuous opportunities within the stock market.

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Traditionally, people have used pen, paper, and traditional mathematical methods to forecast how stocks will move. However, as we explored various other models and methods, we decided to venture into this field to develop a solution that can predict how individual stocks will perform. The aim is to offer a more advanced and dependable way for individuals to make well-informed investment decisions in the ever-evolving world of the stock market.

This chapter presents different news carrier platforms, data preprocessing for fake news identification, and machine learning and deep learning approaches. Because information on social media networks is so easily accessible and spreads so quickly, it can be difficult to tell what is real and what is fake. The easy dissemination of knowledge through sharing has accelerated the growth of information falsification. Due to the expectations of societies across the globe, our aim was to conduct research on several methodologies for false news detection. Several machine learning algorithms have been applied for the fake news detection. But machine learning algorithms are unable to solve the complex problems. Therefore deep learning approaches have been applied to detect the fake news. It requires a huge amount of data in order to outperform other tactics. Training costs a lot since data models are so intricate.

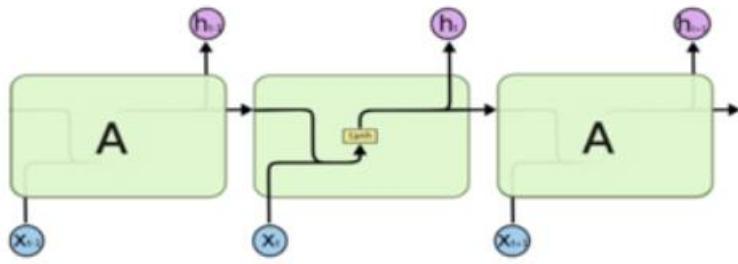
RESEARCH METHODOLOGY

Proposed System

Prediction methods can be broadly divided into two categories: statistical methods and artificial intelligence methods. Statistical methods encompass models such as logistic regression and ARCH (Auto Regressive Conditional Heteroskedasticity) models. These approaches rely on mathematical and statistical techniques to make predictions. Artificial intelligence methods, on the other hand, include more advanced techniques like the multi-layer perceptron, convolutional neural network (CNN), backpropagation network, single-layer LSTM (Long Short-Term Memory), recurrent neural network (RNN), and so on. These methods leverage the power of artificial intelligence and deep learning to make predictions. The research used a Long Short-Term Memory network (LSTM), which falls under the artificial intelligence methods. LSTMs are known for their ability to capture and learn patterns in sequential data, making them particularly suitable for tasks like stock price prediction.

Long Short Term Memory

Long Short Term Memory networks, often abbreviated as "LSTMs," stand out as a unique type of Recurrent Neural Network (RNN). They have a remarkable ability to grasp long-term relationships in data. Initially introduced by Hochreiter & Schmidhuber in 1997, LSTMs have undergone further improvements and gained widespread recognition through the work of numerous researchers. These networks demonstrate exceptional performance across a broad spectrum of challenges and have become a prevalent choice in various applications. In essence, LSTMs are a powerful tool for understanding and predicting complex sequences of data.



The repeating module in a standard RNN contains a single layer.

Working Of LSTM

The LSTM (Long Short-Term Memory) network is a specialized neural network structure characterized by the presence of three crucial gates: the input gate, forgetting gate, and output gate. These gates are integral components within an LSTM unit. When data enters the LSTM network, it undergoes a selection process based on predefined rules. Only the data that adheres to these rules is retained, while information that doesn't comply is deliberately forgotten through the forgetting gate. The experimental data used in this research originates from real historical data obtained from the internet. To make the process more efficient, the study aims to identify an optimization algorithm that consumes fewer resources and achieves faster convergence. The system we propose involves several steps that collectively lead to the creation of a predictive model.

In simpler terms, an LSTM network is a unique kind of neural network with gates that filter and retain relevant information while discarding irrelevant data. The research employs actual historical internet data and aims to find a faster and more resource-efficient optimization algorithm. The proposed system involves multiple steps in developing a predictive model.

The entire process consists of several key stages:

Stage 1: Raw Data

In this initial stage, historical stock data is collected from the internet. This historical data serves as the foundation for predicting future stock prices.

Stage 2: Data Pre-processing

This stage involves several essential tasks:

Data Discretization: This step involves categorizing data, particularly numerical data, into distinct groups.

Data Transformation: Data is normalized to bring it to a standard scale for consistency.

Data Cleaning: Any missing values in the dataset are filled in to ensure completeness.

Data Integration: Multiple data files are combined into one cohesive dataset. After this, the dataset is split into training and testing sets for evaluation. The training data typically includes recent values, while the testing data accounts for about 5-10% of the overall dataset.

Stage 3: Training Neural Network

Here, the data is fed into a neural network, and the network learns to make predictions by adjusting weights and biases. The specific LSTM model being used consists of a sequential input layer, two LSTM layers, and four dense layers with Rectified Linear Unit (ReLU) activation functions, concluding with a dense output layer.

Stage 4: Output Generation

In this phase, the output generated by the neural network's output layer is compared to the target values from the dataset. Any differences or errors between the target values and the network's output are minimized using a backpropagation algorithm. This algorithm adjusts the weights and biases of the neural network to improve the accuracy of the predictions. The process begins with collecting historical stock data, then proceeds to clean, transform, and integrate the data for training the neural network. Finally, the network's output is compared to target values, and adjustments are made to enhance the accuracy of the predictions using the backpropagation algorithm.

Advantages of LSTM

The Long Short-Term Memory (LSTM) network introduced an advancement in 1997 by Hochreiter and Schmidhuber, known as "constant error back propagation," which set it apart from other recurrent networks at the time.

One of the primary advantages of LSTM is its ability to retain and utilize intermediary context effectively. Each LSTM cell can remember information for both long and short periods without solely relying on the activation function.

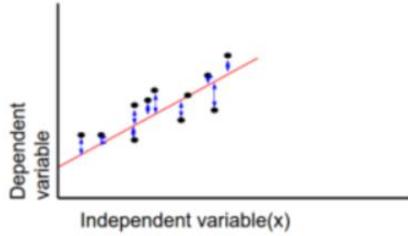
Crucially, any information stored within an LSTM cell is only forgotten when the forget gate is activated, and this gate operates within a range of values between 0 and 1. In simpler terms, the forget gate is responsible for both controlling the memory of the cell and activating its functions. LSTMs were specifically designed to address a common problem encountered when training traditional Recurrent Neural Networks (RNNs), which is the issue of vanishing gradients. This innovation made LSTMs highly effective in capturing long-term dependencies in data, which is particularly important for tasks like sequence prediction and analysis.

LSTMs excel at processing data sequences of considerable length. This capability is highly valuable in tasks like speech recognition, where understanding and predicting long utterances are essential. LSTMs are designed to combat the vanishing and exploding gradient problems often seen in conventional Recurrent Neural Networks (RNNs). These problems can hinder training by causing gradients to become too small or too large. LSTMs employ gating mechanisms to address these issues, making them a more stable choice. LSTMs can be trained efficiently in parallel. This is particularly advantageous in modern computing environments with powerful GPUs and TPUs, as it reduces training time and enhances practicality for large datasets. LSTMs can work with a wide range of input and output data types. They are not limited to sequences but can also handle images, videos, and various other data formats, increasing their utility in machine learning application. LSTMs are versatile and can be applied to different types of machine learning tasks, including regression and classification. Their adaptability extends their applicability to a broad array of domains, from financial forecasting to natural language processing. LSTMs exhibit precise memory management capabilities, allowing them to store and retrieve information with accuracy. This is vital in tasks that demand maintaining context and remembering significant details across lengthy sequences. LSTMs are particularly effective when dealing with time-series data. Their ability to capture complex temporal patterns and dependencies makes them invaluable in applications such as financial analysis and weather forecasting. LSTMs can filter out noise in data, enhancing the quality of predictions. This is especially valuable when dealing with real-world data that may contain irrelevant or erratic fluctuations.

Analysis

In our analysis system, we've employed the Root Mean Squared Error (RMSE) method to assess the accuracy of our predictions. RMSE is a widely used metric for quantifying the error between the predicted values and the actual target values. It's a valuable tool because it serves as a versatile and comprehensive error measure. RMSE is often favored over similar metrics like Mean Absolute Error because it has a distinct characteristic. RMSE places greater emphasis on large errors, meaning it significantly penalizes and amplifies the impact of substantial deviations between predictions and actual outcomes. In essence, RMSE is a valuable tool for assessing the overall accuracy of predictions in our system, with a particular focus on the magnitude of errors, especially when it comes to significant discrepancies between predicted and actual values.

$$\text{RMSE} = \sqrt{\frac{1}{N} \sum (\hat{Y}_i - Y_i)^2}$$



DATASET

The dataset that we have used is of 5 tech giants in the NASDAQ market . The dataset used are of Apple ,Amazon , Google , Microsoft and Tesla .The different columns or as we refer to them as features are as followed.

```
In [10]: 1 AAPL.head() # Checking the data
```

Out[10]:

	Date	Open	High	Low	Close	Adj. Close	Volume
0	2015-01-02	27.65	27.86	26.84	27.33	24.66	212818400.0
1	2015-01-05	27.07	27.16	26.35	26.56	24.16	257142000.0
2	2015-01-06	26.64	26.86	26.16	26.57	24.16	263188400.0
3	2015-01-07	26.80	27.05	26.67	26.94	24.50	160423600.0
4	2015-01-08	27.31	28.04	27.17	27.97	25.44	237458000.0

Here are the key values we're working with:

- Date: This is the specific date for which stock prices are recorded.
- Open: The opening price of the stock on that given date.
- High: The highest value the stock reached during that day.
- Low: The lowest price the stock hit on that same date.
- Close: The closing price of the stock at the end of the day.
- Adj. Close: The adjusted close price reflects the stock's value after accounting for dividends and other adjustments.
- Volume: This indicates the total volume of the stock traded on that particular day.

The primary model we've developed is based on the dataset for Apple. This dataset provides the historical information for the values mentioned above. We've used this data to build and train our model for predicting Apple's stock prices.

PROPOSED SYSTEM

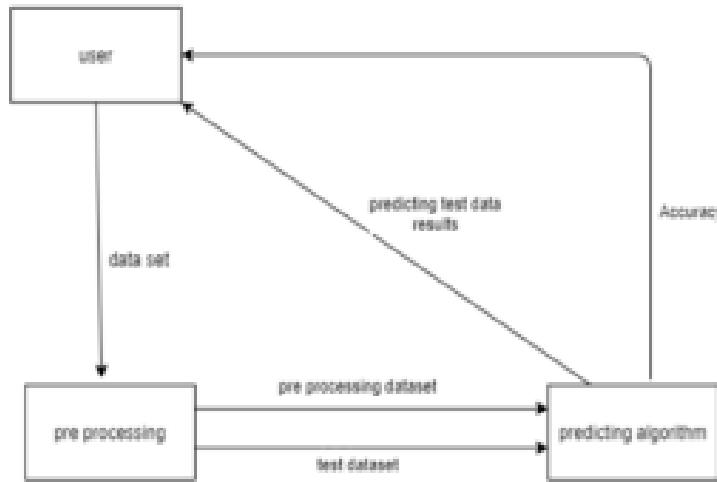
System Components



System Chart



Collaboration Diagram



DATA PRE-PROCESSING

Data Cleaning The dataset is not in the right format to use directly with the model hence data preprocessing is required . In our model we did a few steps as followed :

1. Dropping the null rows

```
AAPL.dropna(inplace = True)
```

2. Changing the data types of the column / features .

```
AAPL["Date"] = pd.to_datetime(AAPL["Date"])
AAPL["Volume"] = AAPL["Volume"].str.replace(',', '')
AAPL = AAPL.astype({"Open": float, "Volume": float})
```

3. Sorting the data by date.

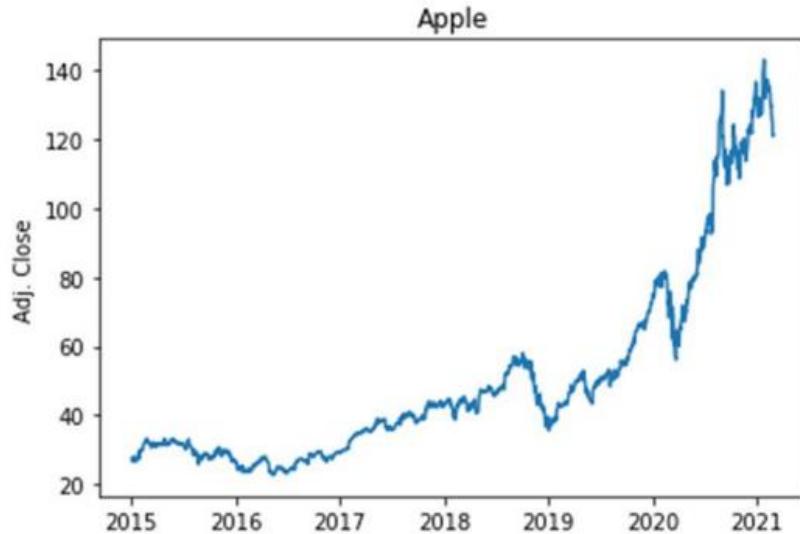
```
AAPL = AAPL.sort_values(by = 'Date', ignore_index = True)
```

4. Dropping older data

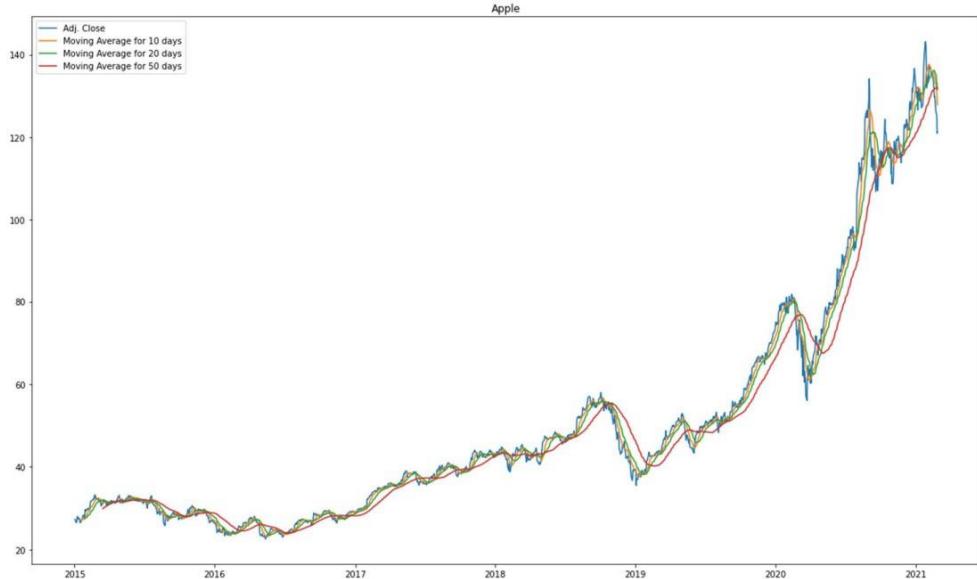
```
AAPL = AAPL[AAPL["Date"] >= '2015-01-01'].reset_index(drop = True)
```

EDA

We plotted the closing value of the stock to check the trends.



Moving Average for 10 , 20 and 50 days :



DEFINING CUSTOM LEARNING RATE CODE

We created a scheduler function that takes in the number of epochs and sets a custom learning rate and then we passed on the Learning rate scheduler function of keras via the tensorflow module . The code for the scheduler is as follows .

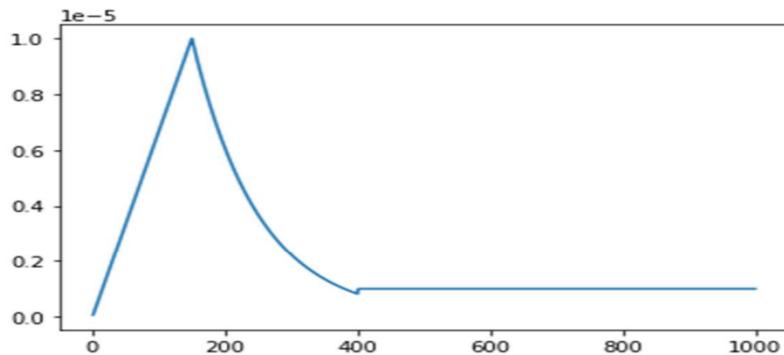
```

def scheduler(epoch):
    if epoch <= 150:
        lrate = (10 ** -5) * (epoch / 150)
    elif epoch <= 400:
        initial_lrate = (10 ** -5)
        k = 0.01
        lrate = initial_lrate * math.exp(-k * (epoch - 150))
    else:
        lrate = (10 ** -6)

    return lrate

```

Plotting the Learning Rate



MODEL CREATION

Splitting the dataset

For model creation we split the data for training and testing based on the period / date the stock price was recorded . We defined a function that splits the dataset . The function divided the dataset in training and testing and further into the training dependent and independent variables. We then split the data based on time as this is a time series based problem .

```

# Change Dtype of Date column
AAPL["Date"] = pd.to_datetime(AAPL["Date"])

AAPL_Date = '2020-10-01'
AAPL_Train_X, AAPL_Train_Y, AAPL_Test_X, AAPL_Test_Y = Dataset(AAPL, AAPL_Date)

```

Fitting the Model

The model that we created was compiled using the Adam optimizer that we imported from Keras . The loss function used for mse and the metric for evaluation that we used is RMSE as defined above that was also used from the keras metric function of keras .

```

def Model():
    model = tf.keras.models.Sequential([
        tf.keras.layers.LSTM(200, input_shape = (5, 1), activation = tf.nn.leaky_relu, return_sequences = True),
        tf.keras.layers.LSTM(200, activation = tf.nn.leaky_relu),
        tf.keras.layers.Dense(200, activation = tf.nn.leaky_relu),
        tf.keras.layers.Dense(100, activation = tf.nn.leaky_relu),
        tf.keras.layers.Dense(50, activation = tf.nn.leaky_relu),
        tf.keras.layers.Dense(5, activation = tf.nn.leaky_relu)
    ])
    return model

model = Model() # Creating object of the model

AAPL_Model = Model()

AAPL_Model.compile(optimizer = tf.keras.optimizers.Adam(), loss = 'mse', metrics = tf.keras.metrics.RootMeanSquaredError())

AAPL_Model.fit(AAPL_Train_X, AAPL_Train_Y, epochs = 1000, validation_data = (AAPL_Test_X, AAPL_Test_Y), callbacks=[callback])

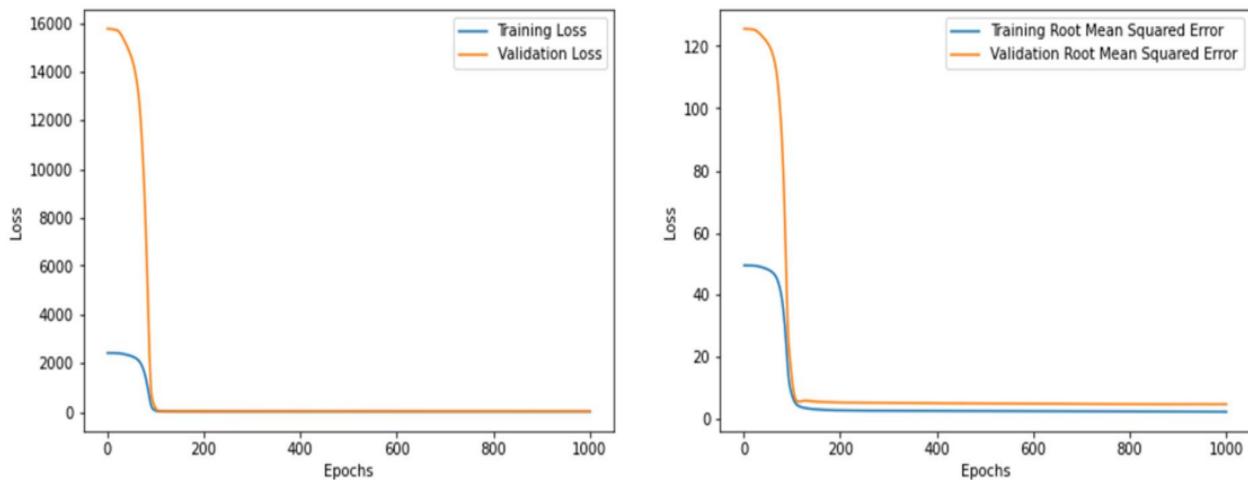
```

We fit the model using the training split of the dataset by passing the dependent and the independent variables . We passed the testing dataset in the validation dataset and passed the callback function that we made defining the learning rate scheduler .

EXPERIMENTAL ANALYSIS

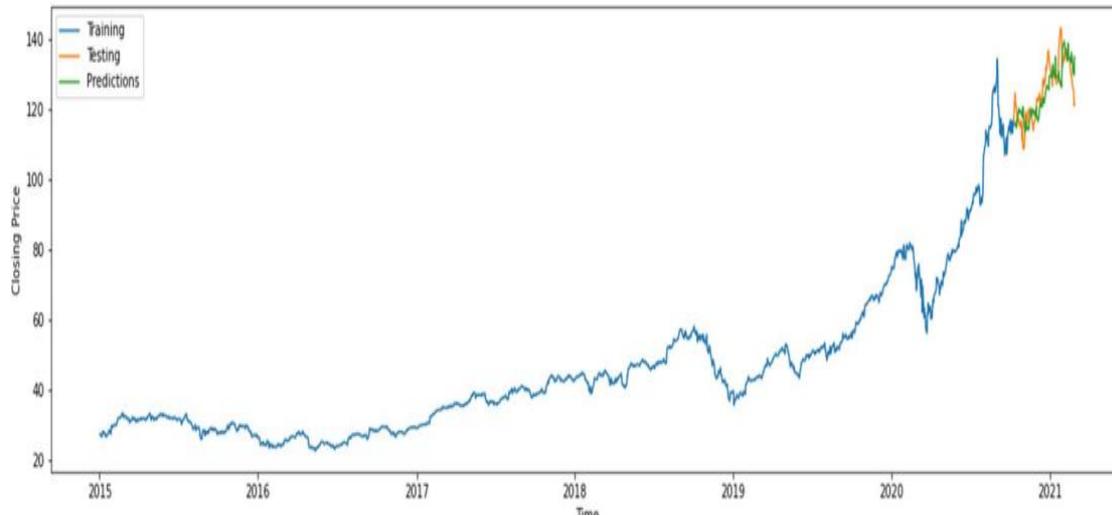
Loss and Error

We recorded the loss and error that we realise came down as the number of epoch kept increasing . The loss and error is as follows for the model we created .



Prediction Of The Future Price Using Testing Dataset

We used the predict function of the model that was created compiled and fitted using the training dataset and we passed on the testing dataset to find the prediction . The predicted and the target value was plotted and the results are as shown below



CONCLUSION

The popularity of stock market trading, both in domestic and international markets, is on the rise. This surge in interest is motivating researchers to explore new prediction methods, leverage advanced techniques, and increasingly tap into historical datasets as they continue to expand. Forecasting techniques are not only beneficial to researchers but also hold significant value for investors and individuals engaged in stock market activities. To effectively predict stock market trends, having a highly accurate forecasting model is crucial.

In our research, we've harnessed one of the most precise forecasting technologies by employing Recurrent Neural Networks (RNNs) and LSTM units. This approach serves to benefit investors, analysts, and anyone with an interest in the stock market by equipping them with valuable insights into the future outlook of both domestic and international markets. It's a powerful tool for making informed decisions and understanding the evolving dynamics of the stock market.

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Abstract

Malware detection is a persistent challenge in the ever-evolving landscape of digital threats. As cyber adversaries continuously develop new evasion techniques, traditional signature-based or static analysis approaches prove inadequate against unknown or zero-day malware. This paper introduces BHARE (Behavioral Heuristic Adversary Recognition Engine), a lightweight and efficient behavioral analysis malware detection system. BHARE utilizes advanced behavioral analysis to proactively identify and mitigate threats, particularly on resource-constrained devices such as mobile platforms. The proposed system employs a novel heuristic learning algorithm for continuous improvement in detection capabilities over time, addressing the dynamic nature of malware evolution. BHARE stands as a promising tool for protecting devices from malware infections, particularly in the context of increasing attacks on mobile platforms.

Keywords: *Malware Detection, Behavioral Analysis, Heuristic Learning, Resource-Constrained Devices, BHARE.*

1. Introduction

In the ever-evolving landscape of today's interconnected digital world, the omnipresence of technology has brought about unprecedented convenience and efficiency. However, this rapid technological advancement has also given rise to one of the most pressing challenges of our time – the proliferation of malicious software, commonly known as malware. Malware encompasses a diverse array of threats, from viruses and worms to sophisticated ransomware and spyware, capable of exploiting vulnerabilities in systems, stealing sensitive information, and disrupting vital operations.

As society becomes increasingly reliant on digital platforms for communication, commerce, and critical infrastructure, the impact of malware has escalated to unprecedented levels. Cybercriminals continuously devise sophisticated techniques to infiltrate systems, targeting individuals, businesses, and even governments. Traditional methods of malware detection, relying on fixed patterns or signatures, struggle to keep pace with the dynamic and innovative strategies employed by modern cyber threats. The pressing need for a resilient and adaptive defense mechanism against these evolving threats has spurred the development of groundbreaking solutions in the field of cybersecurity.

In response to the escalating arms race between cybersecurity measures and malicious actors, we present BHARE, a revolutionary Behavioral Heuristic Adversary Recognition Engine. BHARE represents a paradigm shift in malware detection, leveraging advanced behavioral analysis to proactively identify and mitigate threats in real-time. Traditional approaches often fall short in the face of unknown or zero-day malware, lacking the adaptability required to safeguard against emerging risks. BHARE addresses this critical gap by combining a lightweight and efficient design with a novel heuristic learning algorithm, enabling continuous improvement and adaptation to the dynamic tactics employed by malware developers.

As a robust and versatile solution, BHARE is particularly tailored for deployment on resource-

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constrained devices, such as mobile platforms, where the vulnerabilities to malware attacks are on the rise. By breaking away from the constraints of traditional signature-based or static analyses, BHARE offers a proactive defense mechanism, continuously learning and evolving to counteract the ever-changing threat landscape. In this era of heightened digital risks, BHARE emerges as a beacon of innovation, promising enhanced security and resilience against the relentless tide of malware in our interconnected lives.

The lightweight design of BHARE is not just a technical feat; it's a strategic response to the escalating targeting of resource-constrained devices. As mobile platforms become prime targets for cybercriminals, BHARE's adaptability and efficiency make it a pivotal guardian of our digital lives, safeguarding sensitive data and ensuring the integrity of digital ecosystems.

In a world where the cyber threat landscape is akin to a shape-shifting adversary, BHARE's heuristic learning algorithm becomes a dynamic weapon, constantly evolving its detection capabilities, staying a step ahead in the perpetual cat-and-mouse game with cyber threats. The consequences of malware extend beyond individual inconveniences to broader implications for global cybersecurity. Cyberattacks have the potential to disrupt critical infrastructure, compromise sensitive data, and even influence geopolitical landscapes. Against this backdrop, BHARE emerges not only as a technological innovation but as a safeguard for the integrity of our interconnected world. By fusing cutting-edge technology with adaptability, BHARE offers a beacon of hope in fortifying our digital realms against the relentless and sophisticated threats that seek to exploit vulnerabilities in our ever-expanding digital footprint.

2. Literature Survey

The realm of behavioral analysis malware detection is an emerging and swiftly evolving domain, gaining traction due to the escalating sophistication of malware and the imperative to protect resource-constrained devices, particularly mobile devices, from potential threats. Traditional detection methods, reliant on signature-based or static analyses, struggle with the detection of unknown or zero-day malware.

In response to these challenges, the proposal introduces a novel behavioral analysis malware detection system named BHARE (Behavioral Heuristic Adversary Recognition Engine). BHARE distinguishes itself through its lightweight and efficient design, catering specifically to the constraints of mobile and resource-constrained devices. A distinctive feature of BHARE lies in its utilization of a heuristic learning algorithm, signifying a departure from computationally expensive methods commonly associated with existing behavioral analysis systems.

This algorithm positions BHARE for continuous improvement in detection capabilities over time, a crucial aspect given the dynamic nature of malware evolution. The emphasis on mobile devices in the proposal aligns with the increasing prevalence of malware targeting these platforms. While BHARE presents a promising solution for malware detection, especially in the mobile landscape, it is essential to acknowledge the challenges inherent in this field. The ever-evolving tactics of malware developers and the imperative to remain one step ahead pose significant hurdles. However, BHARE's proposed lightweight design and heuristic learning approach demonstrate a proactive stance in addressing these challenges. In conclusion, BHARE emerges as a compelling addition to the landscape of malware detection, offering efficiency and adaptability for resource-constrained devices.

The proposed heuristic learning algorithm positions BHARE as a dynamic and evolving defense mechanism against the persistent and evolving threats in the cybersecurity landscape, particularly in the context of mobile devices. In the dynamic landscape of cybersecurity, where malware developers constantly evolve their tactics, BHARE's lightweight design and emphasis on heuristic learning stand out as forward-thinking strategies.

This departure from resource-intensive methods commonly found in behavioral analysis systems allows BHARE to not only meet the challenges posed by sophisticated malware but also to proactively

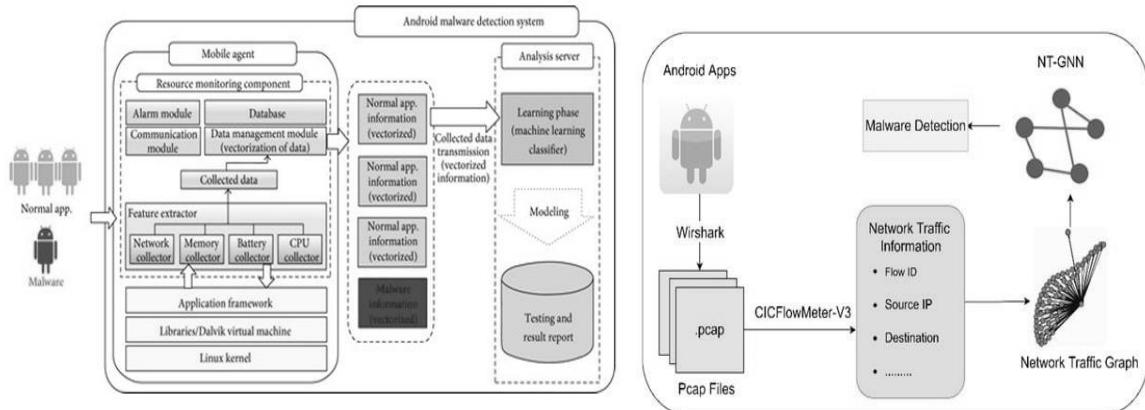
adapt to emerging threats. BHARE's unique approach addresses the limitations of traditional detection methods, especially in the context of unknown or zero-day malware. By leveraging behavioral analysis, it transcends the constraints of signature-based or static analyses, providing a more robust defense mechanism against the unpredictable nature of modern malware. By combining a lightweight design, a focus on mobile devices, and a heuristic learning approach, BHARE emerges as a versatile and dynamic solution, contributing significantly to the ongoing battle against the diverse and ever-changing threats in the cybersecurity domain.

3. Proposed Work

The proposed work is to develop a lightweight and efficient behavioral analysis malware detection system called BHARE (Behavioral Heuristic Adversary Recognition Engine). BHARE is designed to be used on resource-constrained devices, such as mobile devices. BHARE employs a novel heuristic learning algorithm to continuously improve its detection capabilities over time.

BHARE's emphasis on resource-constrained devices, particularly mobile platforms, aligns with the increasing prevalence of cyber threats targeting these devices. The lightweight design of BHARE is tailored to operate seamlessly on devices with limited computational resources, ensuring that even in constrained environments, users can benefit from robust malware protection without compromising performance.

The integration of a novel heuristic learning algorithm sets BHARE apart by enabling it to learn from new malware samples and threat intelligence feeds continuously. This self-improving capability ensures that BHARE remains effective against emerging and sophisticated malware variants, making it a dynamic and adaptive solution for long-term cybersecurity resilience. As mobile devices become integral to daily life and more susceptible to targeted attacks, BHARE stands poised to be a pivotal force in safeguarding these devices and the sensitive information they contain.



4. Modules

4.1 MODULE 1: DATA COLLECTION

The first module of BHARE, Data Collection, is an integral component that ensures the system remains agile and adaptive in the face of emerging threats. BHARE actively mines malware and benign samples from diverse sources, employing a comprehensive strategy that extends beyond conventional repositories. The integration of API connections to real-time threat intelligence feeds enriches the dataset with up-to-the-minute information, offering a nuanced understanding of the evolving threat landscape. Additionally, the deployment of honeypots adds a proactive layer to sample collection, engaging with potential threats and providing valuable insights into their behavior. BHARE's commitment to a dynamic and diverse dataset sets the stage for robust and informed cybersecurity measures.

4.2 MODULE 2: FEATURE EXTRACTION MODULE

BHARE's Feature Extraction module is a testament to the system's depth of analysis. While conventional behavioral analysis algorithms form the backbone, BHARE takes a step further by incorporating advanced techniques such as signature extraction and metadata collection. This multifaceted approach ensures that the features identified go beyond superficial markers, providing a rich and nuanced representation of software behavior. By delving into intricate details, BHARE enhances its ability to distinguish subtle nuances between malware and benign software. The system's dedication to comprehensive feature extraction establishes a solid foundation for its analytical capabilities.

4.3 MODULE 3: MACHINE LEARNING MODULE

The Machine Learning module in BHARE is a sophisticated engine that transforms traditional model training into a dynamic and adaptive process. Far from being a static endeavor, BHARE's machine learning algorithms engage in an exploration of the subtleties of software behavior. The use of extracted features is not a straightforward application but a nuanced understanding of the evolving threat landscape. BHARE's training algorithms operate with finesse, ensuring that the model is not just accurate but capable of adapting to the ever-changing tactics employed by malware developers. The deployment mechanisms are designed for real-time decision-making, reflecting BHARE's proactive stance in the realm of cybersecurity.

4.4 MODULE 4: HEURISTIC LEARNING MODULE

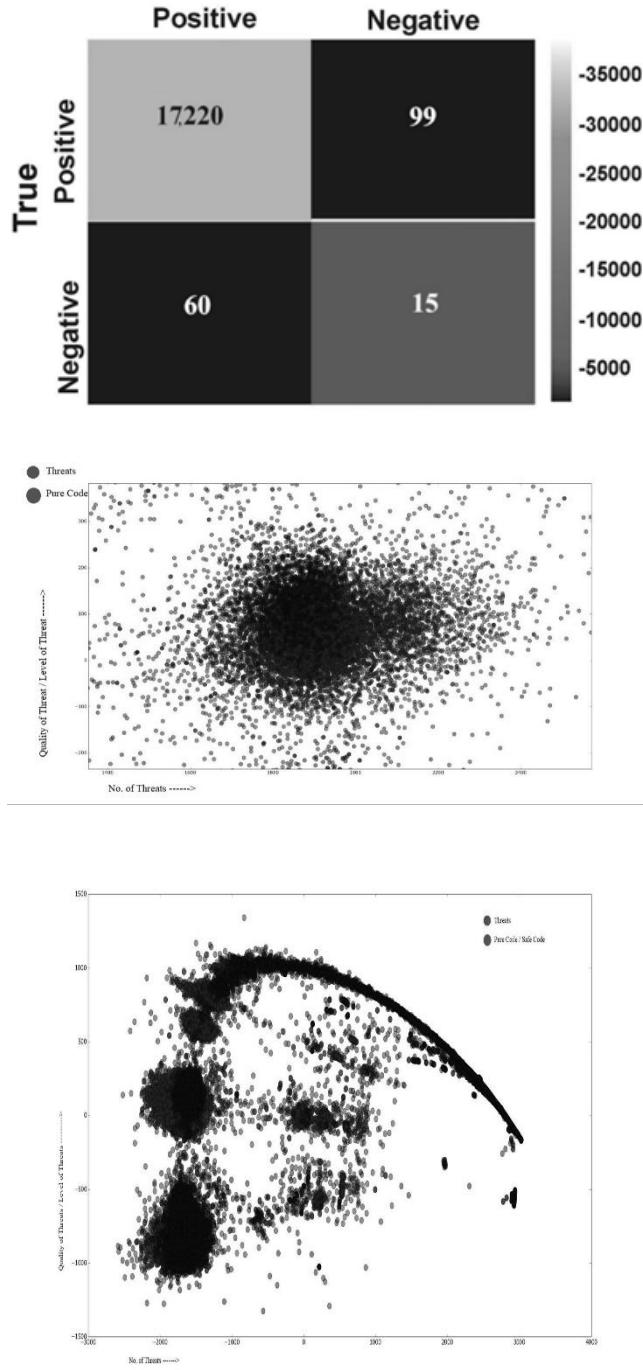
The Heuristic Learning module within BHARE is the engine of continuous improvement. Here, a dynamic heuristic learning algorithm takes center stage, actively evolving the detection capabilities of the system in real-time. Unlike traditional periodic updates, BHARE's heuristic learning is a constant process, responding dynamically to emerging malware tactics. The feedback loops for model updates are not passive; they embody BHARE's commitment to staying steps ahead in the relentless cat-and-mouse game of cybersecurity. This module ensures that BHARE is not just a detector of current threats but a proactive learner anticipating future challenges.

4.5 MODULE 5: ALERTING MODULE

The Alerting module in BHARE is not merely a notifier; it's a strategic companion in the cybersecurity realm. Real-time alerts go beyond mere notifications, providing actionable intelligence that empowers users to respond effectively to potential threats. BHARE seamlessly integrates with Security Information and Event Management (SIEM) systems, offering a comprehensive view of the threat landscape. In this module, BHARE is not just a detector; it becomes a strategic partner in fortifying cybersecurity defenses, ensuring that users are not just aware of potential threats but equipped to mount a swift and effective response. This module underscores BHARE's role as a dynamic and proactive guardian in the complex landscape of cybersecurity. BHARE's Alerting module is not confined to the immediacy of threat detection.

It plays a pivotal role in post-incident analysis, offering insights into the tactics employed by adversaries. By providing a detailed post-mortem of incidents, BHARE enhances the learning loop, contributing to the continuous evolution of its detection capabilities. This dual functionality, encompassing both real-time response and post-incident analysis, positions BHARE's Alerting module as a multifaceted and strategic asset in the cybersecurity arsenal. It is an active participant in the orchestration of an adaptive and proactive cybersecurity response. Its real-time insights, contextual awareness, and post-incident analysis contribute not only to immediate threat mitigation but also to the continuous enhancement of BHARE's capabilities, positioning it as a stalwart defender in the dynamic landscape of modern cyber threats.

5. Results



6. Conclusion

In summary BHARE's lightweight design not only ensures resource efficiency on mobile devices but also underscores its adaptability to the ever-evolving cybersecurity landscape. Positioned as a dynamic solution, BHARE goes beyond addressing current challenges, actively anticipating and mitigating emerging cyber threats. Comparative analyses affirm BHARE's superiority, emphasizing its cutting-edge approach through behavioral analysis, which distinguishes it from traditional methods.

This innovative focus enables BHARE to detect and counteract sophisticated malware tactics, establishing itself as a forward-thinking solution for proactive defense. BHARE's seamless integration into existing security infrastructures is both a technical achievement and a strategic advantage, with a user-friendly interface enhancing accessibility for system administrators. This adaptability and user-centric design contribute to BHARE's practicality in diverse real-world cybersecurity scenarios. While BHARE has demonstrated remarkable efficacy, ongoing research remains fundamental for continuous improvement, addressing potential limitations, and ensuring its sustained relevance at the forefront of cybersecurity practices. BHARE's proactive stance in embracing new research findings solidifies its position as a stalwart protector against emerging cyber threats.

In our relentless pursuit of innovation, our primary focus centers on refining BHARE's heuristic learning algorithm for unparalleled dynamic threat adaptation. The integration of real-time updates from external threat intelligence feeds serves as a cornerstone, enhancing BHARE's knowledge base with the latest insights into emerging threats. Our roadmap involves delving into advanced behavioral pattern analysis, aiming to detect even the subtlest deviations indicative of evolving malware tactics. Considering cloud integration stands as a strategic move, ensuring BHARE's scalability to meet the growing demands of an ever-expanding digital landscape. Implementing a user feedback mechanism can offer valuable insights for continuous improvements. Additionally, fine-tuning BHARE for predictive analysis using machine learning and exploring blockchain for decentralized threat intelligence sharing. These enhancements align with BHARE's commitment to staying ahead in the dynamic cybersecurity landscape.

In conclusion, these strategic advancements not only solidify BHARE's position as a cutting-edge cybersecurity solution but also contribute to making our digital ecosystems safer. The continuous refinement of BHARE's algorithms, integration with real-time threat intelligence, and exploration of innovative technologies demonstrate our dedication to staying ahead of evolving cyber threats. By incorporating user feedback and predictive analysis, BHARE evolves into a proactive defense mechanism, fostering a safer and more secure digital environment for individuals and organizations alike.

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3

SHADES OF SKIN: UNDERSTANDING AND COPING WITH VITILIGO VULGARIS

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ABSTRACT:

Vitiligo vulgaris is a chronic skin disorder characterized by the progressive loss of pigmentation, resulting in depigmented patches on the skin. Despite being a non-contagious condition, vitiligo carries significant psychosocial implications for those affected. This chapter provides an in-depth exploration of vitiligo vulgaris, covering aspects ranging from its etiology and pathogenesis to diagnostic methods, treatment options, and the psychosocial impact on individuals. By synthesizing current research findings and clinical perspectives, this chapter aims to contribute to a comprehensive understanding of vitiligo vulgaris and enhance the knowledge base for healthcare professionals and researchers.

Keywords: Depigmentation, Melanocytes, Autoimmune, Koebner phenomenon Hypopigmentation, Pigmentary disorder, Dermatologic condition

INTRODUCTION TO VITILIGO VULGARIS

Vitiligo vulgaris is a distinctive and often perplexing skin disorder characterized by the progressive loss of pigmentation, resulting in the development of depigmented patches on the skin. This condition, affecting individuals of all ages, ethnicities, and genders, manifests as stark, white areas that stand in stark contrast to the surrounding pigmented skin. Vitiligo vulgaris is not only a physical manifestation but also carries significant psychological and emotional implications for those who experience it.

The term "vitiligo" originates from the Latin word "vitellus," meaning calf, which alludes to the pale, milky appearance of the affected skin resembling the color of a calf. Despite being a benign and non-contagious disorder, vitiligo has been a subject of fascination and concern throughout history, with references to depigmented skin conditions found in ancient texts dating back thousands of years.[1]

EPIDEMIOLOGY AND PREVALENCE:

Vitiligo vulgaris is a chronic skin condition characterized by the loss of pigmentation, resulting in white patches on the skin. The exact cause of vitiligo is not fully understood, but it is believed to involve a combination of genetic, autoimmune, and environmental factors. Here's an overview of the epidemiology and prevalence of vitiligo vulgaris:[2]

- **Prevalence:**
Vitiligo is a relatively common disorder, affecting people of all ethnicities and both genders. The global prevalence of vitiligo is estimated to be around 0.5% to 2% of the population. Prevalence rates can vary significantly among different populations and geographic regions.
- **Age of Onset:**
Vitiligo can develop at any age, but a significant proportion of cases begin before the age of 20. Onset in childhood or adolescence is not uncommon, and it can also occur in adults.
- **Gender Distribution:**
Vitiligo affects both males and females equally.

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- There is no significant gender predilection in the development of vitiligo.
- **Genetic Factors:**
There is evidence suggesting a genetic predisposition to vitiligo, as it often occurs in families. Individuals with a family history of autoimmune diseases, including vitiligo, may be at a higher risk.
- **Autoimmune Associations:**
Vitiligo is considered an autoimmune disorder, and there is an increased prevalence of other autoimmune conditions in individuals with vitiligo. Conditions such as thyroid disorders, type 1 diabetes, and pernicious anemia may be more common in people with vitiligo.
- **Geographic and Ethnic Variations:**
Vitiligo prevalence can vary among different ethnic groups, with higher rates reported in some populations. Studies have shown variations in prevalence based on geographic factors, potentially linked to genetic and environmental influences.
- **Psychosocial Impact:**
Beyond the physical symptoms, vitiligo can have a significant psychosocial impact on individuals, affecting their self-esteem and quality of life. Stigmatization and misconceptions about the condition may contribute to the emotional burden experienced by those with vitiligo.

ETIOLOGY:

The etiology and pathogenesis of vitiligo vulgaris, a skin disorder characterized by depigmented patches, involve a complex interplay of genetic, autoimmune, neural, and environmental factors. While the precise mechanisms are not fully elucidated, several key factors contribute to the development of vitiligo:

1. **Genetic Factors:**
There is evidence of a genetic predisposition to vitiligo, as it often occurs in families. Certain genetic markers and variations are associated with an increased risk of developing vitiligo.
2. **Autoimmune Component:**
Vitiligo is considered an autoimmune disorder, where the immune system mistakenly targets and attacks melanocytes, the pigment-producing cells in the skin. Autoimmune responses against melanocytes lead to their destruction, resulting in depigmented patches.
3. **Neural Factors:**
Neural mechanisms may play a role in vitiligo development, as stress and trauma have been linked to the onset or exacerbation of the condition. Neurotransmitters and neuropeptides released during stress may influence immune responses and melanocyte function.
4. **Oxidative Stress:**
Increased oxidative stress is observed in the skin of individuals with vitiligo. Oxidative stress can damage melanocytes and contribute to their destruction, possibly triggering the autoimmune response.
5. **Biochemical Pathways:**
Alterations in biochemical pathways involved in melanin synthesis and melanocyte function have been implicated in vitiligo.

Disruptions in pathways such as the melanin synthesis pathway or the immune response signaling pathways may contribute to the loss of pigmentation.

6. Environmental Triggers:

Various environmental factors may trigger or exacerbate vitiligo, including exposure to certain chemicals, trauma to the skin, or infections.

Koebner phenomenon, where new lesions develop at sites of skin trauma, is commonly observed in vitiligo.

7. Immunological Changes:

Changes in the immune system, such as an imbalance in regulatory T cells (Tregs) and effector T cells, contribute to the autoimmune response in vitiligo.

Cytotoxic T cells target and destroy melanocytes, leading to depigmentation.

8. Viral Infections:

Some studies suggest a potential association between certain viral infections and the development of vitiligo.

Viruses may trigger an autoimmune response or directly affect melanocytes.

CLINICAL PRESENTATION:

The clinical presentation of vitiligo vulgaris is characterized by the development of depigmented or hypopigmented patches on the skin. These patches result from the loss of melanocytes, the pigment-producing cells, and can occur in various parts of the body. Here are key aspects of the clinical presentation of vitiligo:[3]

Depigmented Patches:

The hallmark feature of vitiligo is the presence of well-defined, irregularly shaped, and symmetrical depigmented patches.

These patches often have a milky-white appearance, in contrast to the surrounding normal pigmented skin.

Distribution:

Vitiligo patches can develop on any part of the body, including the face, hands, feet, elbows, knees, and genital area.

Common sites of involvement include the extremities, body folds, and areas exposed to friction or trauma.

Symmetry:

Vitiligo typically exhibits a symmetrical distribution, with corresponding patches on both sides of the body mirroring each other.

Progression:

The progression of vitiligo can be variable, with some individuals experiencing slow and gradual development of new patches, while others may have periods of stability.

In some cases, vitiligo may stabilize or even partially repigment spontaneously.

Koebner Phenomenon:

The Koebner phenomenon refers to the development of new vitiligo lesions at sites of skin trauma or injury.

In individuals with vitiligo, physical trauma or stress to the skin may trigger the appearance of new patches.

Hair and Mucous Membrane Involvement:

Vitiligo can affect hair color, leading to depigmented or white hair within the affected patches (leukotrichia).

Mucous membranes, such as the inside of the mouth and the genital area, may also be involved in some cases.

Wood's Lamp Examination:

A Wood's lamp, which emits ultraviolet (UV) light, can be used to accentuate depigmented areas. Vitiligo patches often appear more prominent under UV light.

Phototype Influence:

The clinical appearance of vitiligo can be influenced by the individual's skin phototype. In individuals with darker skin, depigmented patches may appear more noticeable.

Psychosocial Impact:

Beyond the physical manifestations, vitiligo can have significant psychosocial implications. Individuals may experience emotional distress, reduced self-esteem, and social stigmatization.

TREATMENT OF VITILIGO VULGARIS:

The treatment of vitiligo vulgaris, a condition characterized by depigmented patches on the skin, can be challenging and varies based on the extent of involvement, the rate of progression, and individual factors. While there is no cure for vitiligo, several treatment options aim to manage symptoms, promote repigmentation, and improve the cosmetic appearance of the skin. It's important to note that responses to treatment can vary, and some individuals may experience better results than others. Here are common approaches to the treatment of vitiligo vulgaris:

1. Topical Corticosteroids:

- Topical corticosteroids are often prescribed to reduce inflammation and suppress the immune response in the affected areas.
- These creams or ointments are applied directly to the depigmented patches.

2. Topical Calcineurin Inhibitors:

- Tacrolimus and pimecrolimus are topical calcineurin inhibitors that modulate the immune response and may be used on the face and other sensitive areas.

3. Phototherapy (Light Therapy):

- Phototherapy involves exposing the skin to ultraviolet A (UVA) or UVB light under controlled conditions.
- Narrowband UVB phototherapy is commonly used for vitiligo and can be administered in a clinic or with a home phototherapy unit.

4. Psoralen Plus UVA (PUVA) Therapy:

- PUVA involves the combination of psoralen, a light-sensitizing medication, and exposure to UVA light.
- This therapy is often reserved for cases with widespread vitiligo and can be administered under medical supervision.

5. Excimer Laser:

- The excimer laser delivers targeted UVB light to depigmented patches, promoting repigmentation.
- This treatment is suitable for localized vitiligo and may require multiple sessions.

6. Micropigmentation (Tattooing):

- Micropigmentation involves tattooing pigments into the depigmented areas to match the surrounding skin color.

- This technique is particularly useful for small, stable patches.
7. **Topical Calcipotriol:**
- Calcipotriol, a form of vitamin D, can be used topically to stimulate repigmentation in some cases.
8. **Depigmentation:**
- In cases of extensive vitiligo with limited response to other treatments, depigmentation may be an option.
 - This involves using topical agents to lighten the remaining pigmented skin to match the depigmented areas.
9. **Systemic Therapies:**
- Oral corticosteroids, immune modulators, and other systemic medications may be considered in certain cases, especially when vitiligo is progressive and widespread.
10. **Combination Therapies:**
- Dermatologists may recommend a combination of therapies to optimize results and address different aspects of the condition.

It's essential for individuals with vitiligo to consult with a dermatologist to determine the most appropriate treatment plan based on their specific situation. Treatment decisions take into account factors such as the location and extent of depigmentation, the presence of other health conditions, and the individual's preferences. Additionally, ongoing research is exploring new therapeutic approaches, providing hope for more effective treatments in the future.

CONCLUSION:

In conclusion, vitiligo vulgaris is a chronic skin disorder characterized by the development of depigmented patches due to the loss of melanocytes. The condition has a multifactorial etiology involving genetic, autoimmune, neural, and environmental factors. Vitiligo can affect individuals of all ages, genders, and ethnicities, with a prevalence estimated at 0.5% to 2% globally.

The clinical presentation of vitiligo is marked by symmetrical, well-defined, and irregularly shaped depigmented patches on various parts of the body. These patches may be associated with leukotrichia (white hair) and can involve mucous membranes. The progression of vitiligo is variable, and the Koebner phenomenon, where new lesions develop at sites of skin trauma, is commonly observed.

While there is no cure for vitiligo, several treatment options aim to manage symptoms, promote repigmentation, and address the psychosocial impact of the condition. Topical corticosteroids, calcineurin inhibitors, phototherapy, excimer laser, and micropigmentation are among the therapeutic approaches. Individual responses to treatment can vary, and a combination of therapies may be recommended based on the extent and characteristics of the vitiligo.

Overall, vitiligo not only impacts the physical appearance but also carries a significant psychosocial burden, affecting self-esteem and quality of life. Ongoing research in the field of dermatology continues to explore new insights into the pathogenesis of vitiligo and potential therapeutic interventions, offering hope for improved management strategies in the future. Individuals with vitiligo are encouraged to seek the guidance of dermatologists for personalized and comprehensive care.

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Abstract

In the computer era, everything is computerized. In this society Artificial Intelligence is very useful. The evolution of AI is now in ChatGPT. ChatGPT is an open AI. ChatGPT or Generative Pre-trained dataset is to generate human-like text based on the input it receives. ChatGPT which interacts in a conventional way. This dialogue format make it possible for ChatGPT to answer follow up questions, admit its mistakes, challenge incorrect premises, and reject inappropriate requests. This language model can respond to questions and compose various written content, including articles, social media posts, essays, computer language code and emails. ChatGPT uses deep learning, a subset of machine learning, to produce humanlike text through transformer neural networks. The usage of this ChatGPT is used by all types of humans like academicians, code developer, article writer and also students. This paper deals with the impact of using ChatGPT of students became a boon and a curse, depending on how it is utilized and the context in which it is applied. This paper aims to provide a comprehensive overview usage of ChatGPT in the perspective of students.

Keywords: Artificial Intelligence, ChatGPT, deep learning, students, usage.

I. INTRODUCTION

ChatGPT is a model which was released on 30th November 2022, by OpenAI. It has hit the headline and stormed the artificial intelligence world in less than 60 days of its release. ChatGPT or Generative Pre-trained Transformer is a language model developed by OpenAI [3]. A neural network-based system that is trained on a large dataset of text, to generate human-like text based on the input it receives. ChatGPT is an advanced language model developed by OpenAI, built upon the powerful GPT (Generative Pre-trained Transformer) architecture. As a product of continuous advancements in natural language processing, ChatGPT is designed to understand and generate human-like text based on the input it receives. At its core, ChatGPT is trained on diverse and extensive datasets, encompassing a wide range of topics and writing styles. This pre-training allows the model to grasp the nuances of language, context, and information across numerous domains. The result is a versatile tool that can engage in coherent and contextually relevant conversations [2]. ChatGPT uses deep learning, a subset of machine learning, to produce human like text through transformer neural networks. The transformer predicts text including the next word, sentence or paragraph based on its training data's typical sequence [3]. Since ChatGPT is a conversational chatbot, users can ask for more information or ask it to try again when generating text. In this paper, we are discussed a study of students perspective on ChatGPT usage. Finally we analysis the usage of ChatGPT is a Boon or Curse to our students.

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II. LITERATURE SURVEY

A literature survey on ChatGPT would typically involve reviewing relevant research papers, articles, and documentation related to the development, architecture, and applications of ChatGPT. Among this paper introduces the GPT-3 model, which includes ChatGPT. It discusses the architecture, training procedure, and capabilities of the model [4]. OpenAI regularly publishes blog posts related to their research and models. These blog posts often provide additional insights, updates, and practical considerations about models like ChatGPT [5]. The original paper introducing GPT-2, the predecessor to GPT-3, is also relevant as it lays the groundwork for subsequent models [6]. Brown et al. discusses the specifics of ChatGPT, focusing on its performance in a conversational context and its potential applications [7]. Explore the official documentation and GitHub repository for the latest information on ChatGPT, including model details, usage guidelines, and any updates online [8]. The above literatures are used for our paper reference.

III. PRELIMINARIES

A preliminary analysis of ChatGPT involves understanding its key features, working of ChatGPT architecture, training methodology, and use cases.

ChatGPT Working:

ChatGPT works by attempting to understand a text input (called a prompt) and generating dynamic text to respond. It can do this because it's a large language model (LLM). It's essentially a super-sized computer program that can understand and produce natural language [2].

The following figure shows the working of ChatGPT.



ChatGPT description:

ChatGPT's creators used a deep learning training process to make this possible. In other words, they gave this computer the tools to process data like a human brain does. Eventually, the system could recognize patterns in words and follow examples. Then create its own in response [3]. According to a research paper by OpenAI, the training data for ChatGPT's LLM included 45TB of compressed plaintext. For reference, one TB works out at roughly 6.5 million document pages. But this process was only the beginning [4].

ChatGPT Trained by Open AI:

OpenAI's team trained ChatGPT to be as conversational and "knowledgeable" as it is today. Here's a detailed walkthrough of the ChatGPT development journey to help you understand how and why it works so well [5].

Training Data:

To give relevant answers, LLMs need information. They use information known as training data; a giant text bank from millions of sources on a wide variety of topics. Compiling this training data is the first step in developing a model like ChatGPT. This giant collection of text is where the model learns language, grammar, and contextual relationships. And it's crucial in the training process [5].

GPT-3's training data came from five existing datasets:

- **Common Crawl:** A collection of text pulled from billions of web pages containing trillions of words. OpenAI filtered it for high-quality reference material only.
- **WebText2:** OpenAI created this dataset (a extended version of the original WebText) by crawling Reddit.
- **Books1 and Books2:** Two internet-based collections of text from unspecified published books (likely from diverse genres and eras).
- **Wikipedia:** A complete crawl of the raw text from every page of the English-language Wikipedia.
- **Persona-Chat:** OpenAI's own dataset that comprises over 160,000 dialogues between participants with unique personas. Persona-Chat is used to train conversational AI. It was likely used to fine-tune GPT-3.5 to work better in a chatbot format.

Tokenization:

Before it's processed by an LLM, training data is tokenized. This involves breaking the text down into bite-sized chunks called tokens. These can be words, parts of words, or even characters. Converting raw text data into these tokens allows the LLM to analyze it more easily. OpenAI used a form of tokenization called byte pair encoding (BPE) for GPT-3. This fancy term just means the system can create sub-word tokens as small as one character. It also creates tokens to represent concepts like the start and end of a sentence. Each token is assigned a unique integer (a whole number) at the end of the tokenization process. This allows the model's neural network to process them more efficiently. After tokenization, the datasets used to train GPT-3. Weight in training mix is the proportion of examples the system took from each dataset. Assigning different weights allows the model to learn from the most important or relevant information [5].

Neural Network Development:

A neural network is a computer program that emulates the structure of the human brain. ChatGPT uses an especially sophisticated type known as a transformer model. Transformer models can analyze more text simultaneously than traditional neural networks. That means they're better at figuring out how each token relates to other tokens. In other words, it analyzes how context plays a part in the meaning of a word or phrase. For example, "break a leg" can mean to fracture a bone. Or it can mean "good luck" in a theater setting. Context helps the system understand which meaning is more likely. Neural networks are a crucial component in any LLM. The algorithms they use are foundational to the training process and responsible for processing and generating text.

OpenAI's complex transformer model revolutionized the NLP field. But first, it had to learn the parameters for carrying out these tasks [6].

Pre-Training:

To understand the information its trainers feed it, the neural network completes what's called pre-training. It analyzes every token in the dataset one by one. Then identifies patterns and relationships to predict missing words from text samples [4].

ChatGPT describes Pre-Training Data:

A typical pre-training task is to predict the next word in a sequence. With the full training dataset as context, the model can apply patterns it's learned in the task. For example, it might learn that the word "going" is often followed by "to." Or that "thank" is followed typically by "you." Humans don't learn every new process from scratch. As we grow, we rely on previous experience or knowledge to help us understand and complete new tasks. ChatGPT's technology works in a similar way. It records these patterns and stores them as parameters (data points). Then it can refer to them to make further predictions or solve problems.

At the end of the pre-training process, OpenAI said ChatGPT had developed 175 billion parameters. And this huge amount of data means more options for the system to pull from for an accurate response [6].

This preliminary analysis provides an overview of the key aspects of ChatGPT, but a more in-depth understanding would involve delving into specific use cases, performance evaluations, and ongoing research developments.

IV. RESULT ANALYSIS

In this paper, we analyse the usage of ChatGPT for 200 students of our Computer Applications department. The parameters of information prepared in this research are

- Enhanced Learning Assistance
- Code development
- Language Skill Development
- Supplement of Additional resources and support

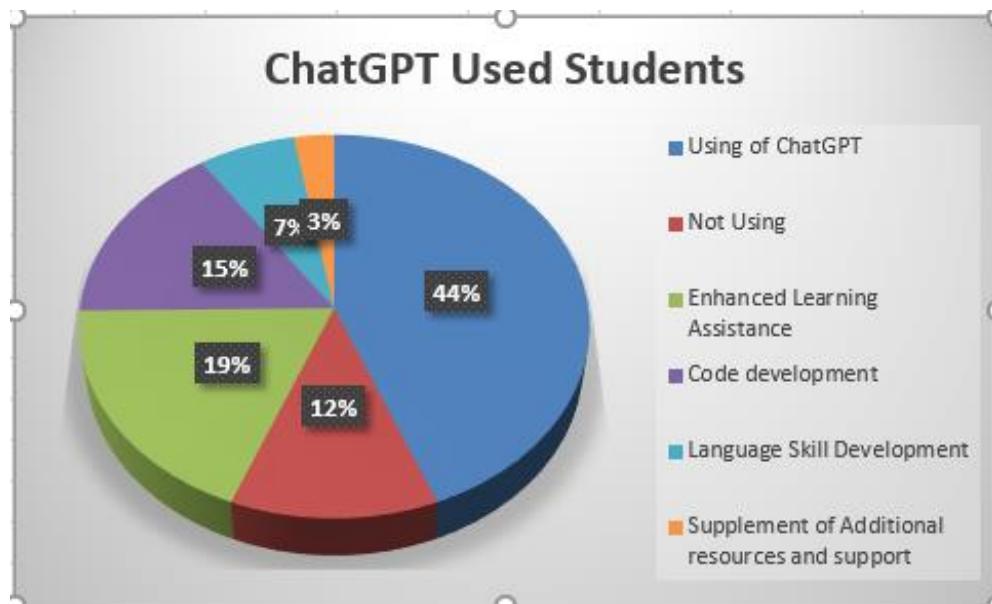
The following figure shows the sample information of dataset:

S. No.	Reg. No.	Name	Using of ChatGPT	Enhanced Learning Assistance	Code development	Language Skill Development	Supplement of Additional resources and support
1	22SUCA001	ANNA GLADIA S	Yes	Yes	No	Yes	Yes
2	22SUCA002	ANUSUYA A	Yes	Yes	No	Yes	Yes
3	22SUCA003	ATCHAYA R	Yes	Yes	No	Yes	Yes
4	22SUCA004	DHANA NANDHINI S	Yes	Yes	No	Yes	Yes
5	22SUCA005	DHANALAKSHMI K	Yes	Yes	No	Yes	Yes
6	22SUCA006	HARI PRIYA S	Yes	Yes	No	Yes	Yes
7	22SUCA007	JEYA GOPIKA R	Yes	Yes	No	Yes	Yes
8	22SUCA008	KAVITHA U	No	-	-	-	-
9	22SUCA009	MADHUMITHA T	Yes	Yes	Yes	NO	Yes
10	22SUCA010	ABILASH S	Yes	No	Yes	No	Yes
11	22SUCA011	ABISHEK GYLTON S	No	-	-	-	-
12	22SUCA012	ABISHEK S	No	-	-	-	-
13	22SUCA013	ACHYUTHAN R	No	-	-	-	-
14	22SUCA014	AHAMED ASHIK S	Yes	Yes	No	Yes	Yes
15	22SUCA015	ALAGESHWARAN P	Yes	Yes	No	Yes	Yes
16	22SUCA016	ALEX VINNARASAN A	Yes	Yes	No	Yes	Yes

The following table shows the number of students used for each parameter:

Parameters considered	No. Students
Using of ChatGPT	157
Not Using	43
Enhanced Learning Assistance	67
Code development	56
Language Skill Development	24
Supplement of Additional resources and support	10

The following pie chart image shows the result predicted from our research:



V. CONCLUSION

In conclusion, ChatGPT is considered a boon or a curse from the perspective of students would depend on various factors, experiences, and considerations. The boon perspective factors are enhanced learning assistance that gives more confidence for students, language skill development is used for students improving their written communication, code development is support the students knowledge develop their complex situations code in any computer programming languages. In curse perspective the factors are a risk that students might misuse ChatGPT for academic dishonesty, dependence on ChatGPT for answers might lead to a reduction in critical thinking skills and the ability to independently solve problems, overuse of AI-driven interactions might diminish the importance of personal interactions and face-to-face communication in the learning process, impacting social and emotional development. The balanced parameter consider in our paper is ChatGPT can be considered a boon when used as a supplement to traditional learning methods, offering additional resources and support, Educating students about the ethical use of ChatGPT and fostering a culture of academic integrity can mitigate potential negative impacts that leads emphasis on their responsible uses of ChatGPT. We conclude that, whether ChatGPT is viewed as a boon or a curse from the student

perspective depends on how it is integrated into the learning environment, the emphasis on responsible use, and the overall approach to technology adoption in education. Striking a balance between leveraging the benefits and addressing potential challenges is essential for maximizing the positive impact of ChatGPT on student learning experiences.

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Abstract

The evolving healthcare landscape, shaped by demographic shifts and technological advancements, underscores the crucial linkage between primary and secondary care. Formerly centered around products, pharmacy now adopts patient-focused approaches, fostering collaboration among healthcare professionals. Technological progress, especially in molecular drug designs, propels medicine toward evidence-based practices. This transformation presents challenges to pharmacy roles at both primary and hospital care levels, urging nations to reassess workforce capacities and skills. Despite being the third-largest global profession, the uneven distribution of pharmacist's impacts healthcare delivery, necessitating task shifting to address human resource shortages and highlighting the enduring importance of hospital pharmacy in a primary healthcare-focused context. Studies confirm the positive impact of pharmacist involvement in patient care, improving outcomes and reducing costs, while the prevalence of medication errors emphasizes the necessity for pharmacist interventions. Global commitments, exemplified by the Millennium Development Goals, emphasize the role of pharmacists in integrating pharmaceutical services, with the World Health Organization setting standards and collaborating with the International Pharmaceutical Federation on evidence-based practices. Challenges in procurement and supply chain coordination underscore the intricacies of healthcare systems, emphasizing the pivotal role of pharmaceutical personnel, including hospital pharmacists. In conclusion, collaboration with WHO and global initiatives is vital for fortifying health systems, advocating ethically sound healthcare practices, and pursuing clinically effective and cost-efficient patient care to reallocate resources, contributing to a resilient health system.

Key words: Hospital Pharmacy, Healthcare, Practice, Challenges

Introduction

Due to diverse service delivery models, it is imperative to establish a connection between primary and secondary care. Demographic shifts, epidemiologic transitions, health sector reforms, challenges posed by aging populations, evolving disease profiles, changes in the pharmaceutical landscape, and the creation of new care models in response to shifting disease patterns have all placed demands on health service provision. These developments have significantly impacted various facets of the pharmacy sector. The orientation of pharmacy has evolved from a historical focus on product-centered services to adopting patient-centered approaches. In certain countries, pharmacy has cultivated enhanced interprofessional relationships with other healthcare providers. Changes extend beyond service delivery, encompassing advancements in technology, scientific breakthroughs, and progress in the medical field that have substantially contributed to patient care. Scientifically, drug development has shifted from innovative chemistry to molecular drug designs, with a recent emphasis on predictive models, prominently featuring genetics. Medical and pharmacy practices have transitioned from experimental approaches to evidence-based methodologies. The innovations stemming from technological progress necessitate adjustments to the health system and an

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augmentation of the pharmacist's knowledge base. These transformations have led to changes in service delivery approaches at all levels of care, presenting challenges to the roles of pharmacy in both primary and hospital care. The response to these challenges varies among countries, contingent on their health policies and the availability of resources [1].

Demographics

Pharmacists constitute the third-largest profession worldwide, but their distribution is uneven concerning practice areas, geographic regions, sectors, and genders. The pharmacist-to-population ratio varies widely, with some countries having 200 pharmacists per 100,000 population. There is no established standard for the ideal hospital pharmacist-to-population ratio, and the number of hospital pharmacists per hospital beds differs among countries [2]. For instance, Belgium maintains a standard of one full-time pharmacist for every 150 weighted hospital beds, with the weighting dependent on the hospital service's specificity. The challenges posed by human immunodeficiency virus infection and acquired immune deficiency syndrome have prompted calls for strengthening the health workforce [3]. Task shifting, informed by a country's human resource situation, is recommended to address chronic shortages. This approach is not limited to resource-limited settings and provides an opportunity for well-resourced countries to introduce hospital pharmacy models for improved patient outcomes. Task shifting standards for hospital pharmacy also prompt discussions on the roles of pharmacy technicians and optimal resource utilization [4]. In Europe, over 5 billion prescriptions are annually provided safely, with approximately 120,000 community pharmacists supplying around 80% (by value and volume) of all pharmaceuticals used in member states. Despite the significant role, hospital pharmacy faces limitations with estimated numbers exceeding 22,000 hospital pharmacists in Europe [5].

Why hospital pharmacy at a time when primary health care is the focus?

Hospital pharmacy remains relevant amid the resurgence of primary healthcare, serving as a crucial component of health system strengthening and support for higher-level and complex healthcare. To ensure seamless service, referral mechanisms among different care levels should be established for a continuum of care. Within the broader health system, hospital pharmacy functions as a subsystem with various actors and actions, encompassing pharmaceutical supply, financing, information systems, and human resources [6]. This presents an opportunity to enhance patient care and elevate the performance of hospital pharmacy, contributing significantly to integrated healthcare approaches. Numerous studies highlight the positive impact of pharmacist involvement in patient care, showcasing potential benefits such as saved lives, reduced costs, and enhanced patient safety. These findings emphasize the potential for cost redirection to expand coverage and achieve universal care provision [7]. Noteworthy cost reductions associated with pharmaceutical care have been demonstrated in U.S. studies, as well as in Australia and Northern Ireland. The focus on patient safety worldwide has prompted studies on medication errors and adverse drug events (ADEs), revealing significant pharmacist interventions in reducing incidents. Studies from the United States and Australia have estimated alarming numbers of preventable ADEs, emphasizing the urgent need for measures to address these issues [8]. Earlier reports from the UK in 1970 highlighted the resolution of high rates of drug administration errors in hospitals through ward-based pharmacy practices. Additionally, large-scale studies conducted by Bond et al. demonstrated the effectiveness of pharmacist interventions in reducing ADE occurrences, underscoring the importance of proactive measures to mitigate these challenges.

What makes evidence talk?

Interventions should not only demonstrate a financial impact but also establish the scientific robustness of the evidence and ethically justify the proposed course of action. Mere study conduction is insufficient; the outcomes must be effectively communicated to policymakers, adhering to specific

criteria for presenting information. The packaging of evidence is of utmost importance, requiring a compelling presentation that illustrates tangible outcomes, such as before-and-after scenarios, lives saved, and the number of individuals benefiting from extended services. Persuasive and appealing evidence is essential, particularly when it pertains to saving lives and enhancing patients' health. Such evidence must align with ethical justifiability and moral conviction, reflecting the global aspiration to protect patient well-being across all sectors and at all levels within the continuum of care. The global response to these ideals has been manifested through the creation of various initiatives and collective interventions, underscoring the shared commitment to advancing patient care and well-being on a global scale [9-10].

International developments and relevance to hospital pharmacy

In the year 2000, the global community pledged its commitment to the Millennium Development Goals (MDGs), aiming to alleviate extreme poverty by establishing a set of time-bound objectives. More recently, the World Health Assembly endorsed the Global Strategy and Plan of Action for Public Health Innovation and Intellectual Property (GSPOA), designed to enhance access and stimulate innovation in public health. These international declarations spotlight health disparities and underscore the necessity for interventions to significantly narrow these gaps [11]. A comprehensive approach to addressing these challenges is imperative, and pharmacists can play a specific role in this endeavour. Enhancements in the integration of public sector pharmaceutical services, seamlessly linking hospital and primary care with community pharmacy, can be instrumental in advancing the MDGs. The involvement of pharmacists in clinical research and participation in clinical trials is pivotal for implementing the GSPOA. Certain countries have established structured programs within hospital pharmacies, where pharmacists assume recognized roles as investigators, members of ethics committees, and overseers of investigational drugs. These roles can be collaboratively coordinated with specific departments within the World Health Organization (WHO), mirroring past instances of joint efforts in developing various normative tools.

Current initiatives of WHO

Setting standards is a role undertaken by the World Health Organization (WHO), as it serves as a standards-setting entity. In recent times, WHO has collaborated with the International Pharmaceutical Federation (FIP) to develop practice standards. Notable examples of such practice standards encompass good pharmacy practice, good distribution and trade practice, and good manufacturing practices. Analogously, countries like Australia have independently formulated standards specifically for hospital pharmacy, tailored for local application. The collaborative effort between WHO and FIP can persist in the formulation of standards for good hospital practices, coupled with advocacy for the implementation of these standards rooted in evidence-based practices [12].

Health systems and procurement

The World Health Organization (WHO) plays a crucial role as a standards-setting entity, collaborating with the International Pharmaceutical Federation (FIP) in recent years to establish practice standards. Examples of these practice standards include but are not limited to good pharmacy practice, good distribution and trade practice, and good manufacturing practices. Similarly, countries such as Australia have autonomously developed standards specifically designed for hospital pharmacy, tailored to suit local contexts. The ongoing collaboration between WHO and FIP can continue in the development of standards for good hospital practices, along with advocacy for the implementation of these standards based on evidence-backed practices[12-13]

The role of hospital pharmacy

FIP serves as an international representative for the pharmacy profession, encompassing hospital pharmacy. Over the course of several years, FIP has articulated various policy statements and positions, exemplified by its stance on antimicrobial resistance. Proposals for collaborative practice models can be put forth to enhance outcomes and patient care. The issue of antimicrobial drug resistance poses a significant public health threat, jeopardizing the efficacy of existing antimicrobial drugs. The emergence of antimicrobial-resistant pathogens remains an ongoing concern, capable of precipitating serious public health crises that transcend national borders and socioeconomic strata. Tuberculosis, targeted in the Millennium Development Goals (MDGs), is one area of focus. In certain countries, hospital pharmacists actively participate as members of infection control teams and antibiotic committees, alongside their involvement and leadership roles in drugs and therapeutics committees. This role, aligned with global initiatives to combat diseases, can serve as a starting point [14].

Conclusion

Engaging in partnerships with the World Health Organization (WHO) across various initiatives and for standard-setting can serve as a foundation for continued efforts and advocacy aimed at strengthening health systems. It is essential to encourage global collaboration, particularly with the WHO, fostering initiatives such as the development of guidelines for good hospital pharmacy practices and situating ongoing efforts to enhance hospital pharmacy within the broader context of fortified health systems. A fully operational health system relies on adequate human resources within the pharmacy sector, including personnel dedicated to hospital pharmacy. Coordinated advocacy efforts should emphasize principles that are morally defensible, ethically sound, and legally justifiable, with a primary goal of promoting the health and well-being of communities. Crucially, patient care that is both clinically effective and cost-efficient plays a pivotal role in resource optimization and redirection within the health system.

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Abstract

Online learning presents both concerns and opportunities. Concerns include issues such as the digital divide, where not all students have access to reliable internet or necessary devices. This can exacerbate educational inequalities, leaving some students at a disadvantage. Additionally, there are concerns about the effectiveness of online instruction, as it may lack the interpersonal and hands-on aspects of traditional classroom learning. However, online learning also offers opportunities. It provides flexibility, allowing learners to access educational resources at their own pace and from anywhere. This can be particularly beneficial for working adults or individuals with busy schedules. Technology enables innovative teaching methods, such as interactive simulations and virtual labs, enhancing the learning experience. Online platforms also facilitate global collaboration, connecting students and educators worldwide. Ultimately, addressing concerns like the digital divide and ensuring the quality of online instruction are crucial for maximizing the opportunities presented by online learning. With thoughtful implementation and continuous improvement, online education has the potential to make learning more accessible and inclusive.

Keywords: *Online, Digital, Disparities, Concerns, Opportunities*

I Introduction

Online learning refers to a mode of education that utilizes the internet and digital technologies to deliver instructional content and facilitate interaction between educators and learners. Also known as e-learning, this approach enables individuals to access educational resources and participate in courses remotely, without the constraints of physical classrooms. Online learning encompasses various formats, such as live virtual classrooms, pre-recorded video lectures, interactive simulations, and collaborative online forums. One key feature of online learning is its flexibility, allowing students to learn at their own pace and schedule. This flexibility is particularly advantageous for working professionals, individuals with diverse commitments, or those who prefer a self-directed learning approach.

Online learning platforms often provide a range of multimedia resources, including videos, text-based materials, quizzes, and assessments, enhancing the engagement and comprehension of learners. Moreover, online learning fosters inclusivity by transcending geographical boundaries, enabling students from different locations to access the same educational content. It promotes a globalized approach to education, facilitating cultural exchange and diverse perspectives.

While online learning offers convenience and accessibility, its effectiveness relies on factors such as the quality of content, the design of learning materials, and the level of interactivity. As technology continues to advance, online learning continues to evolve, incorporating innovative tools like virtual reality and artificial intelligence to enhance the overall educational experience.

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Rise of Online Learning In Education

The rise of online learning in education marks a transformative shift in how knowledge is disseminated and acquired. Propelled by technological advancements and the ubiquity of the internet, online learning has become a driving force in modern education, altering traditional paradigms and expanding access to knowledge. One of the key factors contributing to the ascent of online learning is its accessibility. The internet has become a global classroom, breaking down geographical barriers and providing learners with access to a vast array of courses and educational resources. This accessibility is particularly beneficial for individuals who may face constraints in attending traditional educational institutions due to factors such as location, work commitments, or family responsibilities.

Flexibility is another hallmark of the rise of online learning. With the ability to access courses and materials from anywhere with an internet connection, learners can engage with educational content at their own pace and on their own schedule. This flexibility is a game-changer for working professionals seeking to upskill or complete degree programs while juggling career and personal responsibilities.

The COVID-19 pandemic served as a catalyst, accelerating the adoption of online learning.

Educational institutions worldwide had to swiftly pivot to remote and online learning modalities to ensure the continuity of education during lockdowns and social distancing measures.

This crisis-induced shift highlighted the resilience of online learning platforms and underscored their importance in providing continuity during unforeseen disruptions.

Furthermore, the rise of Massive Open Online Courses (MOOCs) and platforms offering a plethora of courses from top universities and experts has democratized education. Learners can choose from a wide range of subjects, often for free or at a fraction of the cost of traditional education. This democratization has empowered learners globally, allowing them to pursue education that aligns with their interests and career goals. As technology continues to advance, the integration of artificial intelligence, virtual reality, and interactive simulations into online learning platforms is likely to enhance the overall learning experience. The rise of online learning represents a paradigm shift in education, ushering in an era of accessibility, flexibility, and personalized learning experiences that cater to the diverse needs of learners in the digital age.

II-Concerns in Online Learning

We highlight here four significant concerns of Online Learning as follows:

1. Access Disparities

Access disparities in online learning have become a significant challenge, exacerbating existing inequalities in education. While online learning offers flexibility and convenience, not all individuals have equal access to the necessary resources.

One prominent factor is the digital divide, reflecting disparities in access to technology and the internet. Students from economically disadvantaged backgrounds may lack reliable internet connections, suitable devices, or the necessary software for effective online participation. This can hinder their ability to engage fully in virtual classrooms, access educational materials, or complete assignments.

Geographical disparities also play a role, with rural areas often experiencing limited internet infrastructure. Students in these regions may face connectivity issues, impeding their access to online courses. Additionally, disparities in digital literacy skills can further marginalize students who are not familiar with navigating online platforms or using digital tools effectively.

Socioeconomic factors contribute significantly to access disparities. Families with lower incomes may struggle to afford the technology required for online learning, putting their children at a disadvantage.

Bridging these access disparities in online learning requires concerted efforts to address infrastructure gaps, provide affordable technology options, and offer digital literacy support to ensure that all students have an equal opportunity to benefit from online education.

2. Digital Literacy Challenges

Digital literacy challenges in online learning present obstacles for students adapting to virtual education. Many learners, particularly those from disadvantaged backgrounds, may lack the necessary skills to navigate digital platforms effectively. Understanding how to use online tools, participate in virtual discussions, and access and submit assignments can be challenging for those with limited prior exposure to digital environments. Furthermore, critical digital literacy skills, such as evaluating online information for credibility and discerning between reliable and unreliable sources, are essential for academic success but can be lacking. The rapid transition to online learning during the COVID-19 pandemic highlighted these challenges, as some students struggled to adapt to the new digital landscape.

Addressing digital literacy challenges requires educational institutions to incorporate digital literacy training into their curricula, providing resources and support to ensure all students can confidently and competently engage with online learning environments.

3. Social Isolation and lack of engagement

Social isolation and a lack of engagement are notable challenges in online learning, impacting the overall educational experience for many students. Unlike traditional classrooms that foster face-to-face interactions, online learning environments may lack the social dynamics that contribute to a sense of community. The absence of physical presence can lead to feelings of isolation among students. The limited opportunities for spontaneous discussions, group activities, and personal interactions with peers and instructors can contribute to a sense of disconnection. Students may miss out on the social aspects of learning, such as collaborative problem-solving, peer support, and the sense of belonging that comes from shared experiences.

Moreover, the digital nature of online learning can contribute to a lack of engagement. Distractions from the online environment, such as social media or other digital platforms, may divert attention from educational content.

Without the immediate accountability of a physical classroom, some students may struggle to stay motivated and engaged, potentially impacting their academic performance.

Addressing these challenges requires intentional efforts to build a sense of community in online learning environments. Incorporating interactive elements, fostering virtual discussions, and providing opportunities for collaborative projects can help mitigate feelings of isolation and enhance engagement, contributing to a more positive and effective online learning experience.

4. Quality of Instruction

The quality of instruction in online learning is a critical factor that directly influences the effectiveness of the educational experience. Several key elements contribute to ensuring high-quality instruction in the online learning environment:

- 1 Clear Learning Objectives: Well-defined learning objectives provide a roadmap for both instructors and students, ensuring that the course content aligns with educational goals.
- 2 Effective Content Delivery: Instructors should utilize diverse and engaging methods to deliver content, such as video lectures, interactive simulations, and multimedia resources, promoting varied learning styles.
- 3 Interactivity and Engagement: Online courses benefit from interactive elements, discussion forums, and collaborative projects that foster student engagement, participation, and a sense of community.

- 4 Timely and Constructive Feedback: Regular and prompt feedback on assignments and assessments is crucial for student progress. Constructive feedback helps learners understand their strengths and areas for improvement.
- 5 Accessible Learning Materials: Ensuring that course materials, including readings, videos, and assessments, are accessible to all students promotes inclusivity and accommodates diverse learning needs.
- 6 Technological Support: Reliable technical support is essential for addressing any issues students may encounter with the online platform, ensuring a smooth learning experience.
- 7 Instructor Presence: Instructors should actively participate in online discussions, provide guidance, and create a supportive online presence, helping students feel connected and motivated.
- 8 Adaptability and Innovation: The online learning environment is dynamic, and instructors should be adaptable, incorporating innovative teaching methods and leveraging technology to enhance the learning experience continually.
- 9 Assessment Integrity: Designing assessments that accurately measure student understanding and skills while preventing plagiarism is crucial for maintaining the integrity of the educational process.
- 10 Professional Development: Instructors benefit from ongoing training and professional development to stay updated on best practices in online education, ensuring they can deliver high-quality instruction effectively.

Ultimately, the quality of instruction in online learning hinges on a holistic approach that considers pedagogical principles, technology integration, and a commitment to fostering a supportive and engaging virtual learning environment. Continuous evaluation and improvement based on student feedback contribute to the ongoing enhancement of online learning experiences.

III- Opportunities in Online Learning

We highlight here some key points under opportunities in Online Learning

Global Access

Online learning presents a unique global access opportunity by transcending geographical boundaries and providing individuals worldwide with access to diverse educational resources. This accessibility democratizes education, offering opportunities for learners in remote areas, developing countries, or regions with limited traditional educational infrastructure.

Through Massive Open Online Courses (MOOCs) and online platforms, people from various cultural and socio-economic backgrounds can engage in learning experiences offered by top institutions globally. This global access opportunity fosters cultural exchange, diversity, and the exchange of knowledge on an unprecedented scale. It enables individuals to acquire new skills, pursue academic goals, and participate in a global learning community. The potential for inclusivity and the democratization of education through online learning contribute to breaking down barriers and creating a more equitable landscape for learners worldwide.

Flexibility of Convenience

The flexibility and convenience offered by online learning are transformative aspects that cater to the diverse needs of learners. Unlike traditional classrooms, online learning allows individuals to access educational content at their own pace and schedule.

This flexibility is particularly beneficial for working professionals, parents, or those with other commitments. Online courses provide the convenience of learning from any location with an internet connection, eliminating the need for physical presence in a classroom. Learners can balance their studies with work, family, or other responsibilities, creating a more personalized and adaptable educational experience. This flexibility accommodates a variety of learning styles and preferences,

empowering individuals to customize their learning journey. Ultimately, the convenience and flexibility of online learning contribute to a more accessible and inclusive educational landscape, breaking down barriers to learning for a diverse range of students.

Diverse Learning Sources

Online learning offers a wealth of diverse learning sources, enriching the educational experience for learners. Unlike traditional classrooms, online platforms provide access to a vast array of resources beyond textbooks. Video lectures, interactive simulations, e-books, podcasts, and discussion forums contribute to a dynamic and multifaceted learning environment.

Massive Open Online Courses (MOOCs) and online platforms collaborate with top institutions and experts worldwide, offering a global perspective and diverse subject matter. Additionally, learners can explore content in various formats, accommodating different learning styles. Virtual field trips, case studies, and real-world applications enhance practical understanding. The flexibility to curate content from diverse sources fosters a holistic learning approach, encouraging critical thinking and exposure to varied perspectives. In this way, online learning promotes a rich tapestry of resources, empowering learners to engage with information in ways that suit their individual preferences and enhance the depth and breadth of their educational journey.

Continuous Skill Development

Online learning facilitates continuous skill development by providing a flexible and accessible platform for individuals to acquire and enhance their abilities throughout their careers. Unlike traditional education models, online courses offer the convenience of updating skills without the need for a full-time commitment to a physical classroom. Continuous skill development in online learning is exemplified through the availability of diverse courses and programs spanning a wide range of subjects.

Professionals can engage in lifelong learning, staying abreast of industry trends and emerging technologies. The modular nature of online courses allows learners to focus on specific skills or pursue comprehensive programs tailored to their career goals.

Moreover, the real-time applicability of online learning enables individuals to immediately practice and integrate newly acquired skills into their professional roles. This iterative process of learning and application enhances retention and practical proficiency. The dynamic nature of the job market, especially in rapidly evolving industries, underscores the importance of continuous skill development. Online learning not only addresses immediate skill gaps but also fosters a mindset of adaptability, preparing individuals for the evolving demands of the workforce. Overall, online learning serves as a catalyst for lifelong learning, empowering individuals to thrive in a constantly changing professional landscape.

IV- Balancing Concerns and Opportunities

We highlight here the key points which create a balance between Concerns and Opportunities in Online teaching-

Enhance Digital Literacy

Enhancing digital literacy in online teaching is crucial for empowering students with the skills needed to navigate and succeed in a digital age. Educators play a pivotal role in fostering digital literacy by integrating specific strategies into their online teaching practices. Firstly, instructors can design courses that explicitly teach digital literacy skills, covering aspects such as internet navigation, information evaluation, and digital communication. Incorporating interactive modules, multimedia resources, and real-world applications can engage students in hands-on learning experiences.

Additionally, educators should model and encourage critical thinking in the digital realm. By guiding students through the process of evaluating online information for reliability and relevance, instructors contribute to the development of discerning digital consumers. Promoting effective communication in virtual environments is essential. Instructors can facilitate online discussions, collaborative projects, and virtual presentations to enhance students' ability to express ideas clearly in a digital context. Furthermore, providing constructive feedback on digital assignments helps students refine their digital literacy skills.

This feedback loop encourages continuous improvement and reinforces good practices in navigating online tools and platforms.

Overall, a holistic approach to online teaching that emphasizes the explicit teaching, modeling, and application of digital literacy skills equips students with the competencies necessary for success in the digital landscape and prepares them for the challenges of the modern, technology-driven world.

Ensuring Quality Assurance

Ensuring quality assurance in online education is imperative to uphold the credibility and effectiveness of virtual learning. Rigorous measures are essential across various dimensions discussed below :

- 1 Accreditation and Standards: Institutions offering online education must adhere to recognized accreditation standards, ensuring that their programs meet established benchmarks of quality and rigor.
- 2 Robust Course Design: Quality assurance begins with well-designed online courses. Clear learning objectives, engaging content, and assessments aligned with educational goals contribute to a positive learning experience.
- 3 Qualified Instructors: Competent and qualified instructors with expertise in both the subject matter and online teaching methodologies are crucial. Professional development opportunities help instructors stay current with best practices.
- 4 Technology Infrastructure: A reliable and secure technology infrastructure, including a user-friendly learning management system (LMS), technical support, and data security measures, is essential for a seamless online learning experience.
- 5 Student Support Services: Adequate support services, such as academic advising and technical assistance, are vital. Timely and responsive support helps students overcome challenges and fosters a positive online learning environment.
- 6 Assessment and Feedback: Regular assessment of student performance, coupled with constructive feedback, ensures that learning objectives are met. Assessment strategies should align with the online format while maintaining academic integrity.
- 7 Continuous Improvement: Ongoing self-assessment, feedback mechanisms, and a commitment to continuous improvement are essential. Regular reviews of course content, technology infrastructure, and teaching methodologies contribute to the evolution and enhancement of online education quality.

By integrating these measures, institutions can establish and maintain high standards of quality in online education, fostering a learning environment that is both credible and effective for students pursuing virtual learning opportunities.

V-Conclusion

Striking a balance for the future of online learning involves harnessing the benefits of technology while addressing its challenges. Institutions must focus on maintaining high educational standards through effective course design, qualified instructors, and robust support systems. Flexibility and accessibility should be balanced with measures to ensure academic rigor and integrity. Ongoing

investment in technological infrastructure, including user-friendly platforms and advanced tools, is crucial. Additionally, fostering a sense of community through interactive elements and peer collaboration can mitigate the potential for social isolation. Continuous evaluation and adaptation to emerging technologies and pedagogical best practices will be key to navigating the evolving landscape of online education, ensuring that it remains a dynamic, inclusive, and high-quality mode of learning for the future.

There is need to emphasize the role of stake holders in addressing concerns and maximizing the opportunities in Online learning. Educational institutions, instructors, policymakers, and technology providers play integral parts. Institutions must invest in faculty training, quality course design, and robust support services to ensure a positive learning experience. Instructors play a critical role in fostering engagement and guiding students through virtual environments. Policymakers must develop regulations that balance innovation with quality assurance, ensuring accessibility and inclusivity. Technology providers need to offer reliable platforms, support infrastructure, and stay abreast of evolving educational needs. Collaboration between these stakeholders can address challenges such as digital inequality, while leveraging opportunities like global access and technological advancements to enhance the quality and effectiveness of online learning for learners worldwide.

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Abstract-

Green technology is the need of the hour as humanity grapples with pressing environmental challenges. The urgency to transition towards sustainable practices is underscored by the escalating threats of climate change, resource depletion, and environmental degradation. Green technology offers a pathway to mitigate these challenges, providing innovative solutions that minimize environmental impact, reduce carbon footprints, and promote the efficient use of resources. In the face of a changing climate and a growing global population, the adoption of green technology is imperative for ensuring the long-term well-being of the planet and its inhabitants. The shift towards renewable energy sources, energy-efficient technologies, and sustainable practices is essential for curbing greenhouse gas emissions, conserving natural resources, and fostering a more resilient and environmentally conscious society. By prioritizing the development and implementation of green technology, we can pave the way for a sustainable future, where economic prosperity, social well-being, and environmental stewardship coexist harmoniously, meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Key words- *Green technology, sustainable development, renewable energy.*

I- Introduction

Green technology, also known as sustainable or environmental technology, refers to the application of innovative and eco-friendly solutions to address environmental challenges and promote sustainability. It encompasses a broad spectrum of practices, processes, and products designed to minimize environmental impact, conserve resources, and reduce carbon footprints. Key aspects of green technology include the use of renewable energy sources, energy efficiency measures, waste reduction through recycling and sustainable practices, and the development of environmentally friendly technologies in various industries. The goal is to create a more sustainable and harmonious relationship between human activities and the natural environment, fostering a greener and healthier planet for present and future generations. The escalating environmental imperatives driving the urgent need for green technology stem from the profound impact of human activities on the planet. Climate change, propelled by excessive greenhouse gas emissions, poses an imminent threat to global ecosystems and weather patterns. The rise in average temperatures, melting polar ice caps, and extreme weather events underscore the critical need for sustainable alternatives to traditional, resource-intensive practices. Resource depletion is another pressing concern, as conventional industries deplete finite natural resources at an unsustainable rate. Deforestation, over-exploitation of minerals, and habitat destruction jeopardize biodiversity and ecological balance. Green technology offers a transformative response to these challenges by providing eco-friendly alternatives that reduce reliance on fossil fuels, promote energy efficiency, and foster the transition to renewable energy sources. It addresses environmental imperatives by mitigating the adverse impacts of industrialization, lowering carbon emissions, and promoting sustainable practices essential for preserving the delicate equilibrium

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of the Earth's ecosystems. As a response to these imperatives, green technology stands as a vital tool in the pursuit of a more sustainable and resilient global environment.

An Overview of Components-Green technology comprises multifaceted components that drive sustainable solutions across diverse sectors. Renewable energy is a cornerstone, encompassing solar, wind, hydro, and geothermal power, fostering a clean energy revolution. Energy efficiency technologies optimize resource consumption, spanning innovations in building design, smart grids, and energy-efficient appliances. Circular economy principles drive waste reduction through recycling, upcycling, and sustainable manufacturing practices, minimizing environmental impact. In transportation, electric vehicles, sustainable fuels, and advancements in public transit contribute to a greener mobility landscape. Sustainable agriculture practices, precision farming, and eco-friendly materials exemplify the application of green technology in the agricultural sector. Urban planning benefits from green infrastructure, energy-efficient buildings, and smart city solutions. Industries utilize cleaner production methods, green manufacturing, and eco-friendly materials. Information technology plays a role through smart systems, data analytics, and environmental monitoring. Biodiversity conservation employs technology for ecosystem monitoring, sustainable forestry, and wildlife conservation. These components collectively address environmental challenges, making green technology applicable across industries, agriculture, urban development, transportation, and various facets of daily life, fostering a comprehensive and integrated approach to sustainability.

II- Renewable Energy Revolution

Renewable energy technologies play a pivotal role in addressing the growing energy demand while mitigating environmental impact. These technologies harness naturally replenishing resources, providing a sustainable alternative to conventional fossil fuels. Here are key renewable energy technologies:

1. Solar Power: Photovoltaic (PV) cells convert sunlight into electricity. Solar panels, often installed on rooftops or solar farms, generate clean energy. Solar thermal systems use sunlight to produce steam, driving turbines for electricity generation.
2. Wind Power: Wind turbines convert kinetic energy from the wind into electricity. As the blades spin, they drive a generator, producing clean and scalable energy. Offshore wind farms capitalize on strong, consistent winds over bodies of water.
3. Hydropower: Harnessing the energy of flowing water, hydropower systems generate electricity. Dams or river turbines capture the water's kinetic energy to turn turbines.
4. Geothermal Power: Geothermal energy taps into the Earth's internal heat. Steam or hot water from reservoirs beneath the Earth's surface is used to generate electricity.
5. Biomass: Biomass energy utilizes organic materials, such as wood, agricultural residues, and municipal solid waste, to produce heat or electricity. Bioenergy, derived from organic materials, can also be converted into biofuels for transportation.
6. Tidal and Wave Energy: Tidal power captures the energy from the rise and fall of tides, while wave energy converts the motion of ocean waves into electricity.
7. Hybrid Systems: Combining multiple renewable sources in hybrid systems enhances reliability and efficiency. For example, solar panels and wind turbines working together in a hybrid system provide continuous power generation.
8. Ocean Thermal Energy Conversion (OTEC): OTEC utilizes temperature differences between warm surface water and cold deep water to produce electricity.
9. Floating Solar Farms: Solar panels installed on bodies of water, such as reservoirs or lakes, create floating solar farms, optimizing land use and reducing evaporation.
10. Concentrated Solar Power (CSP): CSP systems focus sunlight onto a small area to generate high-temperature heat, which is then used to produce electricity through a steam turbine.

Environmental and economic benefits of Renewable energy adoption

The adoption of renewable energy brings about a myriad of environmental and economic benefits, contributing to a more sustainable and resilient energy landscape. We highlight here both of them as follows:

Environmental Benefits: Reduced Greenhouse Gas Emissions: One of the primary environmental advantages of renewable energy is the significant reduction in greenhouse gas emissions. Unlike fossil fuels, renewable sources such as solar, wind, and hydropower generate electricity without releasing harmful pollutants that contribute to climate change.

Air and Water Quality Improvement: By avoiding the combustion of fossil fuels, the adoption of renewable energy helps improve air quality by minimizing the release of pollutants such as sulfur dioxide, nitrogen oxides, and particulate matter. Additionally, renewable energy projects often have lower water usage compared to conventional power plants, addressing concerns related to water scarcity.

Mitigation of Climate Change Impacts: The reduction in carbon dioxide emissions associated with renewable energy adoption contributes to global efforts to mitigate the impacts of climate change. This includes addressing rising temperatures, sea-level rise, and extreme weather events.

Conservation of Biodiversity: Renewable energy technologies, when properly sited and managed, have a lower impact on ecosystems compared to traditional energy sources. This helps protect biodiversity by minimizing habitat disruption and reducing the threat to wildlife.

Economic Benefits: Job Creation: The renewable energy sector has become a significant source of employment. Jobs are created in various stages, including manufacturing, installation, maintenance, and research and development. This fosters economic growth and helps diversify employment opportunities.

Energy Independence: Adopting renewable energy sources reduces dependence on imported fossil fuels, enhancing energy security and independence. This can insulate economies from the volatility of global energy markets.

Cost Competitiveness and Price Stability: Over the years, the cost of renewable energy technologies, particularly solar and wind, has declined significantly, making them increasingly competitive with traditional energy sources. Moreover, renewable energy offers price stability as it is not subject to the volatility of fossil fuel markets.

Infrastructure Development:-Investment in renewable energy infrastructure contributes to the development of a modern and resilient energy grid. This, in turn, enhances the overall reliability and efficiency of the energy system.

III-Energy Efficiency and Conservation

Emphasizing the optimization of energy usage is crucial in the pursuit of sustainability, economic efficiency, and environmental responsibility. This focus on efficiency involves strategic approaches across various sectors, fostering a paradigm shift in the way we generate, distribute, and consume energy given below-

1. Energy-Efficient Technologies: Investing in energy-efficient technologies is paramount. This includes advancements in appliances, lighting, HVAC systems, and industrial processes that maximize output while minimizing energy consumption. Smart technologies, such as programmable thermostats and energy-efficient lighting systems, contribute significantly to optimizing energy use.
2. Building Design and Retrofitting: Designing and retrofitting buildings with energy efficiency in mind is essential. Improved insulation, energy-efficient windows, and smart building management systems contribute to reduced energy demand. Green building standards and certifications guide construction practices toward sustainable and energy-efficient structures.

3. Industrial Process Optimization: Industries can optimize energy usage through process improvements and the integration of energy-efficient technologies. This may involve the adoption of advanced manufacturing techniques, the reuse of waste heat, and the implementation of energy management systems to monitor and control consumption.
4. Transportation Efficiency: The transportation sector is a significant consumer of energy. Promoting energy-efficient vehicles, such as electric cars and hybrids, and investing in public transportation systems can reduce fuel consumption and lower emissions. Additionally, advancements in logistics and transportation management contribute to optimizing energy use in freight and cargo transport.
5. Smart Grids and Energy Storage: Implementing smart grid technologies enhances the efficiency of electricity distribution. Smart grids enable real-time monitoring, demand response, and the integration of renewable energy sources. Energy storage solutions, such as batteries, play a pivotal role in storing excess energy during periods of low demand for use during peak times, further optimizing the grid.
6. Awareness and Behavioral Changes: Raising awareness among consumers and businesses about the importance of energy efficiency is fundamental. Encouraging behavioral changes, such as turning off appliances when not in use, adopting energy-efficient practices, and participating in demand-side management programs, contributes to optimizing energy consumption at the individual and organizational levels.
7. Policy and Regulatory Frameworks: Governments can play a pivotal role by implementing policies and regulatory frameworks that incentivize energy efficiency. This includes setting energy performance standards, offering financial incentives for energy-efficient technologies, and promoting research and development in clean and efficient energy solutions.

IV- Circular Economy-

A circular economy is an economic model designed to minimize waste and make the most of resources by promoting the continuous use, reuse, repair, and recycling of products and materials. It stands in contrast to the traditional linear economy, which follows a "take, make, dispose" approach, leading to resource depletion and environmental degradation. The circular economy aims to create a closed-loop system, where products and materials are kept in use for as long as possible, and at the end of their life cycle, they are regenerated or repurposed.

Key Principles of Circular Economy:

1. Design for Durability and Recyclability: Products are designed with an emphasis on durability, ease of disassembly, and recyclability. This approach extends the lifespan of products and facilitates the extraction and reuse of materials.
2. Extending Product Life: Repair and maintenance are encouraged, promoting the extension of product life. This involves designing products in a way that allows easy repair and upgrading, reducing the frequency of disposal.
3. Reuse and Sharing Models: Emphasis is placed on reusing products or components. Sharing models, such as renting, leasing, or sharing goods, contribute to maximizing the utility of products and reducing the demand for new production.
4. Recycling and Resource Recovery: Recycling plays a pivotal role in a circular economy. Materials recovered from end-of-life products are reused to manufacture new products, reducing the need for virgin resources and minimizing waste.
5. Waste Reduction: Waste generation is minimized through source reduction, efficient resource use, and the adoption of sustainable practices. This involves a shift from a disposable mindset to one that values resource efficiency.

Benefits of Circular Economy: Following are the benefits of Circular economy-

1. Resource Conservation: By extending the life of products and materials, a circular economy conserves valuable resources, mitigating the environmental impact associated with resource extraction and processing.
2. Reduced Environmental Impact: The circular economy reduces pollution, energy consumption, and greenhouse gas emissions by minimizing waste and promoting sustainable practices in the production and consumption of goods.
3. Economic Opportunities: Circular economy practices create economic opportunities by fostering innovation in product design, recycling technologies, and waste management. This results in the creation of new industries and jobs.
4. Resilience to Supply Chain Disruptions: A circular economy promotes localized and decentralized production and consumption, reducing dependence on global supply chains. This enhances resilience to disruptions and contributes to a more stable and sustainable economy.
5. Enhanced Corporate Responsibility: Companies embracing circular economy principles demonstrate a commitment to environmental and social responsibility. This enhances their reputation and appeal to environmentally conscious consumers.

V-Economic and Social Implications of Green Technology

Green technology, with its focus on sustainability and environmental stewardship, brings forth significant economic and social implications that contribute to the broader goals of creating a more resilient and equitable society. We discuss them each as follows-

Economic Implications:

1. Job Creation: The development and deployment of green technologies create a considerable number of jobs across various sectors. Industries related to renewable energy, energy efficiency, sustainable construction, and green manufacturing experience growth, offering employment opportunities and contributing to economic prosperity.
2. Innovation and Technological Advancement: Green technology stimulates innovation by encouraging the development of cleaner and more efficient technologies. This not only addresses environmental challenges but also positions economies at the forefront of technological advancement, fostering competitiveness and attracting investment.
3. Market Growth and Investment Opportunities: The growing demand for green technologies opens up new markets and investment opportunities. Governments, businesses, and investors recognize the potential for economic growth in sectors such as renewable energy, energy storage, and sustainable transportation, driving financial support and capital inflow.
4. Energy Independence and Security: Embracing green technologies, particularly renewable energy sources, reduces dependence on imported fossil fuels. This enhances energy security and independence, insulating economies from geopolitical uncertainties and volatile global energy markets.
5. Cost Savings and Efficiency: Over time, the adoption of green technologies often leads to cost savings. Energy-efficient practices, sustainable resource management, and the use of renewable energy can reduce operational costs for businesses and households, contributing to long-term economic efficiency.

Social Implications:

1. Improved Public Health: The reduction of pollution and emissions associated with green technologies positively impacts public health. Cleaner air and water, as well as a decrease in exposure to harmful pollutants, contribute to the overall well-being of communities, reducing the incidence of respiratory and other health-related issues.

2. Community Resilience: Green technology projects, such as the development of sustainable infrastructure and local renewable energy sources, enhance community resilience. This resilience is crucial in the face of environmental challenges, providing communities with the means to adapt and recover from disruptions.
3. Access to Clean Energy: Green technologies, particularly in the form of decentralized and off-grid renewable energy solutions, can bring electricity to remote or underserved communities. This improves access to essential services, education, and healthcare, fostering social development.
4. Environmental Justice: The adoption of green technologies contributes to environmental justice by reducing the disproportionate environmental burden on marginalized communities. Sustainable practices and renewable energy projects aim to address environmental inequalities and create a more equitable distribution of environmental benefits.
5. Educational Opportunities: The growth of green industries creates opportunities for education and skill development. Training programs and academic initiatives in green technology fields provide individuals with the knowledge and skills needed to participate in the evolving job market.

VI- Barriers and Challenges

Despite the numerous benefits and potential of green technology, several barriers and challenges impede its widespread adoption. Overcoming these hurdles is essential for realizing the full potential of environmentally friendly and sustainable solutions.

1. Cost Factors: The initial costs associated with implementing green technologies, such as solar panels, energy-efficient appliances, and sustainable building materials, can be higher than traditional alternatives. The perceived financial barriers often deter individuals and businesses from making the initial investment, despite the long-term cost savings associated with these technologies.
2. Lack of Awareness and Information: Insufficient awareness and understanding of green technologies can hinder their adoption. Many individuals and businesses may not be aware of the available options, their benefits, or the long-term cost savings associated with green practices. Raising awareness and providing accurate information is crucial for overcoming this challenge.
3. Infrastructure Compatibility: Existing infrastructure may not be compatible with certain green technologies. For example, integrating renewable energy sources like wind or solar power into outdated power grids may require significant modifications. Adapting infrastructure to accommodate green technologies can be a complex and costly process.
4. Regulatory and Policy Barriers: Inconsistent or inadequate policies and regulations can pose barriers to the widespread adoption of green technologies. Clear and supportive regulatory frameworks, including incentives and subsidies, are essential for encouraging businesses and individuals to invest in sustainable practices.
5. Technological Readiness and Accessibility: Some green technologies may still be in the early stages of development or not readily accessible in certain regions. Limited availability and accessibility can hinder adoption, especially in areas with inadequate technological infrastructure.
6. Resistance to Change: Resistance to change, whether from individuals, businesses, or industries accustomed to traditional practices, can impede the adoption of green technologies. Overcoming inertia and fostering a mindset shift toward sustainable practices is a significant challenge.
7. Research and Development Gaps: In certain sectors, there may be gaps in research and development, hindering the progress of green technologies. Investment in research is crucial for the continuous improvement and innovation of sustainable solutions.

8. Economic and Political Influences: Economic interests and political influences tied to conventional industries, such as fossil fuels, can pose barriers to the widespread adoption of green technologies. These vested interests may resist the shift towards sustainable alternatives, slowing down the transition.
9. Limited Investment and Funding: The availability of funding and investment for green technology projects may be limited, especially in emerging economies. Access to financial resources is crucial for the development, deployment, and scaling up of green technologies.

Addressing these barriers and challenges requires a concerted effort from governments, businesses, researchers, and communities. Clear policies, financial incentives, public awareness campaigns, and ongoing research and development are essential components of a comprehensive strategy to overcome these obstacles and accelerate the transition to a more sustainable and green future.

VII- The Path Ahead-

The path ahead for green technology is paved with transformative possibilities, offering a roadmap towards a sustainable and resilient future. Embracing innovative solutions and overcoming existing challenges will be critical in harnessing the full potential of green technology.

1. Technological Advancements: Continued research and development in green technology are paramount. Advancements in materials science, energy storage, and smart systems will enhance the efficiency and affordability of sustainable solutions.
2. Integration of Artificial Intelligence (AI): The integration of AI in green technology can optimize energy consumption, enhance resource management, and improve the efficiency of processes. Smart grids, intelligent building systems, and precision agriculture are areas where AI can drive significant advancements.
3. Circular Economy Practices: The promotion of circular economy practices will gain prominence. Designing products for durability, recyclability, and repairability will become standard, reducing waste and minimizing the environmental impact of manufacturing and consumption.
4. Decentralized Energy Systems: The shift towards decentralized energy systems, including microgrids and community-based renewable energy projects, will empower local communities, increase energy resilience, and reduce dependence on centralized power sources.
5. Green Infrastructure Development: Green infrastructure, such as sustainable transportation, eco-friendly buildings, and green spaces, will be integral in urban planning. Cities will prioritize environmentally conscious designs to improve overall livability and reduce environmental footprints.
6. Electrification of Transportation: The electrification of transportation, including the widespread adoption of electric vehicles, will contribute significantly to reducing emissions and dependence on fossil fuels. Supporting infrastructure, such as charging stations, will be expanded to accommodate this shift.
7. Policy and Regulatory Support: Governments and international bodies will play a crucial role in providing supportive policies, regulations, and incentives. Clear frameworks and financial support will encourage businesses and individuals to invest in green technologies.
8. Public Awareness and Education: Increasing public awareness and education on the benefits of green technology will be essential. Educating communities about sustainable practices, energy conservation, and the environmental impact of their choices will foster a collective commitment to a greener future.
9. Collaboration and Global Cooperation: Collaboration between governments, industries, research institutions, and communities on a global scale will be vital. Sharing knowledge, technologies, and best practices will accelerate progress and ensure a coordinated response to environmental challenges.

As the world faces escalating environmental concerns, the path ahead for green technology is not just a choice but a necessity. By embracing innovation, fostering collaboration, and committing to sustainable practices, the journey toward a greener future holds the promise of addressing climate change, conserving resources, and creating a world that is not only technologically advanced but also environmentally responsible.

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ABSTRACT

‘Greatness is not achieved with violence’ is an African proverb that effectively conveys to people about the idea, that the violence cannot create wonders because it only leads to hurt and defeat. The violent acts in *Chronicle of a Death Foretold*, *Of Love and Other Demons*, *One Hundred Years of Solitude*, and *The Autumn of the Patriarch*, according to this proverb, represent both human suffering and the end of the world. The chosen novels act as a mirror, reflecting people's corrupted minds through evil thoughts, which has a negative vibration that affects their lives and results in suffering. The paper focuses on author's intention in recalling the actual violent events is to raise awareness in them and to plant the seed of virtuous society.

Keywords: Violence, suffering, Honor Killing, Murder.

“Society finds its actual life in literature”

- Vissarion Belinsky

Literature reflects society as much as the lives of individuals. The novel serves as a potent medium to portray the organized style of the specific era. The novels go into greater detail in describing the social, political, cultural, and historical development of the society. Numerous authors from various countries have documented historical events and incidents that occurred in their hometowns. On the other hand, Colombian writers used their literary works to retrace historical incidents, events, and violent crimes that occurred on their territory.

The literary works of Gabriel Garcia Marquez will undoubtedly shine for centuries and a great literary star. In his works, Marquez has skillfully portrayed tradition, culture, violence, and love. Marquez's literary pieces satisfy the readers' curiosity and also provide them with intellectual sustenance to comprehend human emotions and values. Marquez portrays the actual issues and hardships that his people endure.

In his writings, Marquez explores the various aspects of the history of his nation. His native culture's significant trails were destroyed by colonialism, and this is reflected in his works as an identity crisis. Marquez is known for his vast and all-encompassing novels that reveal the tales of numerous characters over an extended length of time. Marquez's novels typically depict a traditional male-dominated society that oppresses women simply for being female.

Not only has mythology and Colombian history influenced Marquez's philosophy, but his magnificent breadth and depth of writing have also been greatly influenced. Many of Marquez's works were set against the backdrop of Colombia's violent past, including the Banana Massacre, the Thousand Days of War, and La Violence, which tore the nation apart. In *Chronicle of a Death Foretold*, *Of Love and Other Demons*, *One Hundred Years of Solitude*, and *The Autumn of the Patriarch*, Marquez addresses the sufferings of his own people.

Marquez's primary goal in writing is to make his people aware of their own vices as well as the reality of vice in their country, a seed planted by the colonists. In addition to illustrating the underlying

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causes of violence, Marquez's works also provide a way to overcome suffering. It is a fact that not everyone is breathing the air of peace, despite how depressing this may seem. The issues surrounding violence are unsolvable. Similar to water, violence surges forward with immense force when it has an outlet.

The topic of violence is one that writers frequently discuss around the world. Many writers use literature as a means of reflecting the crimes that occurred in their own nations and their works delve deeply into everything from individual crimes like rape, murder, and abuse to large-scale acts of violence like war. A lot of writers from the 20th century have written about violence. The authors have made an effort to analyze and expose the prevalence of vice in their own country. Furthermore, a great deal of research is done in academic articles and theses to find a solution to the problems that people everywhere share.

The main stumbling blocks to women's empowerment are the patriarchal society's injustices toward them and the pervasive gender bias. A real, deliberate, and extensive armed conflict between political communities is called a war. It is thus classified as a type of political violence. Colombia has one of the bloodiest histories in the hemisphere; for over two centuries. Marquez discusses the violent acts he saw in his motherland in his literary works.

The novel *Chronicle of a Death Foretold* describes the macho culture that exists. It emphasizes women's subservient status as well as the idea of honor killing done to preserve the family's reputation. Because she had sex before getting married, Angela's mother beats her like an animal. Angela remarks in a depressing manner that, "The only thing I can remember is that she was holding me by the hair with one hand and beating me with the other with such rage that I thought she was going to kill me" (*CDF* 46).

The story began to move away from the domestic abuse and into a different reality. Another incident Garcia Marquez highlights in this book is honor killing, and the novel's opening line provides an example of the aforementioned incident, "ON THE DAY they were going to kill him" (*CDF* 3). The twin brothers publicly declared their intention to assassinate Santiago Nasar before the town, and they waited like butchers to do so, "Before God and before men, Pablo Vicario said. It was a matter of honour ... We're going to kill Santiago Nasar" (*CDF* 52).

Not only does Angela Vicario endure the cruel treatment in the name of honor, but many other women do as well. The twin brothers killed Santiago Nasar in an effort to restore the lost honor, which devastated Angela Vicario's family's honor. Garcia Marquez uses the character of Angela Vicario to paint a striking portrait of the helpless situation of women. Pre-marital sexual relations for women were considered culturally taboo.

The novel's narrator bemoans the superiority of men, which led to Angela Vicario's suffering. Garcia Marquez solidifies the defenseless position of women, who are shackled under patriarchal society, through the character of Angela Vicario. The two male characters that caused Angela Vicario to endure an agonizing life were Santiago Nasar and Bayardo San Roman. All that machismo is a proud feeling of being a man. The macho culture is accepted and even expected by the people in Latin America in order to protect their honor. The negative aspects of machismo include womanizing, emotional thoughtlessness, physical strength, and aggression. Along with the twin brothers abusing their sister physically, Santiago Nasar is also portrayed in the book as a womanizer who ruined Angela Vicario's life.

The tragic demise of an innocent girl who endures suffering and loneliness in the name of exorcism is chronicled in *Of Love and Other Demons*. Terrified, Sierva yelled as the Bishop opened the mass. To quiet Sierva, the Bishop stood up. When Delaura, her lover, visits Sierva in her cell that very night, she is shivering and has a fever. Sierva gave him an explanation of her amazing exorcism experience and told him about, "the deafening choirs that sounded like war, about the demented shouts of the Bishop, about his burning breath, about his beautiful green eyes ablaze with passion" (*OLD* 131).

Sierva's life was filled with excruciating torment for an additional three days. Sierva is waiting and worrying about Delaura's whereabouts all the time. She gave up and came to the conclusion that Delaura would never return. The terrible life and torments of Sierva come to an end., "the warder who came in to prepare her for the sixth session of exorcism found her dead of love in her bed, her eyes radiant and her skin like that of a new-born baby. Strands of hair gushed like bubbles as they grew back on her shaved head" (*OLD* 147).

Men have shaped Sierva's life. Two approaches can be used to analyze this book. First, men have a decision-making role in Sierva's life; second, the Bishop's blind religious belief has condemned her to an eternity in hell. Throughout her life, Sierva has endured various forms of torture without raising any resistance. She isn't disobedient. Her illness sometimes causes her to act rebelliously. Not only was Sierva's body contaminated by a virus, but people's minds were also tainted in the name of religion.

The denial of basic needs to the employees of the banana company, which falls under structural violence, is presented in *One Hundred Years of Solitude* as the primary cause of the banana massacre. The terrible slaughter reveals the colonists' true nature and encodes the novel's emotional core. Garcia Marquez had resurrected the past through his writings. The important topic to be addressed in this book is the denial of fundamental human rights and necessities.

The banana company's violent treatment of its employees caused them to suffer. It gave rise to the strike, "the workers demanded that they not be obliged to cut and load bananas on Sunday" (*OHY* 297). The great strike broke out in Macondo, "Cultivation stopped halfway, the fruit rotted on the trees, and the hundred-twenty-car trains remained on the sidings" (*OHY* 302). Fruit rot is a result of the town's abundance of idle laborers. The workers took their case all the way to the Supreme Court. Not even at the federal level did they receive any assistance. The banana plantation workers demanded a written contract that included the working hours policy. The laborers asked to have the food coupons removed in addition to declaring that they would work eight hours a day, six days a week.

People are waiting at the train station with optimism about their demands. A lieutenant in the army ascended the station's roof during that period, and four machine guns were aimed towards the throng. A panic struck through the station, and people began to flee for their lives. When Jose Arcadio Segundo regains consciousness, he finds himself lying on a train after falling and getting blood all over his face. He feels like his bones are hurting and his head is covered in dried blood. He fell asleep during that period due to the intense pain, and upon awakening, he discovered that he was sleeping next to the deceased. Dead people were bundled together much like a bunch of bananas. As he tries to flee this terrifying scenario, he notices that the train's wooden slats are the source of the light flash. He saw through the wooden slats, "They went through sleeping towns he saw the man corpses, woman corpses, child corpses who would be thrown into the sea like rejected bananas" (*OHY* 307).

The unnamed General's absolute power is reflected in *The Autumn of the Patriarch*. The social, political, and economic exploitation is the main theme of this book. Families, relationships, and communities are all destroyed by violence. The things that lead to violence and the suffering of the victims are discrimination, power, and control. His most heinous traits are expressed in the mass kidnapping of two thousand children, which he carried out to maintain his authority. They discovered that the presidential lottery consistently yields the highest prize, so the kids were abducted. The General has adopted the most brutal strategy to suppress the lottery rumors. He set the lives of two thousand children on the altar as a scapegoat for this.

The country was engulfed in rumors about the mass kidnapping. The General left the doors open for inquiries so as to present him as a perfect man. After questioning everyone about this incident, the League of Nations said good-bye and concluded the case by stating that the rumors are untrue. The fact that the children are still alive made the General's understanding of the drastic formula even more acute,

The children out of their hiding place in the jungle and carry them off in the opposite direction to the provinces of perpetual rain where the animals of the earth rotted away... he ordered them taken

to the Andean grottoes of perpetual mists so that no one would find out where they were... they were shivering with fever because for days and days they had been hidden in rice paddies with mud up to their necks so that the Red Cross airplanes wouldn't discover them. (*AOP* 104)

The General works out his idea by ordering, "to put the children in a barge loaded with cement, take them singing to the limits of the territorial waters blow them up with a dynamite charge" (*AOP* 106). In a technical sense, the General manipulates his people's trust by using the colonizer system. Instead of using overt violence, he kept his people submissive by brainwashing them to believe falsehoods about him. People finally stop remembering the wrongs done to them and start acting along the lines the General has drawn. The General's mindset is similar to that of the colonizers; he gets his way.

Violence is a part of life and has an impact on people in practically every country on the planet. Over a million individuals lose their lives and numerous others sustain non-fatal injuries annually as a result of self-inflicted, interpersonal, or group violence. Humans suffer unimaginably from violence; in fact, some of their suffering is invisible. In addition, terrorism, hunger, war, poverty, and hatred are examples of violent societies. Violence is therefore seen as a life-threatening problem.

Everyone wants to live in peace, but obstacles in life get in the way. People face numerous obstacles in their daily lives as they attempt to live their lives. In today's world, peaceful existence on Earth appears unattainable and unthinkable. People's minds become tainted by evil ideas, and this negative energy affects other people's lives and brings about suffering. Suffering never ends; rather, it only gets worse, which makes it difficult for people to find relief.

In a few of the novels, acts of violence represent both human suffering and the end of the world. The way to stop violence is to establish a society that is stress-free and healthy. A group of people who share a custom or history is called a society. People are capable of displaying love, tenderness, cooperation, and compassion, all of which can serve as the cornerstones of a strong society. However, humans are unable to exhibit this quality, which leads to suffering.

People who live in a healthy society will have leisure time, which maintains their physical, mental, psychological, and spiritual well-being. Humans must dedicate themselves to building societies that improve the standard of living for them. Every single person has an obligation to build this kind of world for the coming generations. An African proverb that says, "Greatness is not achieved with violence," conveys to people the idea that violence never makes wonders; instead, it only leads to hurt and defeat.

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Abstract:

Artificial intelligence (AI) has emerged as a distinct advantage in the field of physiotherapy, influencing each part of the calling from finding and evaluation to treatment arranging and recovery. Physiotherapists play a crucial role in interpreting AI outputs, applying their expertise and clinical judgment to personalize the recommended treatment plans for each patient, eventually prompting work on persistent consideration and restoration results. The integration of artificial intelligence and the Internet of Things (IoT) has introduced another period of far-off persistent observing, changed medical services conveyance, and offered enormous advantages for the two patients and suppliers. This revolutionary technology has a plethora of advantages, paving the way for personalized, effective, and affordable physiotherapy in the future. By embracing the capability of simulated intelligence and cultivating a cooperative climate among people and machines, we can open a future of customized, open, and effective physiotherapy, changing the existences of patients and forming the fate of medical services.

Keywords: Artificial Intelligence, Physiotherapy, Physiotherapist, Robotics, Internet of Things, Medical Services.

Abbreviations: Artificial Intelligence – AI, Internet of Things- IoT, Personal Computer -PC

Introduction

Artificial intelligence is quickly changing different areas, and medical care is no special case. In physiotherapy, where AI has the potential to transform patient care and rehabilitation, its impact is especially significant. This innovation envelops many devices, including AI, normal language handling, PC vision, and advanced mechanics, each offering one-of-a-kind capacities that can be utilized in physiotherapy. Artificial intelligence can upgrade the conclusion and appraisal of information, including patient history, clinical pictures, and sensor information. This works with early identification of likely issues and the improvement of customized treatment plans custom-made to individual requirements and inclinations. Additionally, computer-based intelligence can screen progress and adherence to treatment plans through simulated intelligence-controlled sensors and wearables, giving constant criticism that takes into consideration changes and further developed adherence. Artificial intelligence additionally sparkles in managerial errands, computerizing capabilities like planning arrangements, overseeing patient records, and handling protection claims, saving important time for physiotherapists to zero in on understanding consideration and increment by and large practice proficiency. Moreover, computer-based intelligence-fueled telehealth stages empower remote consideration, overcoming any issues for people in far-off areas or with restricted versatility. While the possible advantages of simulated intelligence in physiotherapy are significant, recognizing its beginning stage inside the field is urgent. Further innovative work is important to completely investigate its true capacity and address moral and well-being worries before far and wide execution. Artificial intelligence holds a massive guarantee to reform the field of physiotherapy by

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working on the quality and proficiency of care, customizing treatment designs, and giving more prominent openness to patients. By embracing this innovation, physiotherapists can essentially upgrade their patients' lives and shape the eventual fate of medical services. (1)

Personalized Treatment Plans

The Role of AI in Personalizing Treatment

Simulated intelligence Fuelled Customized Treatment Plans in Physiotherapy: a revolution driven by data. A paradigm shift in patient care and rehabilitation has occurred as a result of the introduction of artificial intelligence (AI) into healthcare, particularly physiotherapy. Man-made intelligence's capacity to dissect tremendous measures of patient information, as examined in the "Handbook of Exploration on Computerized Reasoning and Delicate Processing Strategies in Customized Medical Care Administrations," is reforming how customized therapy plans are created. Envision this: a physiotherapist presents a patient's clinical history, demonstrative pictures, sensor information, and even video accounts of their developments to a computer-based intelligence calculation. This calculation, prepared on an enormous dataset of comparable cases, uses AI to recognize examples and relationships inside the information. It then investigates these examples to foresee how the patient could answer different treatment choices, at last prescribing a customized plan custom-made to their remarkable requirements and expected results.

This information-driven process offers a few benefits over customary methodologies. The ability of AI algorithms to process data from a variety of sources enables a deeper comprehension of the patient's condition. This empowers physiotherapists to distinguish inconspicuous examples and connections that may be missed by the natural eye, prompting more precise conclusions and designated mediations. Moreover, artificial intelligence can investigate information from past patients with comparative circumstances, utilizing the aggregate information on the clinical field to customize treatment designs further. Additionally, artificial intelligence calculations can persistently refresh and adjust treatment plans as new information opens up. This takes into consideration continuous checking of patient advancement and changes by guaranteeing they stay on target to accomplish their objectives. Throughout the rehabilitation process, this dynamic approach ensures that treatment plans remain relevant and effective. However, the significance of human expertise in conjunction with AI must be acknowledged. Physiotherapists play a crucial role in interpreting AI outputs, applying their expertise and clinical judgment to personalize the recommended treatment plans for each patient. Simulated intelligence ought to in this manner be seen as an incredible asset that supplements and upgrades the capacities of physiotherapists, not as a trade for their skill. The utilization of man-made intelligence for customized treatment plans in physiotherapy is still in its beginning phases, yet its true capacity is evident. We can anticipate even greater advancements in personalized healthcare as AI technology advances and more data becomes accessible. This will at last prompt better quiet results, decreased medical services costs, and a more proficient and compelling medical care framework for all. (2)

Enhanced Patient Engagement and Adherence

Using AI to Improve Patient Engagement

In the field of musculoskeletal rehabilitation, artificial intelligence (AI)-powered virtual physiotherapy platforms are revolutionizing patient engagement. These platforms provide several significant advantages that boost patient motivation and treatment plan adherence, ultimately leading to improved outcomes. Personalized feedback and direction are one of the primary ways AI-powered platforms increase engagement. Man-made intelligence calculations can break down quiet information, including sensor information gathered during workouts, video accounts of development examples, and self-revealed torment levels, to give constant criticism on execution and progress. Patients can track their progress, identify areas that need improvement, and adjust their exercises in response to this individualized feedback. This degree of individual consideration can be exceptionally rousing,

encouraging a feeling of organization and responsibility for the restoration venture. Additionally, AI-powered platforms can empower patients to take an active role in their recovery, which in turn can facilitate self-management. These stages frequently incorporate instructive modules, video showings of activities, and intelligent apparatuses that guide patients through their treatment designs freely. Patients benefit from a greater sense of autonomy and responsibility as a result of this self-management strategy, which also improves engagement and adherence. Computer-based intelligence can likewise improve commitment by advancing gamification and social collaboration. Numerous stages consolidate game-like components, like point frameworks, identifications, and competitor lists, to make recovery captivating and charming. Additionally, some platforms offer features that enable patients to connect with others going through the same rehabilitation process, creating a sense of support and community. Patients can benefit greatly from this social interaction because it gives them a sense of belonging and encourages them to stick to their treatment plans. Accessibility is another way AI-powered platforms boost engagement. These stages can be obtained from a distance, all day, every day, from any gadget with a web association. Patients who are unable to attend traditional in-person physiotherapy sessions because of geographic restrictions, mobility issues, or packed schedules can do so with ease thanks to this accessibility. AI-powered platforms enable patients to take control of their rehabilitation journey and remain engaged in the process by providing convenient and adaptable access to healthcare. (3)

Remote Patient Monitoring

The Role of AI and IoT in Remote Patient Monitoring

The mix of Man-made brainpower (Artificial intelligence) and the Internet of Things (IoT) has introduced another period of far-off persistent observing, changed medical services conveyance, and offered enormous advantages for the two patients and suppliers. The foundations of this paradigm shift are as follows: real-time data collection and analytics powered by AI. IoT gadgets like wearable sensors and shrewd home frameworks persistently gather indispensable signs, active work, and ecological information, giving an ongoing window into a patient's well-being status. Healthcare providers can remotely monitor patients, recognize early signs of health deterioration, and intervene proactively before complications occur thanks to this continuous data stream. Envision a patient encountering a sporadic heartbeat at home. Their wearable sensor gets the oddity and communicates it to the medical care supplier in a split second, considering quick mediation and possibly forestalling a serious well-being occasion. Yet, the force of artificial intelligence lies in its capacity to examine this tremendous information stream. High-level artificial intelligence calculations remove significant bits of knowledge from the information, distinguishing examples and patterns that would be undetectable to the natural eye. This makes it possible to conduct an individualized risk assessment, anticipate potential threats to one's health before they occur, and tailor interventions to each patient's specific requirements. For instance, computer-based intelligence could break down a patient's rest information and movement levels, recognizing designs reminiscent of early Parkinson's sickness. This early discovery empowers opportune mediation, possibly easing back sickness movement and working on long-haul results. Past information examination, computer-based intelligence, and IoT work couple to upgrade medical services direction. AI enables healthcare providers to make well-informed decisions regarding treatment plans, resource allocation, and patient management by integrating patient data with medical knowledge and clinical guidelines. This information-driven approach prompts more viable and proficient medical services conveyance, enhancing assets and guaranteeing patients get the most ideal consideration. Besides, artificial intelligence and IoT enable patients to effectively partake in their medical care ventures. By giving admittance to their well-being information and customized input, patients can settle on informed conclusions about their way of life decisions and deal with their circumstances all the more successfully. This common proprietorship and obligation encourage a feeling of command over their well-being, prompting further developed adherence to treatment plans

and better by and large well-being results. Notwithstanding the obvious advantages, the coordination of artificial intelligence and IoT in distant patient checking faces difficulties. Information protection and security stay vital, requesting vigorous network safety measures and moral information administration rehearses. Guaranteeing interoperability between various gadgets and frameworks is pivotal for consistent information incorporation and investigation, considering a comprehensive perspective on the patient's well-being. To realize the full potential of AI and IoT in remote patient monitoring, it is essential to address these obstacles. Healthcare can move toward a future of personalized, accessible, and efficient care that will benefit both patients and healthcare providers by harnessing these technologies. (4)

Predictive Analytics in Physiotherapy

The Role of AI in Predictive Analytics

The incorporation of man-made reasoning (computer-based intelligence) and prescient examination has reformed physiotherapy by empowering the distinguishing proof of stowed-away patterns and examples inside immense measures of patient information. This strong methodology, as investigated in the logical article "Physiotherapy information examination of enormous information in medical services applications," engages physiotherapists to customize therapy plans, foresee results, and streamline asset portion, eventually prompting work on persistent consideration and restoration results. The training of AI algorithms on a variety of data sources, including patient history, clinical assessments, treatment data, sensor readings, and other data, reveals intricate relationships and patterns that may not be apparent to humans.

Physiotherapists can:

Anticipate treatment results: By breaking down information from comparable cases, artificial intelligence can expect individual patient reactions to various intercessions, empowering the improvement of designated treatment plans with augmented achievement probabilities.

Determine the risk factors: AI can identify patterns that point to potential problems or injuries, making it possible to take preventative and proactive measures to keep patients safe and healthy.

Foster new treatment conventions: Artificial intelligence examines information from enormous patient populations to distinguish compelling treatment procedures, prompting the advancement of improved and proof-based conventions for different outer muscle conditions.

Upgrade asset allotment: Predictions and risk assessments driven by AI make it easier to efficiently allocate resources, ensuring that patients receive the necessary care while maximizing resource utilization. The use of AI-powered predictive analytics in physiotherapy holds tremendous promise, even though it is still in its infancy. As simulated intelligence innovation proceeds to develop and information accessibility builds, we can expect much more noteworthy headways in this field. In the end, this will change how musculoskeletal conditions are diagnosed, treated, and managed, resulting in personalized treatment plans, optimal resource allocation, and improved patient outcomes becoming the norm in physiotherapy. (5)

Robotics and Automation in Physiotherapy

The Role of AI in Robotics and Automation

The assembly of man-made reasoning (artificial intelligence) and advanced mechanics is ready to reform the field of physiotherapy, creating an astonishing future where innovation helps and increases the ability of human advisors. In the scientific article titled "How to Replace a Physiotherapist: man-made brainpower and the Rearrangement of Skill," Computer-based intelligence assumes a vital part in coordinating mechanical technology into physiotherapy, opening additional opportunities for patient consideration and recovery. Robotic-assisted therapy, in which intelligent robots are utilized to provide patients with individualized exercises and feedback, is one key area where

AI shines. These robots can be modified with explicit development examples and work-out schedules, custom-fitted to every patient's remarkable requirements and condition. Artificial intelligence calculations then, at that point, dissect patient execution information and give constant criticism, directing them through practices and guaranteeing legitimate structure and method. This customized approach improves the viability of treatment as well as permits specialists to commit additional opportunities to complex cases and patient cooperation. Computer-based intelligence likewise plays a critical part in decreasing the actual requests of specialists via mechanizing dull undertakings. For instance, robots can be utilized to help patients with moving, moving around, and performing other genuinely requesting exercises. This not only decreases the gamble of wounds for specialists but also permits them to zero in on conveying excellent consideration without actual strain. Besides, computer-based intelligence can improve the exactness and consistency of treatment by giving objective estimations and examinations. Robots outfitted with sensors can track and screen development designs with staggering accuracy, furnishing specialists with point-by-point information to evaluate progress and change treatment designs appropriately. This information-driven approach guarantees that patients get the most potentially compelling treatment. However, there are ethical and practical considerations to be given when incorporating AI and robotics into physiotherapy. Information protection and security concerns should be tended to, and thorough testing and approval are important to guarantee the well-being and viability of automated innovations. In addition, for therapists to successfully adapt to this changing environment, education, and upskilling initiatives must address the possibility of job displacement. Physiotherapy's potential for AI and robotics is undeniable, despite these obstacles. This potent combination has the potential to significantly boost physiotherapy practice efficiency and effectiveness, and lower healthcare costs, and patient care. As innovation keeps on developing, we can expect much more noteworthy headways in this field, making ready for a future where human and machine joint effort changes how we approach restoration and recuperation. (6)

Conclusion

Artificial intelligence has arisen as a distinct advantage in the field of physiotherapy, influencing each part of the calling from finding and evaluation to treatment arranging and recovery. This revolutionary technology has a plethora of advantages, paving the way for personalized, effective, and affordable physiotherapy in the future. Quite possibly the main way simulated intelligence changes physiotherapy is by upgrading determination and appraisal. Overwhelmingly of information, including patient history, clinical pictures, and sensor information, artificial intelligence calculations can give more exact and designated analysis, prompting prior recognizable proof of possible issues. This takes into consideration the improvement of customized treatment plans custom-made to individual requirements, expanding the possibilities of fruitful restoration. Moreover, artificial intelligence engages in the production of customized treatment plans. By dissecting information from comparable cases, computer-based intelligence can foresee individual patient reactions to various intercessions, empowering physiotherapists to configure focused on and powerful treatment plans. This upgrades treatment results as well as focuses on quiet solace and inclinations. Another important area where AI shines is in real-time monitoring and feedback. Physiotherapists can benefit from the valuable data provided by AI-powered sensors and wearables, which can continuously monitor a patient's progress and compliance with treatment plans. This considers continuous changes and customized criticism, guaranteeing ideal results and amplifying the viability of physiotherapy intercessions. Past understanding consideration, computer-based intelligence smoothest out authoritative undertakings, saving significant time for physiotherapists to zero in on persistent communication and care conveyance. Via mechanizing undertakings like planning arrangements, overseeing patient records, and handling protection claims, simulated intelligence lessens regulatory weight, permitting physiotherapists to devote additional significant investment to their patients. Also, artificial intelligence overcomes any issues for people in distant areas or with restricted versatility through

computer-based intelligence-controlled telehealth stages. Remote care is made possible by this technology, making it easier to get physiotherapy services and making healthcare fairer. Computer-based intelligence further changes physiotherapy by working with the prescient examination. By dissecting information from huge patient populations, computer-based intelligence can distinguish examples and patterns reminiscent of possible difficulties or wounds. This empowers proactive intercessions and protection measures, guaranteeing patient security and forestalling issues before they happen. The coordination of mechanical technology into physiotherapy is another intriguing region where man-made intelligence assumes a significant part. Simulated intelligence calculations guide automated helped treatment, furnishing patients with customized activities and constant input. This technology not only makes therapy more effective but also makes it easier for therapists to move around, allowing them to concentrate on difficult cases and patient interactions. AI is extremely promising for the future of physiotherapy, even though it is still in its early stages of development. As computer-based intelligence innovation proceeds to develop and information accessibility builds, we can anticipate considerably more prominent headways in this field. In the end, this will result in improved patient care, decreased healthcare expenses, and a healthcare system that is both more effective and efficient for everyone. Be that as it may, it's vital to recognize the requirement for additional innovative work to completely comprehend the capability of man-made intelligence and address moral and security concerns. Furthermore, human mastery stays fundamental in physiotherapy, with artificial intelligence as a useful asset to upgrade the capacities of specialists. By embracing the capability of simulated intelligence and cultivating a cooperative climate among people and machines, we can open a future of customized, open, and effective physiotherapy, changing the existences of patients and forming the fate of medical services.

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Abstract

Even in the presence of workplace diversity laws, the career opportunities for those with disabilities remain limited than people without disabilities. Many companies have sincere but misleading opinions regarding the ability of those with impairments in the workplace. These unfavourable opinions are frequently exacerbated by related problems that impact each step of the hiring process. The critical challenge of making the workplace inclusive and accessible for workers with disabilities is examined in this book chapter. The chapter offers insights and suggestions to help organisations create fully inclusive workplaces by drawing on empirical data and best practices.

Keywords: *People with Disabilities, Employment Discrimination, Diversity, Inclusion, Workplace Diversity, Employee Engagement, Workplace Inclusivity*

1. Introduction

The need to build workplaces that welcome each person's unique skills and abilities has become more apparent in the modern workplace, as the push for diversity and inclusion has gained traction. A subset of the several categories that need special consideration are workers with impairments. Even though the value of inclusivity has been acknowledged, disabled people still face barriers that prevent them from fully engaging in the workforce. The dynamic nature of modern workplaces means that creating an inclusive atmosphere is no longer just rhetoric; it is now a strategic requirement for businesses looking to succeed over the long term. This introduction establishes the framework for a thorough analysis of the various aspects involved in creating an inclusive workplace. The essential conversation around creating workplaces that are really inclusive and accessible for workers with disabilities—rather than merely diverse—is explored in this book chapter. In addition to being morally required, inclusion is essential to maximising the abilities and viewpoints of people from different backgrounds. It is not just a set of rules to follow; rather, it is a transforming process that increases organisational resilience, ignites creativity, and creates a sense of community. Businesses are becoming more aggressive in their commitment to leveraging the strength found in diversity as they manage the challenges posed by a diverse workforce and quickly changing societal expectations. This is evidenced in the focus on inclusivity. This talk explores the tactical benefits of diversity, ranging from increased worker creativity and engagement to real effects on business operations. Our objective is to make a valuable contribution to the current conversation on workplace inclusivity by providing a thorough manual for businesses looking to promote accessibility, equity, and diversity. This chapter seeks to be a catalyst for good change by examining issues thoughtfully and offering workable solutions. It also promotes workplaces that recognise and value the unique skills of all employees, including those with disabilities. Beyond being a reflection of moral values, inclusive workplaces are

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dynamic ecosystems that foster cooperation, innovation, and flexibility, ultimately advancing companies towards a time when diversity, equity, and inclusion are key success factors.

2. REVIEW OF LITERATURE

- “**The Participation of People with Disabilities in the Workplace Across the Employment Cycle: Employer Concerns and Research Evidence**” by Silvia Bonaccio, Catherine E. Connelly, Ian R. Gellatly, Arif Jetha and Kathleen A. Martin Ginis

Workers with disabilities are one of the largest categories of diverse employees in the workplace. Many have argued that the labour pool of people with disabilities is underutilised due to their high unemployment rate, and that hiring managers will desire to from this pool in order to solve the labour shortfall caused by demographic changes as fewer new workers enter the economy and more baby boomers retire. The concerns that managers have about hiring people with disabilities have been summarised in this paper, and their validity has been examined through an analysis of recent studies in the domains of public health, rehabilitative sciences, industrial/organizational psychology, human resources, and management. Future research could reflect these worries along the job cycle.

- “**Work Inclusion of Persons with Disabilities: Employers’ Perspectives**” by Tengiz verulava, Givi Bedianashvili

Employers' ethical standards or conventional values, which are not governed by social and civil duty or the law, form the basis of the connection between employers and those with disabilities. According to the research, non-adapted elements are mostly responsible for the obstacles that keep disabled persons from obtaining employment. Employers should be aware of the competences and employment perspectives of individuals with disabilities in addition to employment difficulties pertaining to these individuals.

- “**Creating an Inclusive Workplace: The Effectiveness of Diversity Training**” by Steven Royall Vikkie McCarthy and Gloria J. Miller

The purpose of this paper is to give a general summary of how businesses handle diversity training in the workplace and how successful it is at creating a welcoming atmosphere. Despite the established advantages of diversity training, research indicates that opposition to these initiatives may jeopardise initiatives to foster inclusive work environments. The study promotes a modern strategy for creating diversity training programmes and highlights the difference between diversity and inclusion. The study presents a conceptual model for developing an inclusive workplace by referencing theoretical frameworks associated with workplace training, organisational culture, and diversity training research.

- “**Diversity and Inclusion at the Workplace: A Review of Research and Perspectives**” by Nisha Nair Neharika Vohra

The conversation on diversity has shifted to one of inclusion in recent years. Although there is a wealth of research on diversity, the research of inclusion is still very new and because the terms have many different meanings, it is appropriate to review the research on inclusion and diversity to provide a more in-depth comprehension of their corresponding interpretations and terminologies. In an effort to achieve the same goal, this review also looks at the intersections of leadership that embraces inclusivity and diversity and provides guidance for advancing the field of study.

- “**Alternative spaces of ‘work’ and inclusion for disabled people**” by Edward Hall and Robert Wilton

The significance of paid employment as the main means of encouraging social inclusion among disabled people has been emphasised by Western governments. Even while The percentage of disabled

workers employed in the mainstream has gone up over the past few decades, it still remains much lower than that of their non-disabled counterparts. In addition, employees with disabilities struggle with persistent discrimination and a dearth of workplace accommodations. Three possible solutions to the current situation are evaluated closely in this paper. In order to enable disabled workers to influence the character of mainstream work, it first looks at the possibility of strengthening ties between the labour movement and disabled workers. Second, it looks into how more inclusive employment opportunities may be created outside of the traditional mainstream, especially in social economy organisations. The paper concludes by examining the ways in which alternative creative and unpaid work could be useful tools in challenging the prevalent belief that paid employment is the only way to achieve social inclusion.

- **“Inclusive Workplaces: Lessons from Theory and Practice” by Neharika Vohra , Vijayalakshmi Chari , and Harish K Gandhi**

Organisations benefit greatly from having a diverse staff due to India's rich cultural diversity. The effects of globalisation, both locally and globally, have led to a change in the conversation around diversity in Indian businesses. Organisations are starting to realise how important it is to value and celebrate the distinctive qualities of diverse groups in order to boost performance. Notwithstanding scholarly disagreements, variety is generally acknowledged to have both concrete and abstract advantages. Research indicates a favourable association between a diverse workforce and financial performance; for example, Fortune 500 companies having a significant proportion of female executives have seen a 30% increase in return. In addition to reviewing scholarly discussions on diversity and inclusion, this chapter included industry leaders' perspectives on their experiences building inclusive and diverse workplaces.

- **“The Participation of People with Disabilities in the Workplace Across the Employment Cycle: Employer Concerns and Research Evidence” by Silvia Bonaccio, Catherine E. Connelly, Ian R. Gellatly, Arif Jetha & Kathleen A. Martin Ginis**

Compared to their peers without disabilities, people with disabilities still have limited access to employment prospects, even in the face of workplace diversity legislation. Employers frequently have well-meaning but false opinions regarding the capacities of those with disabilities to work, which contributes to unfavourable opinions throughout the hiring process. This essay tackles eleven distinct issues that companies have with workers with disabilities, from the pre-hire phase to the end of the employment contract. We assess every phase of the employment cycle using evidence-based solutions, providing suggestions for businesses committed to creating more productive, fair, and welcoming work environments.

3. Discussion

3.1 Challenges for Person's With Disability

The worldwide issue of high unemployment rates among persons with disabilities (PWDs) remains unresolved. Still, PWD unemployment remains a problem that needs to be addressed, with the goal being to guarantee that PWDs who are motivated and qualified find work and stay in it.

- **A pessimistic outlook:** One of the main barriers to hiring and recruiting people with disabilities (PWDs) is the pervasive prejudice and misconceptions. Stereotypes and biases about people with disabilities (PWDs) frequently result from ignorance of disability. Hiring companies with impairments is impeded by the attitudinal biases of their employees, which stem from a lack of confidence in the skills of those who are disabled to perform their jobs. Despite the fact that most handicap discrimination is not purposeful, employment decisions are greatly impacted by employers' unfavourable opinions. A common misunderstanding held by companies is that

- people with impairments may not possess the abilities or prior experience necessary to perform to expectations, which makes them reluctant to hire them. In actuality, some PWDs' insufficient skills and experience can result from their historical exclusion from social, educational, and training possibilities relative to their non-disabled counterparts.
- **Accommodation and Modes of Transport:** One of the main excuses used by employers for not hiring people with disabilities (PWDs) is the lack of accommodations and transportation for disabled personnel. Furthermore, there is a misperception among companies regarding the expenses associated with implementing disabled-friendly facilities. Smaller businesses often voice this worry since, obviously, they may not devote resources in the same way as larger corporations.
 - **Legal Compliance and Documentation:** Employers face additional difficulties while navigating and adhering to rules and regulations pertaining to disabilities. It can be difficult to modify policies and practices while maintaining legal compliance and inclusivity.
 - **Workplace Culture:** It can be extremely difficult to address workplace cultures that do not support diversity and inclusion. Hiring PWDs is made more difficult by resistance to change or a lack of proactive steps to create an inclusive workplace.
 - **Concerns regarding Productivity:** Due to the necessity of making modifications for employees with disabilities, employers regularly voice concerns about possible disruptions or slower work processes. There is a general concern that reduced productivity could affect the performance of the team as a whole.

3.2 Workplace Inclusivity

An inclusive workplace is essential to a vibrant, dynamic work environment. It seeks to establish a setting where each individual feels appreciated and respected regardless of background or skill level, and empowered—going beyond simple diversity. Diverse viewpoints are not only accepted but also embraced in an inclusive workplace, creating a rich tapestry of concepts and methods. This not only makes work more enjoyable for workers overall, but it also acts as a spark for creativity and invention. The capacity of workplace inclusivity to dismantle boundaries, foster candid communication, and advance teamwork is its real strength. A harmonious synergy is created when people with different experiences and backgrounds join together. This results in increased engagement, better morale, and a shared commitment to the success of the organisation. Essentially, workplace inclusion is a strong driver for developing a workforce that is resilient, adaptable, and high-achieving rather than merely being a regulation.

Studies continually show that workplace inclusion has several advantages. Research shows that companies with inclusive and diverse cultures have a higher long-term retention rate and are better able to draw in top talent. Additionally, inclusive workplaces have better employee engagement levels, which are directly linked to higher levels of output and job satisfaction. Moreover, since they draw from a wider range of viewpoints and ideas, teams that value inclusion and diversity are better able to overcome obstacles and resolve complicated issues. Customer interactions are positively impacted by inclusive practices. Improved customer satisfaction and loyalty result from a workforce that is inclusive and diverse because it can better understand and meet the needs of a wide range of clients.

3.3 Drivers of Inclusion

The perception of inclusion of employees is closely linked to the organisational climate, which is characterised by characteristics like equity and a dedication to diversity. Previous studies suggest that when working in such an environment, staff members are more likely to participate fully, express their ideas, and encounter less harassment and discrimination. A favourable correlation has been seen between the impression of inclusion and elements such as procedural fairness and leader recognition of members' efforts. Improved employee inclusion is also linked to an environment in the workplace

that is marked by open development opportunities, fair hiring and promotion procedures, and clear communication. Fostering inclusion on a human level entails living up to ideals like decency, acceptance, empathy, respect, and active listening. It also entails developing trust, giving people the power to make decisions, and guaranteeing that people have access to information. On the other hand, inclusion is compromised when people cling to simplistic stereotypes, maintaining distinctions instead of actively pursuing integration and eliminating inequalities. It's critical to remember that, in a diverse workplace, it may also be harmful to be unaware of the social identities of others, underscoring the significance of recognising and appreciating varied viewpoints.

3.4 The Role of Leadership Style in Promoting Inclusion

Leaders may foster inclusion by modelling diverse acceptance and commitment via their actions, as well as by providing forums for discussion of differences and, as necessary, modifying the standards of appropriate behaviour. Research has shown that managers who appreciate and actively seek out employee input contribute to the development of high psychological safety work environments. It would be feasible to think of inclusive behaviours and inclusive leadership as precursors to inclusion. Those who actively support diversity and related initiatives, actively look for and appreciate employee contributions, exhibit a collaborative approach to leadership, effectively control dispute, represent merit-based judgement , are culturally competent, and foster a sense of group identity are all considered inclusive leaders.

1. **Role of Compliance in fostering an inclusive workplace:** Compliance plays a critical role in fostering an inclusive workplace by providing a framework that guarantees businesses follow the law and moral standards. In this context, compliance refers to coordinating organisational policies and practices with pertinent diversity, equity, and inclusion laws and regulations. The following important factors demonstrate how important compliance is in promoting inclusivity:
2. **Legal Basis for Inclusivity:** Creating an inclusive workplace requires a strong legal base, which is established by compliance. Organisations guarantee that their policies promote equal opportunities and avoid discriminatory practices by coordinating their actions with anti-discrimination laws and regulations, such as Title VII of the Civil Rights Act and the Americans with Disabilities Act (ADA). This legislative framework acts as a cornerstone for cultivating an inclusive corporate culture that actively combats discriminatory practices.
3. **Creation and Implementation of Inclusive Policies:** Adherence to compliance necessitates the creation and implementation of non-discriminatory policies in organisations. Biased actions based on protected characteristics—such as race, gender, handicap, and others—are expressly forbidden by these policies. Beyond only fulfilling legal requirements, these rules help create a work environment where diversity, equity, and inclusion are valued and where everyone is held to high standards.
4. **Accessibility Standards and Accommodations:** Adhering to accessibility standards guarantees that technology, communication channels, and physical areas are accessible to people with impairments, which strengthens inclusivity. In order to ensure compliance, reasonable adjustments must be made for employees with a variety of needs. These accommodations may include assistive devices or changes to the work environment.
5. **Initiatives for Education and Training:** Compliance-driven diversity and inclusion training programmes play a vital part in teaching staff members and executives about the significance of fostering an inclusive workplace as well as regulatory responsibilities. Beyond what is required by law, these programmes help to create an environment where diversity is valued and courteous interactions among coworkers are encouraged, which raises awareness and understanding.
6. **Creation of Reporting methods:** One of the compliance methods is the creation of a reporting process for cases of harassment or discrimination. Ensuring that events are swiftly addressed through clear reporting mechanisms is crucial for the organisation to uphold its commitment to

- preserving a safe and inclusive work environment. Policies that protect whistleblowers further encourage staff members to voice concerns without worrying about facing consequences.
7. Data Collection for Diversity Metrics: Compliance initiatives often entail gathering and analysing data of diversity-related data to assess the representation of different demographic groups within the organization. By monitoring diversity metrics, organizations can identify areas for improvement, set goals for inclusivity, and track progress over time, ensuring a data-driven approach to fostering an inclusive workplace.
 8. Crafting policies that are inclusive and respond to the variety of demands of those who are disabled: Creating inclusive policies that address the various requirements of people with disabilities is an essential first step towards creating a work environment that respects and supports each and every person. When creating such policies, keep the following points in mind.
 9. Accommodations and Accessibility:
 - Make sure that all venues of communication, including digital and physical ones, are accessible to people with a variety of disabilities.
 - Clearly define the processes for offering appropriate adjustments, such as adapted workstations, flexible scheduling, or assistive technology.
 10. Equal opportunities and non-discrimination:
 - Declare unequivocally that you will not discriminate against or deny people with disabilities the same chances in the workplace.
 - Make ensuring that hiring, promotions, and other employment choices are made in accordance with the organization's clear policy against disability discrimination.
 11. Adaptable Workplace Guidelines:
 - Put in place flexible work practices that consider the various needs and preferences of employees with disabilities. This could involve job-sharing plans, remote work choices, and flexible work schedules.
 12. Programmes for Education and Awareness:
 - Create and implement training initiatives to increase employee awareness of disability-related issues and promote an inclusive and understanding work environment.
 - Add modules about breaking stereotypes, fostering an inclusive and respectful work environment, and communicating with coworkers who have impairments.
 13. Accessibility of Communication:
 - Make sure that everyone, including those with varying communication needs, can access all internal and external communications. Information available in multiple formats, including big print, braille, and digital formats, may need to be provided in order to accomplish this.

4. CONCLUSION

As we come to the end of our investigation into "Making Workplace an Inclusive and Accessible Place for Disabled Employees," it is clear that organisations stand to gain strategically from fostering an atmosphere that truly values accessibility and diversity in addition to moral obligation. We're going over a number of important subjects, each of which illuminates a distinct aspect of this life-changing experience. The importance of understanding and appreciating the distinct abilities and perspectives that employees with disabilities bring to the job was underlined throughout the conversation on the confluence of employee and disability. It is evident that disability ought to be seen as a diversity feature that adds to the organisational fabric rather than as a barrier. As we've looked at the difficulties that people with disabilities encounter, we've found that there are hurdles on many fronts, ranging from societal perceptions to physical infrastructure. A comprehensive strategy including organisational commitment, cultural changes, and proactive steps to address accessibility issues is needed to overcome these obstacles. The issue of workplace inclusivity surfaced, highlighting the importance of

creating atmospheres where all workers are made to feel supported, appreciated, and welcomed. We explored the factors that contribute to inclusion, focusing on how communication, organisational culture, and leadership all play a part in giving workers with disabilities a feeling of community.

It was recognised that promoting compliance was essential to creating an inclusive workplace. Although compliance offers a structure, the chapter emphasised the significance of going beyond simple conformance to rules. Beyond the bare minimum, true inclusiveness entails a sincere dedication to diversity and accessibility. It is crucial to create policies that are inclusive, sensitive to the varied needs of individuals with disabilities, and comply. The importance of having rules that are adaptable, open, and actively work to accommodate a range of talents has been emphasised throughout this chapter, creating an atmosphere where everyone can give their all. In summary, creating a welcoming and easily accessible workplace for workers with impairments is a continual process that necessitates cooperation, comprehension, and constant development. Through the acceptance of variety, resolution of issues, and proactive pursuit of inclusivity, organisations can provide settings that enable every person, irrespective of their capabilities, to prosper and make significant contributions to the professional arena.

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Abstract

With the rapid increase of urbanisation worldwide, there is a pressing need for creative and environmentally-friendly approaches to urban administration. This study explores the significant impact of smart technologies in developing comprehensive urban management methods to tackle the intricate difficulties that modern cities encounter. Cities may greatly improve efficiency, sustainability, and people's quality of life by utilising the potential of Internet of Things (IoT), data analytics, and artificial intelligence.

The study investigates the role of intelligent technologies in the development of interconnected urban ecosystems, where decision-making processes in different sectors are guided by data-driven insights. The use of intelligent technologies enables a comprehensive and adaptable approach to urban governance, encompassing areas such as transportation, energy management, public safety, and healthcare. Gaining insight into the intricacies of these technologies within various urban environments is essential for maximising their influence and guaranteeing comprehensive progress.

Moreover, the study examines the socio-economic consequences of intelligent urban administration, taking into account factors such as fairness, availability, and involvement of the community. This study examines the ways in which these technologies can reduce the gap between those who have access to digital resources and those who do not, and enable residents to actively engage in determining the future of their communities. The study also investigates other obstacles, such as issues regarding the privacy of data and the ethical ramifications of implementing sophisticated technologies in urban settings.

This research endeavours to furnish practical insights and suggestions for city planners, policymakers, and stakeholders by performing case studies in various urban environments. The objective is to promote the integration of intelligent technologies in a manner that corresponds to the distinctive attributes and difficulties of each city, thereby aiding in the development of resilient, sustainable, and human-focused urban environments.

Keywords: technologies, smart cities, urban management

1. Introduction

Smart technologies are crucial in developing comprehensive urban management plans by fundamentally transforming the functioning of cities, addressing difficulties, and improving the overall quality of life for citizens. The core of this transition lies in the smooth incorporation of diverse technologies, including the Internet of Things (IoT), data analytics, and artificial intelligence (AI).

IoT enables the creation of networked urban environments, where devices and systems gather and exchange real-time data. This data provides a fundamental basis for making well-informed

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decisions in several industries such as transportation, energy, public safety, and healthcare. Intelligent traffic management systems, for example, optimise the flow of traffic, while smart grids improve the efficiency of energy distribution.

Data analytics retrieves significant insights from the extensive datasets produced by urban activities. This analytical ability assists in forecasting patterns, optimising the distribution of resources, and pinpointing areas that require enhancement. AI enhances decision-making processes by analysing intricate data patterns, hence improving the effectiveness of urban management systems.

Integrated urban management utilises this technology in a collaborative manner, eliminating the barriers that traditionally isolated different sectors. Transportation solutions influence energy consumption, public safety programmes integrate healthcare data, and socio-economic factors shape fair urban development.

The outcome is a metropolis that flexibly adjusts and reacts to its ever-changing requirements. Smart technologies enable urban planners and politicians to develop comprehensive and future-oriented policies, ranging from optimising traffic patterns to improving public safety and sustainability. By adopting this integrated strategy, not only will efficiency be enhanced, but it will also contribute to the development of resilient, sustainable, and people-centric urban settings, thereby influencing the cities of the future.

Background of the study

With the world experiencing an unprecedented level of urbanisation, cities are undergoing significant changes that present both opportunities and challenges. The inevitable transition towards urbanisation has significant ramifications for the functioning of societies and necessitates novel strategies for urban governance.

An examination of the patterns and changes of urbanisation

Urbanisation has emerged as a prominent worldwide phenomenon in recent decades, with a substantial proportion of the global population currently living in metropolitan regions. The phenomenon of widespread migration to urban areas results in a multitude of transformations, ranging from amplified economic prospects to escalated environmental apprehensions. Gaining insight into the intricacies of urbanisation is essential for formulating strategies that effectively leverage its advantages while addressing its inherent difficulties.

Challenges Encountered by Modern Urban Areas

Modern cities face complex and diverse issues, including strained infrastructure, environmental decline, and socio-economic inequalities. The rapid growth of cities worsens these problems, placing significant strain on conventional urban management systems. To tackle these issues, it is necessary to develop inventive and flexible solutions that can effectively negotiate the intricacies of contemporary urban life.

The Importance of Creative Approaches to Urban Management

Given the changing nature of urban concerns, there is an increasing acknowledgment of the necessity for inventive approaches to urban administration. City governance is undergoing transformation to adapt to the dynamic character of urbanisation. This transition requires a thorough and forward-looking strategy to develop solutions that are not only efficient in the current situation but also able to withstand future uncertainties.

Objectives of the Study

This study aims to investigate and comprehend the impact of intelligent technologies in influencing the future of urban management. The project seeks to explore the convergence of

technology, governance, and urban development in order to determine how these cutting-edge instruments may be utilised to tackle the issues presented by modern urbanisation.

Significance of Smart Technologies in Urban Management

Smart technologies, including the Internet of Things (IoT), data analytics, and artificial intelligence, have become essential components in urban administration. Their capacity to collect data in real-time, enable well-informed decision-making, and enhance the allocation of resources makes them crucial in the development of more efficient, sustainable, and livable cities.

2. Review of literature

Chronological development of urban management

The development of urban management is intricately connected to the expansion of cities over time. Throughout history, the administration of metropolitan areas has adapted to societal shifts and technical progress, spanning from ancient civilizations to the present. Mumford (1961) and Hall (1998) conducted historical studies that offer valuable insights into the evolution of urban management structures and practices.

Utilisation of Intelligent Technologies in Urban Governance

The intersection of technology and urban governance has led to the emergence of the notion of smart cities. According to Caragliu, Del Bo, and Nijkamp (2009), smart cities are characterised by the use of sophisticated technology to improve performance, well-being, and cost reduction. The convergence of information technology and urban governance has facilitated revolutionary alterations in the management and perception of cities.

Applications of the Internet of Things (IoT)

The Internet of Things (IoT) is crucial in the development of smart cities as it facilitates the connection and data sharing between devices and systems. The study conducted by Gubbi et al. (2013) emphasises the capacity of the Internet of Things (IoT) to develop intelligent urban settings, optimise resource allocation, and improve the performance of transportation, energy, and public safety services.

Urban Insights Data Analytics

Data analytics can be applied in urban environments to derive significant insights from extensive information. Batty (2013) highlights the significance of data analytics in comprehending urban dynamics, forecasting trends, and optimising city design. The use of data to inform decision-making has become a fundamental aspect of efficient urban administration, providing a more detailed comprehension of intricate urban processes.

The role of Artificial Intelligence in the process of making decisions.

Artificial Intelligence (AI) has become a potent tool for decision-making in urban government. In his article, Cugurullo (2018) explores the potential of artificial intelligence (AI) in enhancing many urban processes such as traffic management, energy consumption, and emergency response. AI algorithms provide the capability to analyse extensive datasets, allowing for more knowledgeable and adaptable decision-making in ever-changing urban settings.

Approaches for managing urban areas in a comprehensive and coordinated manner.

The transition towards integrated urban management approaches acknowledges the interdependence of different urban systems. The literature authored by Nam and Pardo (2011) emphasises the significance of dismantling isolated divisions and embracing a comprehensive

viewpoint in urban management. Integrated approaches entail cooperative endeavours spanning many sectors, utilising technology to improve coordination and effectiveness.

Issues and possibilities in intelligent urban administration

Although smart technologies present significant opportunities, they also present difficulties. Deakin and Al Waer (2011) examine topics like data privacy, security problems, and the digital divide. Ensuring the successful application of smart urban management techniques requires balancing possibilities with ethical issues and prioritising inclusivity.

3. Research methodology

The research design utilised in this study is a qualitative technique that integrates aspects of exploratory and descriptive research. This design facilitates a comprehensive investigation into the function of intelligent technologies in urban administration, with a specific emphasis on practical implementations and firsthand encounters in various urban environments.

Utilisation of the case study approach: The study use a case study methodology to gain a contextualised comprehension of the implementation and utilisation of smart technology in various urban settings. Multiple case studies enable the analysis of many aspects that impact the efficacy of smart city efforts.

Criteria for selecting urban settings

Urban settings are chosen based on particular criteria to guarantee a wide range of characteristics and their relevance to the study. The criteria encompass the existence of well-established smart city initiatives, diverse scales of urban growth, and geographical variety. The objective of this method is to encompass a wide range of experiences and difficulties related to intelligent urban management.

Methods for Collecting Data

Conversations with urban planners and government officials

Key stakeholders involved in the execution of smart city programmes, such as city planners, authorities, and decision-makers, are interviewed in detail. The purpose of these interviews is to collect information about the thought processes involved in making decisions, the difficulties encountered, and the perceived effects of intelligent technology on urban management. The usage of a semi-structured interview method enables adaptability and the investigation of emerging themes.

4. Integrated Insights: Smart Technologies in Urban Governance

Smart technologies are playing a significant role in shaping urban governance, leading to integrated insights. The incorporation of smart technologies has brought about a significant revolution in the evolution of urban management. These technologies have become catalysts for generating responsive, efficient, and inclusive urban settings by revolutionising transportation, fostering sustainability, and boosting public safety.

Intelligent technologies in the field of transport management: A significant change in the way people move

Smart technologies are crucial in the complex network of urban transport, as they redefine the notion of effective and environmentally-friendly mobility. A notable instance can be observed in the central area of Singapore, where a sophisticated traffic management system has transformed the movement of people and vehicles inside the city. The use of real-time data analytics and adaptive signal management has considerably mitigated traffic congestion, serving as a paradigm for other cities contending with transportation difficulties. The transformative impact goes beyond reducing

congestion to optimising traffic patterns, resulting in a seamless and responsive transport network that distinguishes Singapore as a model of intelligent urban mobility.

Copenhagen's Sustainable Energy Ecosystem: A Case Study in Energy Management and Sustainability

The implementation of intelligent technology has brought about a significant change in the way energy is managed in metropolitan areas, and Copenhagen serves as a prime example of this remarkable shift. By deploying a smart energy system, the city effectively incorporates renewable energy sources and enhances energy distribution through continuous monitoring. This innovation not only decreases reliance on finite resources but also positions Copenhagen as a frontrunner in establishing a sustainable and robust energy ecology. The case study of Copenhagen exemplifies how technology may be utilised to mould the future of energy management in urban settings.

New York City's proactive approach to enhancing public safety and healthcare.

The primary concerns of urban safety and healthcare can be effectively addressed through the incorporation of intelligent technologies. New York City's implementation of intelligent monitoring and emergency response technologies demonstrates a proactive strategy to improve public safety. The city is able to quickly respond to crises and improve the healthcare infrastructure by using real-time monitoring and predictive analytics. The case study highlights the significant impact of intelligent technology in developing cities that prioritise the welfare and security of its inhabitants.

Implications of Barcelona's Digital Inclusion Initiative on the socio-economic landscape

The incorporation of intelligent technologies into municipal governance has extensive socio-economic consequences. This section examines the fair allocation of advantages, involvement of the community through technology, and tackles obstacles associated with the digital divide.

Barcelona's digital inclusion plan is an innovative endeavour that aims to tackle socio-economic inequalities. The city's objective is to narrow the digital divide by granting technology access to marginalised people. The case study highlights the significance of community involvement in intelligent urban projects, demonstrating how technology can serve as a potent instrument for promoting inclusiveness and mitigating inequalities in resource accessibility.

Amsterdam's Ethical AI Framework: Addressing Challenges and Ethical Considerations

Although smart technologies have great potential, their implementation in urban administration poses problems and ethical considerations. This section delves into the intricacies linked to intelligent urban management, ranging from problems regarding data privacy to the ethical utilisation of artificial intelligence.

Amsterdam's proactive implementation of an ethical AI framework highlights the city's dedication to tackling issues related to smart technologies. The case study offers concrete illustrations of effectively managing data privacy concerns and guaranteeing the appropriate implementation of AI. Examination of legal frameworks and community responses demonstrates how cities might traverse the complexities of smart urban management in an ethical manner.

To summarise, the comprehensive understanding of intelligent technology in urban governance represents a fundamental change in the management and perception of cities. The case studies offer both tangible instances of successful implementations and insightful guidance for urban planners and policymakers endeavouring to establish intelligent, sustainable, and inclusive cities. As technology advances, these observations provide guidance for cities to handle the challenges of urban management in a more interconnected and digitalized world.

5. Recommendations for Urban Planners and Policymakers

Smart technology implementation guidelines

Strategic Planning: Urban planners must formulate all-encompassing strategies that strategically incorporate intelligent technologies. This entails identifying crucial sectors such as transportation, energy, public safety, and healthcare, and delineating precise objectives for each of them.

Data Governance Framework: Implement rigorous data governance frameworks to guarantee the appropriate and ethical utilisation of data. This encompasses explicit directives about the acquisition, retention, confidentiality, and dissemination of data, thereby cultivating confidence among individuals and interested parties.

Public Engagement: Give priority to include the public at all stages of planning and implementation. Well-informed individuals play a crucial role in the success of intelligent urban projects, and their feedback can significantly influence the development of more efficient and inclusive solutions.

Equal and fair opportunities : Striking a balance between fostering innovation and upholding social and environmental responsibility. Promote equitable access by ensuring that all sectors of the population have equal and fair opportunities to benefit from smart technologies. Enact measures to tackle the digital divide and foster equitable access to technological progress.

Environmental effect Assessment: Prior to deploying new technology, it is imperative to conduct comprehensive environmental effect assessments. Aim for ideas that not only improve efficiency but also reduce ecological impact and contribute to overall sustainability.

Methods of Cooperation for Long-lasting Urban Development

- **Interdisciplinary Cooperation:** Promote collaboration among diverse sectors, encompassing public, corporate, and non-profit entities. Collaborative endeavours can result in novel solutions that capitalise on the unique capabilities of each industry.
- Facilitate the creation of platforms to foster the exchange of knowledge and the dissemination of best practices across cities. Global collaboration allows urban planners to acquire knowledge from successful implementations and modify established solutions to suit their specific local circumstances.
- Establish collaborations with neighbouring communities to collaboratively develop and oversee intelligent urban initiatives. Involving communities in the decision-making process guarantees that initiatives are in line with their requirements and ambitions.

6. Conclusion

Deploying intelligent technology in urban settings necessitates a methodical and conscientious approach. These ideas offer a structure for urban planners and politicians to steer the incorporation of intelligent technology, while simultaneously considering the balance between innovation and social and environmental accountability. The implementation of collaborative and inclusive strategies can significantly contribute to the sustainable development of cities that are smarter and more resilient. This study revealed significant insights in different sectors while analysing the complex role of smart technologies in urban administration. The case studies presented concrete instances of how these technologies significantly influence urban environments, encompassing areas such as transportation management, energy sustainability, public safety, socio-economic factors, and ethical dilemmas.

The findings make a substantial contribution to the area of urban studies by providing a thorough comprehension of how smart technologies influence modern cities. The incorporation of knowledge from several case studies showcases the adaptability and influence of these technologies on urban transportation, environmental friendliness, security, and socio-economic factors.

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Abstract

Human resource management is the process of managing the manpower in the organisation. It is procedure for coordinating the human resources and organisational goals. Any organisations success is based on his effective human resources. The principal of Human resource management is to set the organisational goal and to bring people together in the organisation. With the technological development and economic, social and psychological change the structure of the human resource management also changed. The traditional approach of human resource management has been changed to modern trends as previously the HR Manager was only concentrated towards recruitment but today human resource management has larger approach as planner as well as change agent. Modern trends of Human resource management recommend more results from human resources in organisation by making the HR function more strategic and efficient. The purpose of this chapter is to highlight the development of HRM and identify recent trends and challenges of human resource management.

Key words: Human resource management, recent trends, challenges

Introduction

Organisation consists of the combination of different resources, among which human resource is the superior. Human Resource Management (HRM) is a strategic approach that focuses on managing an organization's most valuable asset: its people. It involves the planning, recruitment, selection, training, development, compensation, and retention of employees to achieve the organization's goals effectively and efficiently.

Obviously, human resource management is concerned with people's dimension in organisations. It is process of bringing people and organisations together so that the goals of each are met. This is too simple statement and fails to capture the essence of HRM. Basically, the crucial point of HRM is people; people are the lifeblood of organisation. Without them there is no need for computer system, compensation plans, mission statements, programs, strategic planning or procedures. Because HRM activities involve people, the activities must be finely tuned, properly implemented and continuously monitored to achieve desired outcomes. HRM aims to create a positive work environment, foster employee engagement, handle conflicts, and ensure compliance with labor laws and regulations. It plays a pivotal role in aligning human capital with organizational objectives while nurturing a supportive and productive workplace culture.

Development of HRM

The Human Resource Management has to be used with increasing regularity as description of the management of employees. In spite of rapid and extensive acceptance of HRM theories but there is significant controversy for its background, its wide spread use in modern business and its philosophy. Prior to the twentieth century, there were unorganised and sporadic efforts at improving the management of people at work. Many times, in private industries specialised employee position was created for hiring, training and safety and health matters. Post industrial revolution there was a great

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requirement for the planning, recruitment, selection and placement. The concept of ‘the right man in right job’ got the momentum during this period only.

It was during this same period that one of the most important movements in management was taking place i. e. scientific management. Taylor, as industrial engineer, advocated separate responsibilities for workers and management. Utilising time studies toward the scientific determination of a proper job design, Taylor proposed methods and standards for performing each job for training and supervision employees in the proper use of tools and equipment and for evaluation each workers performance.

After World War II managing employees became the most concerning matter for every organisation. Realisation that workers were human beings, not just mere pieces of equipment promoted the humanism movement. Emphasis was given to those employees exclusively on those decisions which directly affected them. Attention was focused on reducing or eliminating the boredom, fatigue and stress that many behavioural scientists believed were primarily caused of worker alienation and reduced job productivity. It was felt that organisational objectives could not be achieved until and unless employees were satisfied and motivated towards work. During this period only most of the data related to motivation and reward system came in HRM concept. Up to 1970 the management of employees was called personnel management. There was a great movement. The narrow concept of personnel management changed into the broader appreciation that the human resource management is the accountability of every manager who is working in the organisation. The opinion that all the managers in an organisation must be familiar with human resource management concept in the same way that they should understand marketing and accounting concepts was widely accepted. Presently, human resource management has grown and got vital importance in the business organisation.

The scope of Human Resource Management (HRM) encompasses various functions and activities within an organization. Some key components of HRM's scope include:

HR Planning: Forecasting personnel needs, setting objectives, and planning strategies to meet organizational goals through effective workforce utilization.

Recruitment and Selection: Attracting, sourcing, assessing, and hiring the right talent for specific job roles within the organization.

Training and Development: Identifying employee skill gaps, designing training programs, and fostering professional growth to enhance individual and organizational performance.

Performance Management: Establishing performance standards, evaluating employee performance, providing feedback, and implementing measures for improvement.

Compensation and Benefits: Designing competitive salary structures, incentives, and benefit packages to attract and retain top talent while ensuring fairness and compliance.

Employee Relations: Managing relationships between employees and the organization, handling grievances, conflicts, and promoting a healthy work environment.

HR Information Systems (HRIS): Implementing technology for managing HR-related information, such as payroll, employee records, and performance metrics.

Legal Compliance: Ensuring adherence to labour laws, regulations, and workplace policies to mitigate legal risks and maintain ethical standards.

Organizational Development: Facilitating change initiatives, promoting diversity and inclusion, and fostering a positive organizational culture aligned with the company's values and goals.

Global HRM: Managing HR practices and strategies across international boundaries, considering cultural differences, legal requirements, and global business dynamics.

The scope of HRM continues to evolve, adapting to changing workplace dynamics, technological advancements, and socio-economic factors, all while emphasizing the strategic role of human capital in organizational success.

Challenges in HRM

Human Resource Management (HRM) faces numerous challenges in today's dynamic and competitive business environment. Some of the key challenges include:

Talent Acquisition: Finding and attracting skilled and qualified individuals amid a competitive job market and talent shortages can be challenging. Recruiting the right talent that fits the organization's culture and needs is crucial.

Employee Retention: Retaining top talent is a significant challenge, especially in industries where turnover rates are high. Creating an engaging work environment, offering growth opportunities, and competitive compensation and benefits are essential to retain skilled employees.

Workforce Diversity: Managing a diverse workforce with varying backgrounds, experiences, and perspectives requires strategies to promote inclusivity, equity, and respect within the workplace.

Technological Advancements: Embracing and adapting to rapidly evolving technology impacts HR practices. Integration of HRIS, AI, and automation in HR processes requires upskilling HR professionals and ensuring the technology complements human-centric approaches.

Workplace Culture and Engagement: Fostering a positive work culture, maintaining high employee morale, and ensuring engagement amid remote work setups or hybrid models poses a challenge. Building a sense of belonging and connection within the workforce is crucial.

Performance Management: Developing effective performance evaluation methods that accurately assess employee contributions, align with organizational goals, and provide meaningful feedback for growth is a challenge for HR professionals.

Compliance and Legal Issues: Staying updated with ever-changing labor laws, regulations, and ensuring compliance at local, national, and international levels can be demanding, especially in multinational corporations.

Globalization: Managing HR practices across diverse geographical locations, each with its cultural norms, legal frameworks, and business practices, presents challenges in standardizing HR policies and practices globally.

Work-Life Balance: Balancing work demands with employees' personal lives, especially in the age of remote work, is a challenge. HR needs to address burnout, mental health issues, and maintain productivity while supporting employees' well-being.

Skills Gap and Training: Identifying skill gaps, providing relevant training and development programs to upskill employees, and adapting to changing skill requirements in the workplace is a continuous challenge for HRM.

Addressing these challenges requires HR professionals to adopt innovative approaches, leverage technology, focus on employee well-being, and continually adapt HR strategies to meet the evolving needs of the workforce and the organization.

Recent trends in HRM

Several recent trends have been shaping Human Resource Management (HRM) practices to adapt to the changing dynamics of the modern workforce. Some notable trends include:

Remote Work and Hybrid Work Models: The shift towards remote work, accelerated by the COVID-19 pandemic, has led to the adoption of flexible work arrangements and hybrid work models. HRM now focuses on policies, technologies, and strategies to support remote and in-office employees effectively.

Focus on Employee Well-being: There's an increased emphasis on holistic employee well-being, including mental health support, stress management programs, work-life balance initiatives, and wellness benefits to ensure a healthier and more productive workforce.

Diversity, Equity, and Inclusion (DEI): Organizations are prioritizing diversity, equity, and inclusion initiatives to create more inclusive workplaces. HRM plays a pivotal role in implementing policies and programs that promote diversity, address biases, and foster an inclusive culture.

AI and People Analytics: Utilizing AI, machine learning, and advanced analytics tools in HRM has become prevalent. These technologies help in recruitment processes, predictive analytics for employee performance, and decision-making regarding workforce planning.

Agile HR Practices: Agile methodologies, borrowed from software development, are being applied to HRM. This approach enables HR teams to respond quickly to changing business needs, be more flexible in their processes, and enhance collaboration across departments.

Continuous Learning and Development: With rapid technological advancements and evolving skill requirements, HRM focuses on continuous learning initiatives. Personalized learning paths, upskilling, and reskilling programs are increasingly important to keep employees competitive and adaptable.

Employee Experience (EX): Creating a positive and meaningful employee experience throughout their journey in the organization is gaining attention. HRM concentrates on enhancing the overall employee experience by improving engagement, interactions, and workplace culture.

Environmental, Social, and Governance (ESG) Initiatives: Companies are integrating ESG factors into their HRM strategies. HR professionals are involved in sustainability efforts, social responsibility programs, and ethical governance practices, aligning with broader organizational goals.

Flexible Benefits and Total Rewards: HRM is shifting towards offering more flexible and personalized benefits packages, including healthcare, retirement plans, and other perks, to meet the diverse needs of employees.

Skills-Based Hiring: Focusing on candidates' skills rather than traditional qualifications or degrees is becoming more prevalent. HRM is increasingly leveraging skill assessments and competency-based hiring to identify the best talent.

These trends highlight HRM's evolution towards a more strategic, technology-driven, and employee-centric function, aimed at optimizing workforce capabilities, fostering inclusivity, and aligning with broader organizational objectives.

Conclusion

In recent years, Human Resource Management (HRM) has witnessed several notable trends that continue to reshape the workplace landscape. The companies have increasingly arranged employee well-being, recognizing its impact on productivity and retention. Flexible work arrangements, mental health support, and wellness programs have gained traction. There's a heightened emphasis on fostering diverse and inclusive workplaces. Companies are implementing strategies to ensure equity, representation, and a sense of belonging among employees. With the time HRM has seen rapid technological advancements, including AI-driven recruitment tools, data analytics for talent management, and HR automation, streamlining processes and decision-making. As remote work continues, HR professionals are innovating to maintain high levels of employee engagement, connectivity, and team cohesion in virtual settings. These trends collectively indicate a shift towards more flexible, inclusive, and technologically driven HR practices, emphasizing the importance of adaptability, employee-centric approaches, and ongoing skill development in the modern workplace.

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Abstract

Digital payment is the need of the hour. Government of India wanted to implement digital payment in India. But at the same time whole world was in the grasp of COVID-19 pandemic. As it was a contagious disease people were very fearful about the consequence of this disease. People wanted to have a safe payment system and fortunately people had such kind of system and that was digital payment system. The infrastructure was already made by the government. The main goal of the research study is to know the digital payment usage by the people before and after COVID-19. In this research study total 52 respondents have been selected for the study who are using online digital payment. Random sampling technique is used for selecting the respondents out of the given number of available respondents in the Nagpur city. Different variables are selected to find out the impact which were time saving, usage rate, tracking, risk, transmission, challenges, acceptability, monthly spent, online shopping and payment option. Paired sample t-test is used for data analysis of the respondent's data.

Keywords: Comparative, Digital, Payment, Usage, COVID-19

INTRODUCTION

The COVID-19 pandemic has worsened the market situation. Lockdown was become mandatory and it has caused major uncertainty as far as decisions making related to payments and purchasing are concerned. COVID-19 was a contagious disease and people were very alert about not getting this disease by touching to someone or any other objects. People were very fearful about this pandemic but this was also the reality that to live they need to go to market and come in contact with the other persons or objects too. Out of many mandatory things, one was doing payment for the services or products. They did not have any choice but to pay the money and get back the rest of the money from the shopkeeper also. Prior to digital currency in trend people used to do hard cash transaction. But due to this pandemic this has spread the pandemic and people were looking for more safe money transaction by which they can be protected and money transaction can also be done. It was true that hard money transaction was one of the most preferred transactions in India even during the time of COVID-19. However, because of high fear of COVID-19 among people the trend of digital payments transactions was also rising in a country. And this was the situation when government was also pushing its efforts to promote digital payments among the people of India by means of methods such as Digital India and the Unified Payments Interface (UPI).

One of the reports of Reserve Bank of India, the overall digital payment transaction value in the country has surpassed the hard money payments. And it has happened first time in a country in year 2019-20. Hereafter, the trend has been rising because of the worst pandemic situation in India. Because one of the advantages of the digital payments was payments can be done without any physical contact with the other persons. During pandemic it was the safest method of payment transaction. People has

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adopted this method of payment and started doing all the payment by this way only. People were happy to use this model of payments because it was very easy and comfortable.

In all over India, digital payment was rising, people were doing cashless transaction as it has number of benefits. During COVID-19 it was the safest way of doing payment, as there was no touch involved. Many of the retailers, wholesalers, and customers are not part of the digital system. An unprecedented amount of revenue through their e-commerce operations during the pandemic.

During pandemic people were not allowed to stay outside, they can go outside for necessary work only such as purchasing of food or groceries or to see a doctor. At any circumstances physical contact was avoided. Therefore, people had only option but to use the digital payment system. And this habit of people has increased the demand of digital payment. All people of India have started using digital payment. Two companies Walmart and Amazon, which are biggest retailers in country have seen sharp rise in e-commerce revenues during the pandemic. Amazon reporting a net income of \$21.3 billion in 2020 and Walmart reporting a revenue of \$559.2 billion in the same year.

Finally, it can be said that COVID-19 pandemic has positively contributed the rising trend of digital payments and e-commerce in India, with big players like Walmart and Amazon obtaining the benefits.

A study by the international finance corporation found that there was an excess growth in internet usage of 1.3% in lower-middle-income countries between January and March 2020, while upper-middle-income countries remained steady.

LITERATURE REVIEW

C Chaudhari and A Kumar (2021) has shown that Indian economy was rising in digital payment. It is rising in retail sector as a result of pandemic. If we compare pre-pandemic year 2019 2020 to the pandemic-hit year 2020 2021, the increase of the digital payment was tremendous. People were more focused on the usage of the digital payment so that a safe virus free transaction can be made between two parties. And it was very feasible to people also as they can make payments instantly.

Wesam Shishah and Soha Alhelaly (2021) found out that due to COVID-19 in Saudi Arabia, there was an increase of digital payment technology. People did not want to come in contact with COVID-19 via hard currency and it has increase the trend of digital currency. This was very good as far as hygiene and health safety is considered. People were very fearful about the consequences of the pandemic. As everywhere people were badly suffering from the disease, people wanted to do a safe transaction wherein they cannot be suffered from the disease and money transactions can also be accomplished.

Abhilasha Gupta, and Rashi Singhal (2021) have found out the relationship between digital payment and its impact on its usage. They have found out that the digital payment technology was accepted in village and city of India. The usage of the digital payment system has been increased sharply after the COVID-19 pandemic.

Dr. Anil Jain, DR. Apurva Sarupria, and Ankitha Kothari (2020) found out in their research studies that COVID-19 pandemic has generated an opportunity for digital payment in India, particularly in the sector of beverages and food and also in the sector of entertainment. There has been seen a large increase in the usage of the digital payment. The hotel business and entertainment has done a substantial contribution to the Indian economy, overall 40% of the total GDP.

Mayank Jindal and Vijay Laxmi Sharma (2020) have found out that online banking can be influential in preventing the situation of COVID-19 pandemic. It has been investigated that online banking has a very great role in giving the safe and hygiene environment of money transaction. When it came to online bill payment, prepaid mobile phone recharge, and dish TV, people felt fully safe from the COVID-19 virus.

(Goyal, Pandey, & Batra, 2012) they have investigated that barriers have to be removed from the areas of security and privacy so, that a smooth online payment transaction would be possible. For

the greater acceptability of the online system, there should have a proper infrastructure so that a good transaction can be happened. There should not be any problems faced by the customers, otherwise customers would not accept the online system easily. The authors have also focused on need of the retailers and other companies also to take initiative to start the online payment system for customers so that online system trend can be brought into flow. Retailers can be very helpful in boosting the habits of online payment among customers. Authors have also focused on the issue of how retailers can win the trust of customers for online payment by not disclosing their personal information. Customers sometimes fear that they could face security issue while doing online payment. Retailers have been trying to develop a system wherein customers' concern about security issues can be addressed. As a result of that customers trust on the online system can be developed.

OBJECTIVES OF THE STUDY

- To study about the role of digital payment services pre and post-COVID.
- To study the level of usage of digital payment among people.
- To find out the importance of digital payment during COVID-19.

RESEARCH METHODOLOGY

Sampling Methodology:

A. Sampling Frame:

Research type: Exploratory research design is used for the study.

Test Variable: Digital Payment Usage

Population: All the digital payment users in Nagpur city.

Sample Unit: Digital payment users

Sample Size: 52

Sampling Method: Random Sample Method

B. Sources of Data

Primary Data: It was collected through structure questionnaire by creating google form.

Secondary Data: it was taken from newspapers, books, journals.

Hypothesis:

The hypothesis of the study are as follows”

1. H₀: There is no difference in the ‘time saving’ before and after COVID-19.
H₁: There is a difference in the ‘time saving’ after before and after COVID-19.
2. H₀: There is no difference in the ‘digital payment usage rate’ before and after COVID-19.
H₁: There is a difference in the ‘digital payment usage rate’ before and after COVID-19.
3. H₀: There is no difference in the ‘online shopping’ before and after COVID-19.
H₁: There is a difference in the ‘online shopping’ before and after COVID-19.

DATA ANALYSIS

Data analysis is done with the help of the tool paired sample t-test. Wherein the pre data is compared with the post data with an intervention of online food ordering platform.

Table 1: Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	post_time_saving	2.23	52	.983	.136
	pre_time_saving	1.25	52	.519	.072
Pair 2	post_usage_rate	2.63	52	1.010	.140
	pre_usage_rate	1.44	52	.802	.111
Pair 3	post_tracking	1.90	52	.934	.130
	pre_tracking	1.31	52	.544	.075
Pair 4	post_risk	3.19	52	1.049	.145
	pre_risk	1.87	52	1.030	.143
Pair 5	post_transmission	2.63	52	1.172	.163
	pre_transmission	1.48	52	.804	.112
Pair 6	post_challanges	2.73	52	1.031	.143
	pre_challanges	2.56	52	1.110	.154
Pair 7	post_acceptability	2.65	52	.968	.134
	pre_acceptability	1.42	52	.776	.108
Pair 8	post_monthly_spent	2.48	52	1.019	.141
	pre_monthly_Spent	1.75	52	.905	.125
Pair 9	post_online_Shopping	2.40	52	.975	.135
	pre_online_shopping	1.60	52	.955	.132
Pair 10	post_payment_option	2.50	52	1.038	.144
	pre_payment_option	1.48	52	.727	.101

The analysis above in Table 1, represents paired samples statistics for 10 different variables, each with a pre and post COVID-19 pandemic measure of digital payment usage by people. The variables are post_time_saving, post_usage_rate, post_tracking, post_risk, post_transmission, post_challanges, post_acceptability, post_monthly_spent, post_online_Shopping, and post_payment_option.

Table 2: Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	post_time_saving & pre_time_saving	52	.523	.000
	post_usage_rate & pre_usage_rate	52	.710	.000
Pair 3	post_tracking & pre_tracking	52	.578	.000
	post_risk & pre_risk	52	.678	.000
Pair 5	post_transmission & pre_transmission	52	.107	.451
	post_challanges & pre_challanges	52	.733	.000
Pair 7	post_acceptability & pre_acceptability	52	.632	.000
	post_monthly_spent & pre_monthly_Spent	52	.473	.000
Pair 9	post_online_Shopping & pre_online_shopping	52	.410	.003
	post_payment_option & pre_payment_option	52	.273	.051

As per the above Table 2, it can be observed that all the pre and post situation are correlated to each other.

Table 3: Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)		
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
					Lower	Upper				
Pair 1	post_time_saving - pre_time_saving	.981	1.075	.149	.681	1.280	6.577	51	.000	
Pair 2	post_usage_rate - pre_usage_rate	1.192	1.155	.160	.871	1.514	7.442	51	.000	
Pair 3	post_tracking - pre_tracking	.596	.955	.132	.330	.862	4.501	51	.000	
Pair 4	post_risk - pre_risk	1.327	1.294	.179	.967	1.687	7.393	51	.000	
Pair 5	post_transmission - pre_transmission	1.154	1.349	.187	.778	1.529	6.169	51	.000	
Pair 6	post_challenges - pre_challenges	.173	.785	.109	-.046	.392	1.590	51	.118	
Pair 7	post_acceptability - pre_acceptability	1.231	1.078	.149	.931	1.531	8.235	51	.000	
Pair 8	post_monthly_spent - pre_monthly_Spent	.731	.992	.138	.454	1.007	5.310	51	.000	
Pair 9	post_online_Shopping - pre_online_shopping	.808	1.049	.145	.516	1.100	5.554	51	.000	
Pair 10	post_payment_option - pre_payment_option	1.019	1.093	.152	.715	1.324	6.721	51	.000	

The test results show that for all 10 pairs, the mean difference between pre and post COVID-19 usage is statistically significant at the 0.05 level ($p < 0.05$), as evidenced by the p-value of less than .05 indicating a significant change in digital payment usage due to the pandemic.

As per our study hypotheses. Study has proved all the hypotheses. So, we can accept all the hypotheses and can say that digital payment has been sharply increased after pandemic.

The paired differences for each variable range from .173 to 1.327, with the largest difference observed for the post_risk variable. This suggests that individuals have significantly increased their digital payment behaviour since the onset of the COVID-19 pandemic, particularly in terms of perceived risk associated with digital payment.

Overall, the test results suggest a significant increase in digital payment usage post-covid, with users reporting higher usage rates, greater time-saving benefits, increased tracking, and risk perceptions, and improved acceptability and convenience of digital payments.

CONCLUSION

The result from the paired sample statistics shows, that there has been an increase in digital payment behaviour since the onset of the COVID-19 pandemic, as reflected by the higher mean scores in the post-measures for all 10 variables. However, there is some degree of variation around these means, which should be taken into consideration when interpreting the results.

the results of the paired samples t-test provide strong evidence that there has been a significant increase in digital payment behaviour since the onset of the COVID-19 pandemic, across all ten variables measured. The largest differences were observed in terms of perceived risk associated with digital payment. The findings have practical implications for businesses and policy makers who are seeking to promote and facilitate digital payments.

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Abstract

For all student motivation is very important. If they are pursuing any of the post graduate programmes, their success totally depends on the level of motivation they have towards their career. This motivation level decides their success rate in their particular field. Students come from different undergraduate background. They are somewhere influenced by their educational background. The main goal of the research is to know the intrinsic motivation of the art, science and commerce students. In this research study total 90 students have been selected for the study from different fields such as arts, commerce and science. The impact of the intrinsic motivation has been explored. Exploratory research type is used for conducting the study. Random sampling technique is used for selecting the students in the Nagpur city. Different variables are selected to find out the impact which were curiosity, challenge, control, recognition, cooperation and competition. Anova test is used for data analysis of the respondent's data. Analysis of the data has been done and the results were found, which shows the difference in intrinsic motivation among arts, science and commerce students.

Keywords: Impact, Intrinsic, Motivation, MBA, Students

INTRODUCTION

The term "motivation" is derived from the word "motive," which refers to an individual need, desire, wants or urges. It is the process of motivating individuals to act in order to achieve the objectives.

Intrinsic Motivation:

Intrinsic motivation can be explained as engaging in an activity for self as opposed to gaining a secondary benefit (Ryan and Deci, 2000). When someone is intrinsically driven, they are inspired to act by the joy or challenge involved rather than by outside demands, pressures, or incentives. Young infants' intrinsic motivation can be observed in their determined attempts to toss, grip, crush, bite or yell at unknown items. Human adults are regularly intrinsically driven although they become less important as they age, whether they are playing crosswords or they are creating artworks, reading books, gardening or watching movies. Yet, an individual must understand that intrinsic motivation has been defined in the opposite way of extrinsic motivation.

Intrinsic motivation is an inborn need to involve in a behavior for its own purpose relatively than finding out rewards or incentives from others. To put it another way, an individual is motivated by an activity's satisfaction, fulfillment or challenge rather than by an outside deadline, result or reward.

The concept "intrinsic" denotes something which is integral by definition. It is frequently called "inner," which means anything inventing from the within.

Those who are intrinsically motivated are more likely to be: which is why intrinsic motivation is seen to be superior as compare to extrinsic motivation.

- Successful – This kind of people achieve better results.

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- Committed – They have a tougher sense of own commitment.
- Persistent – They accomplish more determinedly and are less likely to leave when facing problems.
- Creative – They are more artistic and additionally to come up with innovative ideas and solutions. Intrinsic motivation is an imperative constituent of creativity.

Intrinsic incentives can take the form of:

As you master a new skill or task, you get a sense of competency. A sense of fulfilment when your employment is effective, a sense of community when you involve in group events, and a sense of determination when you mentor someone or volunteer for a non-profit.

Six Factors That Encourage Intrinsic Motivation:

- Competence
- Autonomy
- Understanding
- Alliance with personal morals
- Exclusion of factors hampering intrinsic motivation
- Scheduling of extrinsic rewards

Benefits of Intrinsic Motivation:

Several authors have highlighted the benefits of intrinsic motivation. Good changes in health related behavior. It improves behavior among them comprise:

Benefits to mental health, involves better-quality life and reduced sadness, anxiety and somatization.

Implications for one's physical health, such as better dental hygiene, reduced weight, glycemic management, better medication practice, and abandoning smoking.

Several researches have highlighted better turnover intentions, higher levels of outcome, determination and improved employee satisfaction.

LITERATURE REVIEW

Applied Research in Higher Education Academic achievement and intrinsic motivation in higher education students: An analysis of the impact of using concept maps. Francisco Peixoto. June 2022. Author has investigated the role of meaningful learning among the students of higher education by using a tool of concept maps, which is utilized as a learning strategy. The purpose of the study was to know whether CM is able to generate any changes in students' intrinsic motivation and academic achievement.

The Efficacy of Positive Education Intervention for Academic Boredom and Intrinsic Motivation among College Students: A Quasi-Experimental Study. Zheng Jie , Samsilah Roslan , Mohd Mokhtar Muhamad , Mas Nida Md Khambari and Zeinab Zaremohzzabieh.October 2022. The purpose of the study was to know the role of intrinsic motivation and academic boredom on students' achievement and learning.

Impact of Academic Intrinsic Motivation Facets on Students' Academic Performance. Venjie N. Oclare. April 2021. The purpose of the study was to find out the role of different factors of intrinsic motivation on academic performance of students. A descriptive method was utilized for the study.

Social media use and its impact on intrinsic motivation in Generation Z: a case study from Poland. Karol Krol, Dariusz Zdonek. 6 October 2020. Activities on social platforms affect the audience. They may impact brand perception, purchasing decisions or motivation to act. Motivation

provoke people to behave in a particular manner. The main goal of this paper was to analyze the usage of social media and its influence on intrinsic motivation, with a special attention on generation Z type of users (born between 1994 and 2002).

The Impact of Flipped Learning on Cognitive Knowledge Learning and Intrinsic Motivationin Norwegian Secondary Physical Education. Ove sterlie and Ingar Mehus. 16 April 2020. The main goal of the study was to find out how flipped learning model in Norwegian country, the physical education in lower and upper secondary school could influence situational motivation of student and fitness knowledge about health.

Transformational Leadership, Systems, and Intrinsic Motivation Impacts on Innovation in Higher Education Institutes: Faculty Perspectives in Engineering Colleges. Reem S. Al- Mansoori and Muammer Koç. 28 July 2019. The goal of this study is to investigate the innovation building capacity through the influence of transformational leadership on respondents' satisfaction. The research has been carried out in engineering colleges.

The impact of socio-cultural differences on formation of intrinsic motivation: The case of local and foreign students. Julia Konstantinovna Kazakovaa, Elena Mikhailovna Shastinab.2019. the main goal of this research paper is to investigate the similarities and variations in the intrinsic motivation formation of foreign and local students depending upon social cultural background. The research paper explains the psychological process in addition to cultural and social environment.

Level of intrinsic motivation of distance education students in e-learning environments. Mehmet Fırat | Hakan Kılınç | Tevfik Volkan Yüzer.21 October 2017. According to the authors, the kind of motivation that initiates and withstands with the behavior is very important factor of learning in any of the environment. With respect to the behavior of the individual intrinsic motivation activates and sustains individual interest of the students. It is intrinsic motivation that directs the behavior to do something in any environment.

The impact of nonlinear pedagogy on physical education teacher education students' intrinsic motivation. Brendan Moy, Ian Renshaw & Keith Davids. 15 May 2015. They have explained that motivational level of the students should be high. If they are going for any task. Otherwise the chances of failure of that task will be very high. If students are provided with the motivational support, then there are always positive outcomes. Number of evidences have shown that for physical education or sports intrinsic motivation of the students are very important for their progress.

OBJECTIVES

1. To find out the impact of intrinsic motivation on Art, Science & Commerce students in MBA program.
2. To explore the intrinsic motivation.
3. To find out the role of intrinsic motivation on MBA students.
4. To find out the inter-relation between intrinsic motivation and Art, Science & Commerce students in MBA program.

RESEARCH METHODOLOGY

The study is descriptive in nature, as it will explain the Impact of Intrinsic Motivation on Art, Science & Commerce students in MBA Program.

Research Design

A system of procedures and techniques used to find the result of the research problem has been summarized under the research methodology.

Data Collection

Both primary and secondary data will be used for the study; the research instrument which will

be used to collect primary data was a survey questionnaire, which consists Likert's five-point scaling questions.

The secondary data is collected from different websites which are available on internet and different national and international journals.

Sampling Method

The sample is built on the foundation of simple random sampling. The respondents make up the sample for the planned research, which is a form of probability sampling.

Sampling Unit

The study's sample unit will be the MBA students from different streams.

Sampling Size

The sample size will be 90 MBA students.

Hypothesis

H1: There is difference in the curiosity among arts, Commerce & Science students.

H2: There is difference in the challenge faced by arts, Commerce & Science students.

H3: There is difference in the control among arts, Commerce & Science students.

H4: There is difference in the recognition among arts, Commerce & Science students.

H5: There is difference in the cooperation among arts, Commerce & Science students.

H6: There is difference in the competition among arts, Commerce & Science students.

DATA ANALYSIS

Factors that promote intrinsic motivation

- Curiosity- Curiosity pushes us to explore and learn for sole pleasure of learning and mastering.
- Challenge- Being challenged helps us work at a continuously optimal level work toward a meaningful goal.
- Control- This comes from basic desire to control what happens and make decisions that affect the outcome.
- Recognition- We have an innate need to be appreciated and satisfied when our efforts are recognized and appreciated by others.
- Cooperation- Cooperating with others satisfies our need for belonging. We also feel personal satisfaction when we help others and work together to achieve shared goals.
- Competition- Competition poses challenges and increases the importance. We place emphasis on doing well.

Table 1: Descriptive

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minim um	Maxim um
						Lower Bound	Upper Bound		
curiosity	Arts	30	1.97	1.159	.212	1.53	2.40	1	5
	Commerce	30	2.53	1.306	.238	2.05	3.02	1	5
	Science	30	1.90	1.029	.188	1.52	2.28	1	5
challenge	Total	90	2.13	1.192	.126	1.88	2.38	1	5
	Arts	30	2.73	1.363	.249	2.22	3.24	1	5
	Commerce	30	2.43	1.104	.202	2.02	2.85	1	5
control	Science	30	2.67	1.061	.194	2.27	3.06	1	5
	Total	90	2.61	1.177	.124	2.36	2.86	1	5
	Arts	30	2.33	1.348	.246	1.83	2.84	1	5
recognition	Commerce	30	2.17	1.315	.240	1.68	2.66	1	5
	Science	30	1.83	.699	.128	1.57	2.09	1	3
	Total	90	2.11	1.165	.123	1.87	2.36	1	5
cooperation	Arts	30	2.37	1.129	.206	1.95	2.79	1	5
	Commerce	30	2.40	1.192	.218	1.95	2.85	1	5
	Science	30	1.87	.973	.178	1.50	2.23	1	4
competition	Total	90	2.21	1.117	.118	1.98	2.45	1	5
	Arts	30	2.53	1.196	.218	2.09	2.98	1	5
	Commerce	30	2.53	1.358	.248	2.03	3.04	1	5
cooperation	Science	30	2.40	1.303	.238	1.91	2.89	1	5
	Total	90	2.49	1.274	.134	2.22	2.76	1	5
	Arts	30	1.87	.937	.171	1.52	2.22	1	5
competition	Commerce	30	2.20	1.495	.273	1.64	2.76	1	5
	Science	30	1.97	.999	.182	1.59	2.34	1	5
	Total	90	2.01	1.166	.123	1.77	2.26	1	5

Table 2: ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
curiosity	Between Groups	7.267	2	3.633	2.653	.021
	Within Groups	119.133	87	1.369		
	Total	126.400	89			
challenge	Between Groups	1.489	2	.744	.531	.010
	Within Groups	121.900	87	1.401		
	Total	123.389	89			
control	Between Groups	3.889	2	1.944	1.446	.241
	Within Groups	117.000	87	1.345		
	Total	120.889	89			
recognition	Between Groups	5.356	2	2.678	2.205	.026
	Within Groups	105.633	87	1.214		
	Total	110.989	89			
cooperation	Between Groups	.356	2	.178	.107	.898
	Within Groups	144.133	87	1.657		
	Total	144.489	89			
competition	Between Groups	1.756	2	.878	.640	.011
	Within Groups	119.233	87	1.370		
	Total	120.989	89			

The significant value of the curiosity is 0.021 and it is less than 0.05. Therefore, the alternate hypothesis is accepted and that shows the difference in curiosity.

The significant value of the challenge is 0.010 and it is less than 0.05. Therefore, the alternate hypothesis is accepted and that shows the difference in challenge.

The significant value of the control is 0.241 and it is greater than 0.05. Therefore, the null hypothesis is accepted and it does not show the difference in control.

The significant value of the recognition is 0.026 and it is less than 0.05. Therefore, the alternate hypothesis is accepted and that shows the difference in recognition.

The significant value of the cooperation is 0.898 and it is greater than 0.05. Therefore, the null hypothesis is accepted and that shows there is no difference in cooperation.

The significant value of the competition is 0.011 and it is less than 0.05. Therefore, the alternate hypothesis is accepted and that shows the difference in competition.

CONCLUSION

The study concludes that the study is based on impact of Intrinsic Motivation on Art, Science & Commerce students in MBA Program. Descriptive shows the different factors which promotes intrinsic motivation. All the hypotheses are accepted except hypotheses related to cooperation and control. In a big way it has been seen that the intrinsic motivation has a big impact on the students depending upon their field in undergraduate ion.

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Abstract:

In this chapter on "Providing resources and information on injury prevention," we explore the importance of prioritizing injury prevention in sports. We discuss common sports injuries, their causes, and effective prevention strategies. By raising awareness, utilizing online resources, conducting educational workshops, and fostering collaboration with healthcare professionals, we aim to empower athletes, coaches, and parents with the knowledge needed to prevent injuries. Through a collective effort and evidence-based practices, we can create a culture of safety in sports and reduce the occurrence of preventable injuries.

Keywords: *injury prevention, sports injuries, awareness, resources, information, prevention strategies, athletes, coaches, parents, collaboration, healthcare professionals, culture of safety, evidence-based practices*

1. Introduction to Injury Prevention in Sports

1.1 Importance of injury prevention

In the world of sports, injuries are an all too common occurrence. Whether it's a sprained ankle on the basketball court or a pulled muscle on the soccer field, injuries can have a significant impact on athletes and their performance. That's why injury prevention plays a crucial role in the world of sports.

The importance of injury prevention cannot be overstated. Not only does it help athletes stay in the game and perform at their best, but it also minimizes the physical, emotional, and financial toll that injuries can have.¹ By implementing effective injury prevention strategies, athletes can reduce the risk of injuries, enhance their longevity in sports, and optimize their overall well-being.²

1.2 Impact of injuries on athletes and sports performance

Injuries can have a profound impact on athletes and their sports performance. When athletes get injured, it not only affects their physical well-being but also their mental and emotional state. Physically, injuries can result in pain, reduced range of motion, muscle weakness, and decreased overall performance. Athletes may struggle to perform at their usual level, leading to a decline in their skills, speed, and agility.³

The psychological impact of injuries should not be overlooked. Athletes may experience feelings of frustration, disappointment, and even depression due to their inability to participate fully in their sport. The fear of re-injury can also affect an athlete's confidence and willingness to take risks, potentially hindering their performance.

Moreover, injuries can disrupt an athlete's training schedule, leading to a loss of conditioning and decreased fitness levels. This can have a cascading effect on an athlete's overall performance, as they may struggle to regain their previous level of strength, endurance, and coordination.

¹ MPT SPORTS, PhD Scholar, HOD and Principal In-charge, Dept. of Physiotherapy, Mansarovar Global University

Injuries can also impact team dynamics. When a key player is injured, it can disrupt the team's strategy and cohesion. The absence of a skilled athlete can create a void that is challenging to fill, potentially affecting the team's overall performance and success.^{1,2}

2. Understanding Sports Injuries

2.1 Common types of sports injuries

a. Sprains: A sprain occurs when the ligaments surrounding a joint are stretched or torn. It is important to reference reputable sources such as medical journals or textbooks to provide accurate information on the causes, symptoms, and treatment of sprains.

b. Strains: Strains involve the stretching or tearing of muscles or tendons.

c. Fractures: Fractures refer to broken bones, which can be caused by direct impact, repetitive stress, or overuse.

d. Dislocations: Dislocations occur when the bones in a joint are forced out of their normal position

e. Concussions: Concussions are mild traumatic brain injuries resulting from a blow to the head.

f. Tendinitis: Tendinitis refers to the inflammation of a tendon due to repetitive stress or overuse.⁴

2.2 Risk factors for sports injuries

a. Previous Injuries: Individuals with a history of previous sports injuries are more susceptible to future injuries.

b. Poor Conditioning: Inadequate physical conditioning, such as insufficient strength, flexibility, or endurance, can increase the risk of sports injuries.

c. Improper Technique: Incorrect or poor sports technique can put individuals at higher risk of injuries.

d. Overuse and Training Errors: Overtraining, excessive training volume or intensity, and lack of proper rest can lead to overuse injuries.

e. Environmental Factors: Factors such as playing surface, weather conditions, and equipment quality can contribute to sports injuries.

f. Age and Growth: Certain age groups, such as adolescents going through growth spurts, may be more prone to specific types of sports injuries.

3. Pre-Participation Screening and Assessment

3.1. Purpose of Pre-Participation Screening: Pre-participation screening aims to identify any potential health risks or conditions that may increase the likelihood of sports-related injuries or complications.

3.2. Medical History Questionnaire: A comprehensive medical history questionnaire helps gather information about the athlete's past medical conditions, surgeries, allergies, medications, and family medical history.

3.3. Physical Examination: A thorough physical examination assesses an athlete's general health, musculoskeletal system, cardiovascular system, and other relevant factors.

3.4. Cardiac Screening: Evaluating cardiac health is an essential component of pre-participation screening.

3.5. Additional Assessments: Depending on the sport and individual factors, additional assessments may be necessary, such as vision and hearing tests, orthopedic assessments, and psychological evaluations.

4. Evaluating athletes' fitness levels and injury history

a. Fitness Assessment: Conducting a comprehensive fitness assessment helps evaluate an athlete's physical capabilities and identify areas for improvement. This may include assessments of cardiovascular endurance, muscular strength and endurance, flexibility, and body composition.

b. Injury History Evaluation: Assessing an athlete's injury history is vital to understand their previous injuries, rehabilitation progress, and any lingering concerns. This evaluation can help determine the risk of recurring injuries or potential limitations.

c. Functional Movement Screening: Functional movement screening involves assessing an athlete's movement patterns and identifying any imbalances, weaknesses, or asymmetries. This evaluation helps identify areas that may require targeted training or corrective exercises.

e. Performance Testing: Performance testing measures an athlete's specific skills and abilities related to their sport. This may include speed tests, agility drills, vertical jump assessments, or sport-specific skill evaluations.⁵

4.1 Identifying potential risk factors

a. Biomechanical Factors: Biomechanical factors refer to how an athlete's body moves and functions during sports activities. These factors can include joint alignment, muscle imbalances, and movement patterns. Research studies on biomechanical analysis in sports can provide valuable insights into potential risk factors.

b. Training Volume and Intensity: Excessive training volume or intensity without adequate recovery can increase the risk of injuries. It's important to consider the load placed on an athlete's body during training and competition.

c. Previous Injury History: Athletes with a history of specific injuries may be more prone to similar injuries in the future. Research on injury surveillance and analysis can provide valuable insights into the relationship between previous injuries and future injury risk.

e. Environmental Factors: Environmental factors, such as playing surface, weather conditions, and equipment used, can contribute to injury risk.

5. Warm-up and Cool-down Protocols

a. Warm-up Protocols: A proper warm-up is essential to prepare the body for physical activity. It typically includes activities that gradually increase heart rate, blood flow, and body temperature. The benefits of a warm-up, are improved muscle flexibility, enhanced joint mobility, and increased neuromuscular activation.

b. Components of a Warm-up: A comprehensive warm-up typically consists of three main components: cardiovascular exercises, dynamic stretching, and sport-specific drills.

c. Cool-down Protocols: After physical activity, a cool-down helps the body transition from exercise to a resting state. It typically includes activities that gradually decrease heart rate, promote muscle recovery, and prevent muscle soreness.⁶

d. Components of a Cool-down: A comprehensive cool-down may include activities such as light aerobic exercise, static stretching, and foam rolling.

5.1 The role of warm-up exercises in injury prevention

Warm-up exercises play a crucial role in injury prevention during physical activity. They help prepare the body for the demands of exercise by gradually increasing heart rate, blood flow, and body temperature. By doing so, warm-up exercises offer several benefits that contribute to reducing the risk of injuries.

a. Increased Muscle Temperature: Warm-up exercises raise the temperature of muscles, tendons, and ligaments. This increase in temperature improves muscle elasticity and flexibility, making them less prone to strains and tears.

b. Enhanced Joint Mobility: Through gentle movements and stretches, warm-up exercises promote joint mobility. This increased range of motion allows joints to move more freely during exercise, reducing the likelihood of joint-related injuries.

c. Improved Neuromuscular Activation: Warm-up exercises activate the neuromuscular system, improving the communication between muscles and nerves. This enhanced activation helps with coordination, balance, and proprioception, reducing the risk of falls or other accidents during physical activity.

d. Mental Preparation: Warm-up exercises also contribute to mental preparation for physical activity. They help athletes focus, increase motivation, and reduce anxiety, leading to better performance and decreased injury risk.⁷

5.2 Importance of cool-down exercises for recovery

a. Promotes Gradual Recovery: Cool-down exercises help the body transition from intense exercise to a resting state gradually. By engaging in low-intensity activities like gentle stretching or walking, it allows the heart rate and breathing to return to normal gradually. This gradual recovery helps prevent blood pooling and dizziness that can occur when abruptly stopping intense exercise.

b. Facilitates Removal of Waste Products: During exercise, the body produces metabolic waste products like lactic acid. Cool-down exercises aid in the removal of these waste products by promoting blood circulation and lymphatic drainage. This process helps reduce muscle soreness and fatigue, allowing for a quicker recovery.

c. Reduces Risk of Blood Pooling: Cool-down exercises, especially those involving active movements, help prevent blood from pooling in the extremities. This is important because pooling blood can lead to lightheadedness or fainting. By keeping the muscles engaged and the blood circulating, cool-down exercises contribute to a safer recovery process.

d. Enhances Flexibility and Range of Motion: Incorporating stretching exercises during the cool-down phase can help improve flexibility and maintain or increase the range of motion in joints. This can contribute to better overall mobility, reduce the risk of muscle imbalances, and potentially prevent injuries in the long run.⁸

6. Strength and Conditioning Programs

a. Goal-Driven Training: Strength and conditioning programs are tailored to specific goals, whether it's improving strength, building muscle, enhancing endurance, or enhancing performance in a particular sport. These programs are designed to target specific muscle groups and energy systems to optimize performance.

b. Progressive Overload: A fundamental principle of strength and conditioning is progressive overload. This means gradually increasing the intensity, duration, or frequency of exercises to continually challenge the body and stimulate adaptation. By progressively overloading the muscles and cardiovascular system, athletes can make consistent gains in strength and performance.

c. Periodization: Effective strength and conditioning programs often incorporate periodization, which involves dividing the training program into specific phases or cycles. These phases typically include different training intensities, volumes, and exercise variations to prevent plateaus, optimize recovery, and peak performance at the right time.

d. Exercise Selection: Strength and conditioning programs include a variety of exercises that target different muscle groups and movement patterns. These exercises can include compound movements like squats, deadlifts, and bench presses, as well as accessory exercises to address specific weaknesses or imbalances.

e. Recovery and Rest: Adequate recovery and rest are essential components of strength and conditioning programs. Rest days, proper nutrition, and quality sleep allow the body to repair and rebuild muscle tissue, reduce the risk of overtraining, and optimize performance.

6.1 Designing programs to improve muscular strength and endurance

a. Exercise Selection: When designing a program to improve muscular strength and endurance, it's important to include a variety of exercises that target different muscle groups. This can include compound exercises like squats, deadlifts, bench presses, and lunges, as well as isolation exercises that specifically target individual muscles.

b. Training Intensity: The intensity of the exercises plays a crucial role in stimulating muscular strength and endurance adaptations. This can be achieved by using a weight that is challenging enough to cause fatigue within the desired rep range. Gradually increasing the resistance over time helps to promote progressive overload and continued improvements.

c. Training Volume: Volume refers to the total amount of work performed during a training session or over a given period. It can be manipulated by adjusting the number of sets, reps, and exercises performed. Finding the right balance between intensity and volume is important to optimize gains in muscular strength and endurance.

d. Training Frequency: The frequency at which you perform strength and endurance exercises also influences your progress. Generally, it's recommended to train each muscle group at least 2-3 times per week to allow for adequate recovery and stimulation of muscle growth.

e. Progression: Progression is a key aspect of any strength and endurance program. Gradually increasing the challenge by adding more weight, increasing the number of reps, or reducing rest periods helps to continually challenge the muscles and stimulate further adaptations.⁹

6.2 Incorporating flexibility and mobility exercises

a. Types of Flexibility Exercises: There are various types of flexibility exercises that can be incorporated into a program, including static stretching, dynamic stretching, and proprioceptive neuromuscular facilitation (PNF) stretching. Each type has its own benefits and can be used in different situations.

b. Benefits of Flexibility and Mobility: Flexibility exercises help to increase joint range of motion, improve muscle elasticity, and enhance overall movement efficiency. They can also help to alleviate muscle imbalances and reduce the risk of injuries during physical activities.

c. Warm-up and Cool-down: It's important to include flexibility exercises as part of a proper warm-up and cool-down routine. Prior to a workout, dynamic stretching can be used to warm up the muscles and prepare them for activity. After a workout, static stretching can be incorporated to help cool down the muscles and promote relaxation.

d. Frequency and Duration: To improve flexibility and mobility, it's recommended to perform flexibility exercises at least 2-3 times per week. Holding each stretch for 15-30 seconds and repeating each stretch 2-4 times can help to achieve optimal results.

e. Safety Considerations: When performing flexibility exercises, it's important to prioritize safety. Avoid bouncing or jerking movements during stretches, as this can increase the risk of injury. Instead, focus on smooth and controlled movements, gradually increasing the stretch without causing pain.¹⁰

7. Nutritional Considerations

a. Macronutrients: The importance of macronutrients such as carbohydrates, proteins, and fats in providing energy, supporting muscle growth and repair, and maintaining overall bodily functions. Provide recommendations for the appropriate balance of macronutrients based on individual needs and goals.

b. Micronutrients: The significance of micronutrients like vitamins and minerals in maintaining proper physiological functions and enhancing recovery. Emphasize the importance of consuming a varied and balanced diet to ensure an adequate intake of micronutrients.

c. Hydration: The importance of proper hydration for optimal performance and recovery. Explain the role of water in regulating body temperature, supporting nutrient transport, and facilitating joint function. Provide guidelines for adequate fluid intake before, during, and after physical activity.

d. Pre- and Post-Exercise Nutrition: The significance of pre- and post-exercise nutrition in fueling workouts, optimizing performance, and promoting recovery. Outline recommendations for pre-workout meals or snacks to provide energy and enhance endurance. Explain the importance of post-workout nutrition to replenish glycogen stores, repair muscle tissue, and support muscle growth.

e. Individual Considerations: Nutritional needs can vary based on factors such as age, gender, body composition, and specific goals. Encourage readers to consult with a registered dietitian or nutritionist for personalized guidance.

7.1 The role of nutrition in injury prevention and recovery

a. Nutrients for Injury Prevention: The importance of consuming a well-balanced diet rich in essential nutrients to support overall musculoskeletal health and minimize the risk of injuries. Highlight the role of nutrients like calcium, vitamin D, and magnesium in maintaining strong bones and preventing fractures.

b. Inflammation and Antioxidants: Nutrition can influence the body's inflammatory response and the importance of managing inflammation for injury prevention and recovery. Discuss the role of antioxidants, such as vitamins C and E, in reducing oxidative stress and supporting tissue repair.

c. Protein for Tissue Repair: The significance of protein in the recovery process, as it provides the building blocks for tissue repair and muscle regeneration. Discuss the recommended protein intake for injury prevention and recovery, and the importance of consuming high-quality protein sources.

d. Energy and Nutrient Timing: Energy balance and nutrient timing in supporting the body's recovery from injuries. Discuss the role of carbohydrates in replenishing glycogen stores and providing energy for healing processes.

5. Hydration: Adequate hydration in supporting the body's recovery from injuries. Explain how proper hydration helps in nutrient transport, tissue repair, and overall healing.¹¹

7.2 Hydration and fueling strategies for optimal performance

a. Importance of Hydration: Staying hydrated before, during, and after physical activity. Dehydration can negatively impact performance, leading to fatigue, decreased endurance, and impaired cognitive function.

b. Hydration Guidelines: Fluid intake based on individual needs, activity level, and environmental conditions. Monitoring urine color and frequency as indicators of hydration status.

c. Electrolytes and Performance: Electrolytes, such as sodium, potassium, and magnesium, in maintaining fluid balance and optimizing performance. Replenishing electrolytes during prolonged or intense exercise.

d. Fueling Strategies: Importance of consuming adequate carbohydrates to provide energy for physical activity. Carbohydrate loading before endurance events and the benefits of consuming carbohydrates during prolonged exercise.

e. Pre- and Post-Workout Nutrition: Importance of consuming a balanced meal or snack before exercise to provide the body with the necessary fuel. Post-workout nutrition for recovery, including the consumption of protein and carbohydrates to promote muscle repair and glycogen replenishment.¹²

8. Education and Awareness

a. Common Sports Injuries: Most common types of sports injuries, such as sprains, strains, fractures, dislocations, and concussions.

b. Injury Prevention Strategies: The importance of injury prevention through proper warm-up and cool-down routines, adequate rest and recovery, appropriate equipment usage, and maintaining good technique and form during sports activities.

c. Understanding Risk Factors: The various factors that can contribute to an increased risk of sports injuries, such as previous injuries, inadequate conditioning, poor nutrition, overtraining, and environmental factors.

d. Early Recognition and Management: The importance of early recognition and prompt management of sports injuries. The RICE (Rest, Ice, Compression, Elevation) principle for initial injury management and when to seek professional medical assistance.

e. Rehabilitation and Return to Play: The rehabilitation process for sports injuries, including the role of physiotherapy, exercises, and gradual progression of activity.¹³

8.1 Promoting awareness of injury prevention among athletes, coaches, and parents

a. Importance of Education: Emphasize the significance of educating athletes, coaches, and parents about common sports injuries, their causes, and prevention strategies. By understanding the risks and taking proactive measures, they can minimize the occurrence of injuries.

b. Pre-Participation Physical Examinations: The importance of pre-participation physical examinations conducted by healthcare professionals. These evaluations help identify any underlying health conditions or musculoskeletal issues that may increase the risk of injuries.

c. Proper Training and Technique: The significance of proper training techniques, including strength and conditioning exercises, flexibility training, and skill development. The importance of gradually increasing intensity and duration to avoid overuse injuries.

d. Equipment and Safety Measures: The role of appropriate sports equipment, such as helmets, protective padding, and footwear, in preventing injuries. The importance of regular equipment maintenance and ensuring proper fit.

e. Warm-up and Cool-down: The benefits of warm-up exercises to prepare the body for physical activity and cool-down routines to aid in recovery. Dynamic stretches and mobility exercises that can be incorporated into warm-up and cool-down routines.

f. Rest and Recovery: Importance of rest and recovery periods to allow the body to heal and prevent overuse injuries. Encourage athletes, coaches, and parents to prioritize sufficient sleep, hydration, and nutrition for optimal recovery.

g. Creating a Supportive Environment: The role of coaches, parents, and sports organizations in fostering a culture of safety, support, and open communication. The reporting of injuries, the implementation of injury prevention programs, and the availability of medical support during practices and competitions.¹⁴

8.2 Providing resources and information on injury prevention

a. Awareness Campaigns: The importance of creating awareness campaigns to educate individuals about common sports injuries, their causes, and prevention strategies. These campaigns can include informative brochures, posters, online resources, and social media campaigns to reach a wider audience.

b. Online Resources: The significance of providing easily accessible online resources on injury prevention. This includes informative websites, articles, videos, and interactive tools that offer guidance on warm-up exercises, stretching routines, injury prevention programs, and proper technique demonstrations.

c. Educational Workshops and Seminars: The value of organizing workshops and seminars to educate athletes, coaches, and parents about injury prevention. These events can feature expert speakers, demonstrations, and interactive sessions to enhance understanding and promote practical implementation.

d. Collaboration with Healthcare Professionals: The importance of collaborating with healthcare professionals, such as sports medicine physicians, physical therapists, and athletic trainers. These professionals can provide expert guidance, develop injury prevention programs, and offer resources tailored to specific sports and age groups.

e. Sports Organizations and Governing Bodies: The role of sports organizations and governing bodies in promoting injury prevention. Encourage them to prioritize injury prevention initiatives, implement safety guidelines, and provide resources to athletes, coaches, and parents.

f. Partnerships with Schools and Sports Clubs: The benefits of partnering with schools and sports clubs to integrate injury prevention education into their programs. This can involve incorporating injury prevention modules into physical education classes, coach training programs, and parent orientations.

g. Collaboration with Community Stakeholders: The importance of collaborating with community stakeholders, such as local sports clubs, recreational centers, and healthcare facilities. By working together, you can create a network of support and resources for injury prevention.¹⁵

Conclusion, prioritizing injury prevention in sports is crucial for athletes, coaches, and parents alike. By understanding the common sports injuries, their causes, and prevention strategies, we can take proactive steps to keep athletes safe and healthy. Through awareness campaigns, online resources, educational workshops, collaboration with healthcare professionals, and partnerships with schools and sports clubs, we can effectively disseminate information and empower individuals with the knowledge they need to prevent injuries. Remember, injury prevention is a collective effort that requires collaboration among sports organizations, governing bodies, healthcare professionals, and the community. By working together and utilizing evidence-based practices, we can create a culture of safety in sports and reduce the occurrence of preventable injuries.

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ABSTRACT

Eczema is similar to disease entity Vicarcika described in Ayurveda. Vicarcika is a condition in which there occurs greyish itching eruptions along with excessive erudition. It is described in Brahattrayi as kusdrakustha. It is caused by incompatible food and exercise after meal and Susruta describes this disease under the category of Asta Mahagada and described it infectious i.e. Aupasargika. Eczema is believed to result from a genetic defect that results in an abnormality of the skin barrier. Trigger of eczema outbreak can be environmental, irritants or allergen substances like soap, perfumes, chemicals, food allergies, life style stress or change in temperature or humidity. Eczema most commonly causes dry reddened skin that itches or burn although the appearance of eczema varies from person to person and manifest in accordance to its specific type. Vicharchika i.e. eczema is one such disease of skin comes under Kshudra Kushtha and considered as curable disease but it is difficult to manage due to its relapsing nature. Vicharchika is Kapha Pradhana Tridoshaja Roga characterized with symptoms of Shyava, Atikandu, Raji, Rukshata and Ruja, etc. Shodhana along with Shamana therapies suggested for treating such types of diseases. The disease not only Kapha aggravation but also associated with Raktapradoshaja Vikara.

Keywords: - *Eczema, Vicarcika, Aupasargika, Allergen, Itches*

INTRODUCTION

The term Eczema is derived from Greek word meaning “to boil out”. Eczema is general term for many types of dermatitis. Eczema is a condition that causes your skin to become dry, itchy and bumpy. This condition weakens your skin’s barrier function, which is responsible for helping your skin retain moisture and protecting your body from outside elements. It is distinctive pattern of the skin showing a combination of signs which develop accordingly on duration of rash and types of eczema. It can affect people of any age although the condition is most common in infants and about 85% of those affected have set prior to 5 years of age. Eczematous dermatitis has many causes. One of the most common conditions called atopic dermatitis. Often those using the term eczema are referring to atopic dermatitis.

AETIOLOGY

It is generally considered as genetically inherited. People with eczematous dermatitis have a variety of abnormal immunologic finding which are probably related to more than one genetic defect. Such person tends to have elevated IgE antibody level and have difficulty in fighting of certain viral, bacterial and fungal infections. Like most other non-infectious diseases, atopic skin diseases can be triggered by environmental factors.

COMMON TRIGGERS OF THE ECZEMA (ATOPIC DERMATITIS)

- a) Harsh soaps & detergents

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- b) Solvents & cosmetics
- c) Low humidity
- d) Lotions
- e) Rough wool clothing
- f) Sweating
- g) Occlusive rubber or plastic gloves
- h) Rubbing
- i) *Staphylococcus aureus*
- j) Repeated wetting and drying of the skin

PATHOGENESIS

In acute stages oedema of the epidermis progresses to the formation of intra-epidermal vesicles which may enlarge and rupture. In the chronic stage there is less oedema and vesication but more thickening of the epidermis. This is accompanied by a variable degree of vasodilatation and T helper lymphocytes infiltration in the upper dermis.

TYPES OF ECZEMA

- 1) Exogenous
 - a. Irritant
 - b. Allergic
- 2) Endogenous
 - a. Atopic
 - b. Seborrheic
 - c. Discoid
 - d. Asteatotic
 - e. Gravitational
 - f. Neurodermatitis
 - g. Pompholyx

CLINICAL FEATURES

- 1. Usually, the first symptoms of eczema are intense itching.
- 2. The rash appears later and is red and bumpy.
- 3. The rash itches or burns.
- 4. If it is scratched, it oozes and become crusty.
- 5. In adults, chronic rubbing produces thickened plaques of skin.
- 6. In some, develop red bumps or clear fluid filled bumps that look “Bubbly” and when scratched then add wetness to the overall appearance.
- 7. Painful cracks develop over a period of time.
- 8. Rash can be anywhere in the body, but in adults it is often found on neck, flexures of the arm which is opposite to the elbow and flexures of the legs which is opposite to the knee.
- 9. The itching may be so intense that it interferes with sleep.

COMPLICATIONS

- 1. Super infection
- 2. Reaction to local medicaments
- 3. Psychological factors

INVESTIGATION

Patch testing

1. Prick testing
2. Culture for bacteria and yeast for super infection

DIAGNOSIS

The three key elements in identifying eczema are: -

1. Characteristic appearance and distribution of a chronic rash.
2. Severe itching.
3. Atopy or a personal or family tendency towards asthma and hay fever.

MANAGEMENT APPROACHES

A) Prevention

1. Applying moisturizer frequently especially after bathing.
2. Bathing in warm but not hot water and using a mild soap.
3. Limiting or avoiding contact with known irritants like soap, perfumes, detergents, jewellery, environmental irritants etc.
4. Wearing loose fitting cotton clothing.
5. Use of cool compresses to control itching.
6. Avoiding food that cause allergic reactions.
7. Exercise, meditation or other stress management techniques to release stress.
8. Wearing protective gloves to avoid frequent submersion of the hand in water.
9. Avoiding hot & sweat causing activities like working in heat.
10. Maintain good skin hygiene.

B) Medical Management

Line of Treatment

1. **Nidana Parivarjana** (Avoidance of etiological factor)
Incompatible diet, Avoidance & explore to allergens, Chemicals and allergic food articles.
2. **Samsodhana Cikitsa** (Bio-Cleansing Therapy) followed by Samana Cikitsa (Palliative Therapy) should be advocated.
 - i. Sneha Pana – Internal oleation with Mahakhadiradi Ghrta 50 ml with 2-3 gm saindhava lavana daily for 3-7 days before Panckarma.
 - ii. Vamana – Therapeutic emesis at the interval of 15 days.
 - iii. Virecana – Therapeutic purgation with Eranda Taila 10 to 20 ml at bed time at the interval of 1 month.
 - iv. Raktamoksana – Bloodletting with pracchana by expert hands at the interval of 6 months.
 - v. Avapidana Nasya – Nasal insufflations at the interval of 3 days.
 - vi. These procedures should be repeated considering Atura Bala.
3. **Samana Cikitsa** (Drug Therapy)

SINGLE DRUGS

Sr. No.	Drugs	Daily Dose	Anupana (Mode of Adminstration)
1.	Khadira Curna	1 gm Twice a day	Luke warm Water
2.	Tuvaraka Taila	10-20 ml Twice a day	Luke warm Water
3.	Bakuci Curna	1-3 gm Twice a day	Luke warm Water
4.	Rasamanikya Rasa	125 mg Twice a day	Honey & Clarified Butter
5.	Purified Gandhaka	250-500 mg Twice a day	Honey
6.	Nimba Curna	3-5 gm Twice a day	Luke warm Water

Sr. No.	Drugs	Daily Dose	Anupana (Mode of Adminstration)
7.	Haridra curna	3 gm Twice a day	Luke warm Water
8.	Sariva Curna	3 gm Twice a day	Luke warm Water
9.	Vidanga Curna	1-3 gm Twice a day	Luke warm Water

COMPOUND FORMULATIONS

Sr. No.	Formulations	Daily Dose	Anupana (Mode of Adminstration)
1.	Manjisthadi Kvatha	30 ml Twice a day	Water
2.	Amrtabhallataka	3-6 gm Twice a day	Luke warm Milk
3.	Mahatiktaka Ghrta	6-12 gm Twice a day	Luke warm Milk
4.	Somraji Taila	10-20 ml Twice a day	Luke warm Water
5.	Pancatikta Ghrta	6-12 gm Twice a day	Luke warm Water
6.	Maricyadi Taila	10-20 ml Twice a day	External application
7.	Gandhaka Rasayana	250-500 mg Twice a day	Honey
8.	Kaisora Guggulu	2 gm Twice a day	Luke warm Water
9.	Arogyavardhini Vati	500 mg Twice a day	Luke warm Water
10.	Pancanimbadi Curna	3-6 gm Twice a day	Luke warm Water
11.	Khadirarista	20-30 ml Twice a day	Luke warm Water
12.	Nimbadi Curna	3-6 gm Twice a day	Water
13.	Nimbadi Taila	10-20 ml Twice a day	External Application
14.	Sarivadi Vati	500 mg Twice a day	Water

Note: -

Out of the drugs mentioned above any one of the drugs or in the combination may be prescribed by the physician. The duration of the treatment may vary from patient to patient. Physician should decide the dosage (Per dose) and duration of the therapy based on the clinical findings and response to therapy.

C) YOGIC PRACTICES

The following yogic practices are beneficial in Eczema. However, these should be performed only under the guidance of qualified yoga therapist. Duration should be decided by the yoga therapists. There are followings: -

1. Kunjala with lukewarm water
2. Surya Namaskara
3. Savasana
4. Kapalabhati & Pranayama

D) PATHYA & APATHYA

- i. Fruits, rice, vegetables and Yava.
- ii. Swasthavritta conduction and maintaining hygienic conditions.
- iii. Avoidance of Viruddha Ahara & Mithya Vihara.
- iv. Vegadharana need to be avoided.
- v. Should avoid meat, oil, sours foods and curd.

CONCLUSION

According to Ayurveda, Vicharchika is Rakta Pradoshaja. Being affected by three Doshas, with Kapha dominating is Vikara. All skin conditions are covered by *Kustha Roga* in Ayurveda. The

two forms of *Kustha Roga* identified by Ayurveda are *Mahakushta* and *Kshudrakustha*, which are further divided into seven and eleven varieties, respectively. It is categorized as a *Astha Mahagada*. Modern science says that Vicharchika presents clinically as Eczema. Eczema is a type of dermatitis in which the dermis becomes inflamed. Vicharchika is Rakta Pradoshaja Vikara and symptoms of disease considered as characteristics features of eczema as per modern science. Kapha Dosha vitiation is major pathological event along with Rakta Vikara. Skin edema, itching, redness, crusting, blistering and dryness are major symptoms of disease. Herbs, Ayurveda formulations for oral use and topical formulations like Lepa and Panchkarma therapy suggested for disease management. Amongst the above mentioned approaches the Lepa (topical applications of cream) is very effective since it imparts long lasting effect at localized level. Similarly amongst the Panchkarma therapies Virechana Karma gives good response in Vicharchika.

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Abstract:

Artificial intelligence refers to the capacity of a digital computer or a robot under computer control to carry out actions often associated with sentient entities. The phrase is commonly used to describe the endeavour of creating artificial intelligence systems that include human-like cognitive functions, like reasoning, meaning-finding, generalization, and experience-based learning. The year 2022 saw the widespread adoption of Generative Pre-Training Transformer applications, which propelled AI into the mainstream. The most often used programs are ChatGPT and OpenAI's DALL-E text-to-image converter. The majority of customers associated ChatGPT with artificial intelligence because of its pervasive attraction.

Key words : Artificial Intelligence , Human , robotics , electronic , machines

Introduction

Artificial intelligence (AI) is the machine imitation of human intelligence, particularly in computer systems. In simple words the study of creating machines that are capable of doing activities that call for human intelligence, such as speech recognition, language translation, and decision-making, is known as artificial intelligence. According to some definitions, artificial intelligence is the simulation of human intelligence in computers that have been designed to think and act like people. Artificial intelligence has several practical uses, some of which are listed below:

Artificial intelligence (AI) systems typically function by absorbing vast quantities of labeled training data, examining the data for correlations and patterns, and utilizing these patterns to forecast future states. In this way, an image recognition program can learn to recognize and characterize items in photographs by going through millions of examples, or a chatbot fed text examples can learn to create realistic conversations with people. Generative AI algorithms are developing quickly and can produce realistic text, graphics, music, and other media.

Today, the term "AI" describes a wide range of technologies that power many of the services and goods we use every day – from apps that recommend tv shows to chatbots that provide customer support in real time.

The Four Categories of Artificial Intelligence

Researchers need to start developing more sophisticated definitions of intelligence and perhaps consciousness as they work to create increasingly sophisticated artificial intelligence systems. Four categories of artificial intelligence have been identified by researchers in an effort to provide clarification on these ideas.

1. Reactive Machines

The most fundamental form of artificial intelligence is seen in reactive machines. These kind of machines only "react" to what is in front of them at any one time; they are unaware of past events. As

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a result, they are unable to complete tasks outside of their constrained context and can only execute some sophisticated tasks within a very tight scope, such as playing chess.

2. Limited memory machines

Machines with little memory have a limited comprehension of the past. Compared to reactive machines, they are more capable of interacting with their surroundings. Self-driving cars, for instance, employ a kind of limited memory to detect and react to incoming vehicles, change course, and change speed.

3. Theory of mind machines

"Theory of mind" machines are an example of an early artificial general intelligence. These kinds of machines would be able to comprehend other living things in the world in addition to being able to produce representations of it. This reality has yet to come to pass as of right now.

4. Self-aware machines

The most advanced artificial intelligence (AI) that exists theoretically is that of machines that are aware of themselves and the world around them. When most people discuss reaching AGI, they mean something like this. This is a far-off reality right now.

Artificial Intelligence includes

- Learning. This aspect of AI programming focuses on acquiring data and creating rules for how to turn it into actionable information. The rules, which are called algorithms, provide computing devices with step-by-step instructions for how to complete a specific task.
- Reasoning. This aspect of AI programming focuses on choosing the right algorithm to reach a desired outcome.
- Self-correction. This aspect of AI programming is designed to continually fine-tune algorithms and ensure they provide the most accurate results possible.
- Creativity. This aspect of AI uses neural networks, rules-based systems, statistical methods and other AI techniques to generate new images, new text, new music and new ideas.

Uses of AI

1. **Gaming:** In strategic games like Chess the machine is programmed such that it can generate its moves and also study the moves of its opponents and decide which move to be made next.
2. **Speech Recognition:** Some systems can recognize the language spoken by humans and respond in the same way by grasping the accent, grammar, etc. These types of speech recognition systems are present in our smartphones and home devices. Some examples of speech recognition systems are Google Now, Google Assistant, and Amazon Alexa.
3. **Handwriting Recognition:** Handwriting Text Recognition system in the machine enables it to read handwriting and transform into editable text.
4. **Robotics:** Robotics is a branch of science and engineering which deals with construction, design, and programming of robots. Robots are the most sophisticated and complex inventions of humans to date. Robots are capable of carrying out a series of a complex tasks. They are efficient in their tasks as they can multitask as well and save time doing so. They have vast memory space and can adjust to their environment.

There is discussion on whether AI is a good thing or a bad thing given its progress. There are several reasons why AI can be both a benefit and a curse.

AI is significant because it has the ability to alter our way of living, working, and playing. It has been successfully applied in business to automate human labor-intensive processes like fraud detection,

lead generating, quality control, and customer support. AI is far more efficient than humans at a lot of tasks. Especially when it comes to tedious, meticulous jobs like going over a lot of legal documents and making sure all the appropriate fields are filled in correctly,

AI systems frequently finish tasks fast and with few mistakes. AI can provide businesses with previously unknown insights into their operations due to the vast amounts of data it can handle. The fast growing number of generative AI tools will be crucial for a variety of industries, including marketing, education, and product creation.

AI as a Boon:

1. **Availability:** Unlike humans, machines don't need to be refreshed and can work for extended periods of time. They are able to complete jobs, labor nonstop, and generate high-quality results.
2. **Daily Usage:** A smartphone is currently the device that we use the most in our daily lives, both consciously and unconsciously utilizing the advantages of artificial intelligence. A few instances of how AI is employed in our daily lives are the speech recognition feature in our smartphones' search engines, GPS for navigation, and the face, fingerprint, and fingerprint recognition features for security.
3. **Completing Difficult Tasks:** Completing laborious tasks takes time for a human. AI systems are designed to carry out challenging jobs. Compared to humans, machines can work faster and do numerous tasks at the same time.
4. **Virtual Assistants:** By facilitating communication between several users, virtual assistants reduce the need for human labour. Machines operate more rationally and effectively because they lack emotions, which helps them make the best decisions.

AI as a Bane:

1. **High Cost:** The use of AI increases productivity and yields efficient outcomes, but the process comes at a high cost because the machines are highly sophisticated and require intricate training. Additionally, machines need routine maintenance at some point, which raises the associated costs.
2. **Lack of Experience:** People who lack experience rely on their past experiences to guide their actions in the future. Machines follow the algorithm designed specifically for their operation. The distinction between robots and humans is that the former do not respond to their surroundings.
3. **Fear of Unemployment:** A major worry in today's global economy is if AI may eventually replace human labour entirely. Businesses are implementing AI-based solutions to increase productivity, which are displacing human labour and increasing our reliance on robots. This would result in a significant loss of thinking capacity and spark originality and thoughts.

Conclusion

AI will grow further in the future and shape our lives. It has its advantages and disadvantages. It has the factors that support it be a boon or bane. But still, there is a debate whether it will be a boon or a bane. We'll come to know in the future whether it proves to be boon or bane.

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Abstract:

Entering in the organization is like stepping into altogether a new world. At first, everything seems strange and unheard but as the time passes one can understand the concept and working of the organization and thereby develop professional relationship. The study on Welfare facilities at public sector was an exposure to corporate managerial function. I started with the review of the literature on human resource management from various books and websites. And then designed the following strategy to do my work in an effective manner. To check the satisfaction of employees regarding the welfare facilities provided to employees on various parameters and to find out the satisfaction levels of employees. It deal with the welfare benefits provided to employees, finding out the satisfaction level of employees by doing a satisfaction survey by means of mailed questionnaire and personal interview and then dealing with various suggestions given by employees to improve upon facilities. There is a study on theory of employee benefits and welfare activities done to employees and significant.

Keywords: Human Resource Management, Employee satisfaction, Quality of work Life, Motivation, Employee Welfare

Introduction:

After employees have been hired, trained, remunerated, they need to be retained and maintained to serve the organization better. Welfare facilities are designed to take care of wellbeing of the employees-they do not generally result in any monetary benefits to the employees. Nor are these facilities provided by employers alone. Welfare means faring or doing well. It is a comprehensive term and refers to the physical, mental, moral and emotional wellbeing of an individual. Further, the term welfare is a relative concept, relative in the time and space. It therefore varies from time to time, from region to region and country to country.

According to Balfour (2013), Welfare of employee is refers employer's effort to improve the working condition for employees. It includes all matters affecting the employee productivity.

According to N.M Joshi (2011), Employee welfare describes the employer's effort to improve the employee's efficiency by providing various work benefits to improve satisfaction.

Labor welfare, also referred to as betterment work for employees, relates to taking care if the wellbeing of workers by employers, trade unions and governmental and non – governmental agencies. "Labor welfare is a term which must necessarily be elastic, bearing a somewhat different interpretation in one country from another, according to the different social customs, the degree of industrialization and educational level of workers.

However the ILD defined labor welfare as a term which is understood to include such services, facilities and amenities as may be established in or in the vicinity of undertaking to unable the persons employed in them to perform their work in healthy, on genial surroundings and to provide them with amenities conducive too good health and high morale.

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Labor welfare has two aspects –negative and positive. On the negative side labor welfare is concerned with counteracting the baneful effect of the large scale industrial system of production especially capitalistic so far as INDIA is concerned on the personal/family and social life of the worker.

On the positive side, it deals with the provision of opportunity for the worker and his /her family for a good life as understood in its most comprehensive sense.

Labor welfare is justified for several reasons. It is desirable to recollect the services of a typical worker in this context. The industrial worker is indeed a soldier safeguarding the social and economic factors of the industrial economy, and his/her actions and interaction within the industrial framework will have a great impact and influence on industrial development.

The social and economic aspects of the life of a worker have a direct influence on the social and economic development of the nation. There is every need to take extra care of the worker to provide both statutory and non-statutory facilities to him/her.

Another argument in favor of employee welfare is that the facilities help motivate and retain employees. Most welfare facilities are hygiene factors which according to HERZBERG create dissatisfaction if not provided. Removal of dissatisfaction, place an employee in a favourable mood, provides satisfaction, and then motivation will take place.

Welfare facilities besides removing dissatisfaction help develop loyalty in workers towards the organization. Welfare facilities tend to make the worker happy, cheerful and confident looking.

A further argument in favor of welfare is that a reputation for showing concern helps improve the local image of the company as a good employer and thus assist in recruitment. Welfare may not directly increase productivity, but it may add to general feeling of satisfaction with the company and cut down labor turn over.

The argument that the provision of welfare services increase the loyalty and motivation of employees has long been exploded. If welfare services are used at all, they are taken for granted. Gratitude is not a prime motivating factor. In fact, gratitude is a thing of the past remembered for a short time and forgotten soon after.

Content:

The enhancement of employee's motivation to work is one of the major challenges facing the human resource management system of a firm.

There is a pressing need to integrate these theories and formulate a unified motivational framework for management practices. To achieve this manager need to focus on the three key areas of responsibility, performance definition, performance facilitation, performance encouragement. These deals with setting objectives, providing resources & providing timely rewards that are valued by employees.

The use of incentives assumes that people's actions are related to their skills and ability to achieve important longer-run goals. Even though many organizations, by choice, or tradition or contract, allocate rewards on non-performance criteria, rewards should be regarded as a “pay-off” for performance. Rewards can be of two types-primary, which satisfy basic physiological needs and secondary, which are learned through experience. Primary rewards are generally not relevant to job motivation

In Short, management may look to many non-monetary incentives for effective motivation of those who are most need-conscious. In many cases; these non-monetary incentives might stimulate even more attention than the monetary ones.

Recognition is fast becoming its own reward. Corporate India is finally beginning to believe that money-what FREDERICK HERZBERG called the Hygiene factor-only denotes the price of an employee. For value; companies must intuitionism non-monetary rewards and recognition systems to motivate their employees. Recognition is a basic requirement for creating a positive work culture in the organization. It enthuses employees and encourages them to innovate products and processes.

According to Jack T. Frang (2012) satisfaction is provide base to individuals to improve their work efficiency which helps to enhance level of living standard through welfare.

Management is concerned with attracting and keeping employees, whose performance meets at least minimum levels of acceptability: and at keeping ‘absenteeism and turnover’ to tolerable levels. The provision of ‘benefits’ and ‘services’ can be and are important in maintaining the employees and reducing or keeping turnover and absenteeism low.

It is important to note that ‘financial’ incentives are paid to specific employees whose work is above standards. Employees’ benefits and services on the other hand are available to employees based on their membership in the organization. The purpose of such benefits and services is to retain people in the organization and not to stimulate them to greater efforts and higher performance. They foster loyalty and act as a security base for the worker.

Organization also provide a wealth of services that employees find desirable, these services are usually provided by the organization at no cost to the employees or at a significant reduction from what might have to be paid without the organizations support.

These services are provided at the discretion of the management and are generally of some concern to trade unions when they engage in collective bargaining with the employees. These services include:

1. Services related to the work performed, including subsidies for the purchase and upkeep of work clothing and uniforms and of the various types of tools used by a worker in the course of his work.
2. Eating Facilities, which include the provision of company restaurant cafeteria, canteens, lunchrooms, vending machines and fully or partially subsidized food.
3. Transportation facility, Including parking lots and bus services.
4. Child Care facilities, Comprising nurseries and day care centres for children.
5. Housing facilities, including company-owned housing projects and subsidized housing.
6. Financial and legal services, including sponsoring of loans funds, credit unions, income-tax services, legal aids, saving plans and group insurance plans.
7. Purchasing services such as company-operated stores and discounts on company products and services.
8. Recreational , social and cultural programme, including athletics, beauty parlors, social clubs, and recreational areas parties, picnics, libraries, and reading rooms.
9. Educational services, which include sponsorship for off duty courses, educational leave, tuition fee refunds, and scholarship for employees and their children.
10. Medical services, which include plant infirmaries, clinics and hospitals, counselling services and referrals to community social services.
11. Outplacement services, which include contacts with other employers in the areas, help in writing up resumes and secretarial assistances.
12. Flexi times, the workers are permitted to build up their flexible work day around a core of mid-day hours.
13. Cafeteria one of the recent developments in the fields has been the formulation of cafeteria compensation concept or what is known as the ‘smorgasbord’. Depending upon the age, their educational and income levels, their styles and other forms of preference, different categories of employees need and demand different combination of benefits and services.

Since Adam and eve were directed in the Garden of Eden to their livelihood by “the sweat if the brow”, man has found labour essential of his own welfare. The individual who works with one organization for his livelihood harbours some expectations from the management such as that-

- (1) Certain personal goods and objectives will be fulfilled as a result of his affiliations with the organization. Wages for securing food, clothing and shelter normally are his expectation,

besides much other additional expectation. This expectation is universally true, for people who work to attain own personal, economic social and psychological objectives. The pursuit of these goals through work is both practical and traditional.

- (2) He has the right to choose to accept a specific job with a particular organization because such a company will provide him, higher level of fulfilment of his needs and expectations.
- (3) The organization employing the skill and services Individuals and the organization who get more than they want or expect from each other may be are dissatisfied as those who get less than they expect and worker has a responsibility to fulfil his reasonable goals and needs.
The workers sell his efforts and knowledge in exchange of certain monetary and non-monetary compensation. It does under an employment agreement or a contract. Such agreement clearly states that each expects of the other when they work together in a organization.

The results of the study are worth nothing it includes-

- (a) When the expectation of the employing match those of new employee, the employ will be more productive, he will be more satisfied with his work and he will tend to stay with the organization for a longer period of time than if there were a number off mismatches in the expectations of the two.
- (b) Individuals and organizations who get more than they want or expect from each other may be as dissatisfied as those who get less than they expect.
- (c) The more clearly individual employees understand their own expectations the more likely they are to reach a good match in their expectation of each other.

The fact of the matter is that now employers do realize responsibility in fulfilling the workers expectations. When workers do not have their needs satisfied, they may leave the organization more often.

So, the main objective of this project is to study the various services and non- monetary benefits provided to employees and to know the extent of satisfaction of the employees regarding these facilities. Another objective is to suggest measures to improve these services and hence increase the employee's satisfaction and commitment towards the organization.

The objective of the study can be accomplished by conducting a systematic research. Research is based on either population enquiry or sample enquiry. The researcher following one method over other depending on size of universe. The function of the research design is to provide for the collection of relevant evidences with minimal expenditure of effort, time and money. This work is related with the various welfare facilities given to the employees and hence to find out the satisfaction level of employees.

Following steps were taken for the research:-

Step 1: Study the various facilities given to the employees in the company and township

Step 2: Collection of data regarding the satisfaction of the employees.

Step 3: Analysis and Interpretation of data

Step 4: Getting various suggestions to improve upon facilities

Data collection is an integral part of research. Data can be obtained from two important sources.

For the subject data was collected as under: Primary Data was gathered through Interview and a questionnaire prepared for the study of satisfaction level of employees towards welfare facilities. And Secondary data was gathered from different books, journals and company magazines and through Internet.

There are total 874 employees are consider for study in public sector enterprises working on different grades. All employees except some local employees are living in the township and availing various facilities provided by the company.

The study including executive and non-executive both. The total employees were divided into 03 strata i.e from **S1 – S7, E1 –E4 and E5 – E9**

For the purpose of collection of data a questionnaire was developed to collect the individual response of data collection was mailed questionnaire as well as personal interview. The questionnaire was made of 06 following facilities; Education, Library, Medical, Club, Shopping complex and Housing facilities.

Open ended and close question as well as multiple choice questions were used in the questionnaire.

THE MEAN VALUES ARE SHOWN HERE

FACILITIES PROVIDED/ STRATIFIED CLASS	HOUSING	MEDICAL	CLUB	SHOPPING COMPLEX	SCHOOL	LIBRARY
S0-S7	72	71	73	69	62	70
E1-E4	72	71	72	66.5	65	72.6
E5-E9	75	79	77	71	72	71

RESULT	BAND WIDTH
HIGHLY SATISFIED	81-100
SATISFIED	61-80
NEUTRAL	41-60
DISSATISFIED	21-40
HIGHLY DISSATISFIED	0-20

The figures for various facilities for the grade E1-E4 lie between 61-80. Facilities of Library is 72.6, Education is 65, Medical is 71, Club is 72, Shopping Complex is 66.5 and Housing is 72. Hence the people falling in this grade are satisfied by the welfare facilities provided by the company.

The figures for the grade S0-S7 depicts that the people lying in this group are between 61-80. Employee of this grade is satisfied by the facilities provided in the township. Library is 70, Education is 62, Medical is 71, Club is 73, Shopping Complex is 69 and Housing is 72.

The figures for the grade E5-E9 show that they are also satisfied by the facilities provided in the township as the figures lie between 61-80. Library is 71, Education is 72, Medical is 79, Club is 77, Shopping Complex is 71 and Housing is 75.

The table shows that as the grade increases from S0-E9, people are more satisfied with the various welfare facilities than people at lower rank. This shows as the grade increases satisfaction level also increases.

Public sector enterprises has provided necessary facilities to its employees as-Education facility for children, Library facility, Shopping complex, Hospital, Medial Store, Transport Facility, Security facility, Sports ground, Club building , Well established gardens in developing stage, Meditation Centre, Canteen facility etc.

It has fulfilled all the necessary standards by giving proper physiological, sociological, safety, and security needs. It is the way by which employees get satisfied and they trust the organization.

It is evident that various welfare facilities provided to the employees in Public Sector Enterprises are well planned and well maintained. However, there is still a need for improvement in HR related

function and work upon the suggestions given by various employees to make them fully satisfied and motivated to improve their productivity.

It is observed that these facilities are one of the crucial motivation tools which raise the productivity skills of the employees which could be of great help for an organization.

Hence the employees are motivated by the good facilities and working condition, they do their work with great zeal, initiative and enthusiasm and I think public sector enterprises has a great ability to keep and maintain their employee's morale and satisfaction level high.

There are some limitation of this study are as follows:

- Generally employees were very much cooperative in nature but sometimes they were totally negative in giving the information.
- Some employees were reluctant to disclose their personal views. Only after letting they know that this survey was for their benefit, and then only they responded. Some employees were not able to answer due to certain confusion.
- The biggest limitation was time constraint.
- Busy schedule of the employees of higher level was also a great hindrance.
- Due to work stress worker were not giving good response as they have shortage of time with them.
- Most of the workers were hesitating in sharing their opinions because they are afraid of their heads.
- The sample size may not be representative of whole population.

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Abstract

This study investigates whether consumer behaviour and attitude towards organic food products. People are becoming more aware of the dangerous effects that chemicals in food can have. More and more people are buying organic food. It is necessary to study what makes people choose organic food. Some common reasons why people buy organic foods are because they care about the environment, care about their health, want to support a certain lifestyle, value high-quality products, and follow what others think is right. This study aims to find out if people want to buy organic food. This research predicts how likely people are to buy organic food based on factors like caring for the environment, caring for their health, their lifestyle, how good the product is, and what others think. The study found that when people buy organic foods, they are usually motivated by wanting high-quality products, caring about the environment, wanting to be healthy, or wanting to follow a certain lifestyle.

Introduction

The term developed from the original meaning which referred literally to going to market with goods for sale. From a sales process engineering perspective marketing is “a set of processes that are interconnected and interdependent with other functions of business aim at achieving customer interest and satisfaction”. Marketing is defined by the American Marketing Association as “the activity, set of institutions, and processes for creating, communicating, the delivering and exchanging offerings that have value for customers, clients, partners and society at large”.

The “Marketing Concept” proposes that to complete its organizational objectives an organization should anticipate the needs and wants of potential consumer and satisfy them more effectively than its competitors. This concept originated from Adam Smith book the Wealth of Nations but would not become widely used until nearly 200 years later.

Objectives of Marketing

Marketing majorly focuses on achieving consumer satisfaction and maximizing profits.

- Customer Satisfaction
- Ensure Profitability
- Building Organisational Goodwill
- Create Demand
- Increase Sales Volume
- Enhance Product Quality
- Create Time and Place Utility

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Functions of Marketing

Marketing is not just selling of goods and services to the customer; it means a lot more than that. It starts with the study of the potential market, to product development, to market share capturing, to maintain cordial relations with the customers. Following multiple operations of marketing helps the business to accomplish long-term goals:

- ❖ Market Research
- ❖ Market Planning
- ❖ Product Design and Development
- ❖ Buying and Assembling
- ❖ Product Standardization
- ❖ Packaging
- ❖ Branding
- ❖ Pricing of the product
- ❖ Promotion of the Product
- ❖ Warehousing and Storage
- ❖ Selling and Distribution
- ❖ Transportation
- ❖ Customer Support Services

Consumer Behaviour and Attitude

- Consumer attitude may be defined as a feeling of favourableness that an individual has towards an object. As we all know that an individual with a positive attitude is more likely to buy a product and this result in the possibility of liking or disliking a product.
- Consumer attitude basically comprises of beliefs towards, feelings towards and behavioural intentions towards some objects.
- Beliefs
- Affect (Feeling)
- Behavioural Intension

Organic Foods

- ❖ The word “organic” refers to the way formers grow and process agriculture product, such as fruits, vegetables, grains, diary product and meat. Organic farming practices are designed to encourage soil and water conservation and reduce pollution. Farmer who grow organic produce don’t use conventional methods to fertilize and control and weeds. Examples of organic forming practices include using natural fertilizers to feed soil and plants and using crop rotation or to manage weeds.
- ❖ Organic food is food produced in a way that complies with organic standards set by national government and international organisation.

Benefits of Organic Foods

- Organic food provide a variety of benefits. Some studied so that organic food have more beneficial nutritious, such as antioxidant that their conventionally grown counterparts. In addition, people with allergies of food, chemicals are preservatives often find their symptoms lesson or go away when they eat only organic foods.
- Organic food contains fewer pesticides.
- Organic food is often fresher.
- Organic farming is better for the environment.
- Organic food is GMO free.

Statement of the problem

There is a wide range of consumer goods that comes under umbrella of organic products. It can be vegetables, fruits, cereals, pulses, sugar, tea, coffee, jam, pickle, chutney, edible oil, etc. Picture provided by different organic products produces available in market though there were many researchers has already taken place on this topic but no research has been done for the factors affecting buying behaviour of consumers. So, this study Emphasize on factors affecting buying behaviour of consumer towards organic food products.

Scope of the Study

The economic of many developing countries or dependent on the export of a relatively smaller number of mostly agricultural commodities. Several of those commodities example bananas and sugar or likely to face further market liberalisation pressure in the near future. As a result, diversification of agricultural production is more than ever of almost importance. Diversification towards high value crops can help to reduce the vulnerability of many agricultural producers in those countries especially for resource poor and small farmers.

Objectives of the study

- To study about awareness and knowledge levels of consumers towards organic food products.
- To study on consumers buying behaviour towards organic food products.
- To provide suggestions to enhance the purchase of organic products among the consumers of kumbakonam.

Research Methodology

The research has depended on the primary data. Some secondary data was also used substantiate for the project. The primary sources of the data have been collected by questionnaire method. A research design or model indicated a plan of action to be carried out in the connection with the proposed research work.

Sampling Design

There are two broad categories of sampling viz., non-probability sampling and probability sampling. The researcher selects the non-probability sampling. In the non-probability sampling the researcher select the convenience sampling. Sample size of overall analysis is 50 respondents in and around kumbakonam town.

Limitations of the study

- ❖ The study is confined to finite period.
- ❖ The study is an opinion survey, caution may have to be exercised while extending the result to other areas.
- ❖ The result fully depends on the information given by the respondents which may be biased.

History of organic food

- During 1950's and 1960's the ever-increasing population of India and several natural calamities lead to a severe food scarcity in India. As a result, government was forced to import food grains from foreign countries.
- According to the international fund for agricultural and development (IFAD) about 2.5 million hectares of land was under organic farming in India in 2004. Further, there are over 15,000 certified organic farms in India. India is one of the most important suppliers of organic food to the developed nations. Now the organic movement has again started in India.

Review of literature

Ranjith Kumar (2006), “English study revealed that the satisfaction level of respondents about the organic foods. In the study the various reasons for preparing organic food products was health and taste of the food.”

Gupta (2009) The quality food products one of the most important parameters for food product decision. People rated various parameters differently for different product group”.

Chandrasekar (2014) advertisement of organic food products and better taste food influence the purchase organic food products. He also found out that price of organic food was a major reason for low demand.

Mehra and Ratna (2014) proposed six factors impacting attitude towards organic products like perception towards organic food health conscious product information value for money accessibility and trust. They focus upon consumers preference towards food taste as well as nutritious and price of organic product.

Ramesh and Divya (2015) initiated that the major object for customers to buy organic food in India. Expectation of healthy lifestyle and an environment friendly means of production.

DATA ANALYSIS AND RESULTS

TABLE NO.1

EMPLOYMENT STATUS OF THE RESPONDENTS

S.No.	Employment Status	No. of the Respondents	Percentage
1	Government Sector	2	5
2	Private Sector	25	60
3	Self-Employees	12	28
4	Others	3	7
	Total	42	100

Source: Primary Data

Interpretation

It shows that 60% of the respondents employed in private sector, 28% of the respondents are self-employed, 17% of the respondents are other employees, 5% of the respondents are government sector employees.

TABLE NO.2

FOOD SHOPING

S.No.	Source	No. of the Respondents	Percentage
1	Husband / Father	27	54
2	Wife / Mother	13	26
	Total	40	80

Source: Primary Data

Interpretation

It shows 54% of the respondents are Husband / Father, doing food shopping in their house and remaining 26% of the respondents are Wife / Mother.

TABLE NO.3

HIGH NUTRITIONAL VALUE OF ORGANIC PRODUCTS

S.No.	Source	No. of the Respondents	Percentage
1	Strongly agree	36	72
2	Agree	7	14
	Total	43	86

Source : Primary Data

Interpretation

It shows that 72% of the respondents are strongly agree in high nutritional value of organic products. 14% of the respondents are agree in high nutritional value of organic products.

TABLE NO.4**SUPPORT ORGANIC MOVEMENT SUSTAINABILITY**

S.No	Source	No. of the Respondents	Percentage
1	Strongly agree	23	46
2	Agree	16	32
	Total	39	78

Source : Primary Data

Interpretation

It shows that 46% of the respondents are strongly agree with support organic movement sustainability. 32% of the respondents are agree with support movement sustainability.

TABLE NO.5**GENDER OF THE RESPONDENTS**

S.No.	Gender	No. of the Respondents	Percentage
1	Male	19	38
2	Female	31	62
	Total	50	100

Source : Primary Data

Interpretation

It shows that 62% of respondents are Female, and 46% of respondents are Male. It implies that majority of the respondents are Female.

TABLE NO. 6**SAVING RESOURCES FOR NEXT GENERATIONS**

S.No.	Source	No. of the Respondents	Percentage
1	Strongly agree	43	86
2	Agree	7	14
	Total	50	100

Source : Primary Data

Interpretation

It shows that 86% of the respondents are strongly agree with saving resources for next generations and remaining, 14% of the respondents are agree with saving resources for next generations. It implies that majority of the respondents are strongly agree with saving resources for next generations.

FINDINGS, SUGGESTIONS AND CONCLUSION**Findings of the study**

- 60% of the respondents employed in private sector.
- 54% of the respondents are male, doing on responsible food shopping in their house.
- 72% of the respondents select / choose to nutritional value of organic product.
- 46% of the respondents are strongly agree with support organic movement sustainability.
- 62% of the respondents are female.

- 86% of the respondents are strongly agree with saving resources for next generations.

SUGGESTIONS

Consumers perceive organic food to be safer than conventional food. The study suggests to provide additional information about the organic food products to help to increase the consumers to make the purchases. The study advises to build a strong online presence as on organic brand, it will be able to reach out to a large consumer.

CONCLUSION

As the survey made on consumer attitude and satisfaction the overall facts taking into consideration and comparing the competitors. Organic food is the leading position in the kumbakonam Town.

This study has revealed that range of products. By the producers of the organic food segment are satisfactory. The consumer while deciding about buying a organic product sees his need, purchasing power and price of the organic products. It was found the consumer prefer organic product.

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Abstract:

India's G20 Presidency faces significant challenges, including a global economic downturn, geopolitical instability, and various pressing issues such as the COVID-19 pandemic, the Ukraine crisis, supply chain disruptions, cost of living concerns, and the impacts of climate change. Guided by the motto "Vasudhaiva Kutumbakam" (One Earth, One Family, One Future), India aims for a sustainable and globally interconnected growth strategy. The G20, as the premier forum for international economic cooperation, underscores the shared commitment of both established and emerging nations to collaboratively tackle global economic challenges. G20 Sherpa Amitabh Kant highlights the key challenge of reaching a consensus on the agenda during India's Presidency. Despite geopolitical hurdles, India remains committed to constructive dialogue and diplomacy on the G20 platform, as demonstrated in addressing Russia's aggression against Ukraine ahead of the Bali Summit. Minister of External Affairs S. Jaishankar emphasizes India's persistent and successful advocacy, citing the support for the UN General Assembly resolution on March 2, 2022. India seeks to leverage this momentum by fostering collaboration between Russia and the West on non-geopolitical issues, using the G20 as a cooperative platform to reaffirm commitments and encourage meaningful dialogue.

Keywords: *G20 Presidency, Vasudhaiva Kutumbakam, Geopolitical Challenges, Global Economic Cooperation, Russia-Ukraine Crisis.*

Introduction

In the dynamic landscape of international economic cooperation, the Group of Twenty (G-20) has emerged as a key forum for addressing global challenges. Among its diverse members, India stands out as a significant player, wielding influence in shaping the discussions and policies that navigate the intricate web of global economic complexities. India's G20 Presidency is marked by the inheritance of geopolitical uncertainties and a global economic downturn. The challenges on the horizon include the COVID-19 pandemic, the Ukraine conflict, disruptions in supply chains, cost-of-living crises, and the impacts of climate change. Under the theme "Vasudhaiva Kutumbakam" or "One Earth, One Family, One Future," India aims for a comprehensive and sustainable growth strategy aligned with global preservation.

The G20, representing 20 major economies along with 9 guest nations and 14 multilateral organizations, serves as a crucial platform for international economic cooperation and policy guidance. Prime Minister Narendra Modi envisions a "People's G20" for the post-pandemic world, emphasizing inclusivity, ambition, action-oriented approaches, and resoluteness. The Indian Presidency has outlined priorities, focusing on addressing macroeconomic impacts related to food and energy insecurity, climate change, strengthening Multilateral Development Banks (MDBs), financing inclusivity and sustainable growth, digital public infrastructure, and climate financing. Challenges like global inflation, food and energy poverty, and the macroeconomic effects of climate change must be tackled through innovative approaches to funding demands via MDBs. Governance reforms at the IMF and the World Bank are essential, and India aims to advocate for these changes. The Presidency emphasizes

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a people-centric strategy for financial inclusion, involving the redistribution of existing resources. India, despite representing the Global South, faces difficulties in setting its agenda due to the pandemic's economic impact. The country, leveraging its expertise in public health, medicines, sustainable development, and digital inclusion, aims to bridge the gap between developing and developed economies.

India's 'Vaccine Maitri' initiative during the pandemic highlights its commitment to global health. The supply chain disruptions caused by the Russia-Ukraine conflict, particularly in food and fertilizers, pose a significant policy concern. The conflict has restricted the export of crucial fertilizers, impacting global food security. India, heavily reliant on imported fertilizers, faces challenges in securing nitrogen, phosphorus, and potash supplies. The need for nitrogen-based fertilizers in the European Union and India further complicates the situation. India must navigate these complexities to ensure global food security and address the pressing issue of world hunger.

From Non-Aligned to all Aligned:

In the initial decades following India's independence, the non-alignment policy played a pivotal role in shaping the country's foreign relations amid the Cold War between the United States and the USSR. This approach evolved into a comprehensive movement and discussion platform known as the Non-Aligned Movement in 1961. However, India has now adopted a "multi-aligned" or "all-aligned" strategy, showcasing its ability to maintain an impartial stance. This is evident through its active participation in various international forums, including BRICS, G7, SCO, G20, and the Quad. India's strategic importance is underscored by the keen interest of major powers seeking collaboration, while simultaneously setting an example for smaller nations. Embracing multi-alignment aligns with India's objectives and aligns the country with the principles of "Vasudhaiva Kutumbakam."

A time of diplomacy:

In a significant diplomatic exchange last year during the Shanghai Cooperation Organization summit in Samarkand, Uzbekistan, Prime Minister Narendra Modi, while conversing with Russian President Vladimir Putin, emphasized the centrality of diplomacy and dialogue in conflict resolution. He remarked, "I recognize that the current era does not favor war. We have engaged in numerous discussions on this matter over the phone, highlighting the importance of democracy, diplomacy, and dialogue in shaping global affairs." Following this statement, several world leaders, including French President Emmanuel Macron, commended Prime Minister Modi for his diplomatic approach.

Here are some duties associated with the G20 presidency:

1. The G20 presidency guides the G20 agenda for a year and hosts the leaders' summit.
2. Despite lacking formal power, the presidency holds sway over the G20's agenda, offering India an opportunity to shape discussions in its preferred direction and emerge as a leader in addressing pressing global issues.
3. The bloc operates without a permanent secretariat, and the Troika, consisting of the previous, current, and incoming presidencies, supports the current presidency. During India's term, the Troika included Indonesia, India, and Brazil, respectively.
4. Former foreign secretary Harish V Shringla assumes the role of India's chief G20 Coordinator at the secretariat level. The G20 Secretariat is responsible for implementing overall policy decisions and arrangements necessary for steering India's presidency.
5. The G20 operates with two parallel tracks: the Finance Track, led by finance ministers and central bank governors, and the Sherpas, who oversee negotiations and coordinate substantive work throughout the year. Additionally, 10 Engagement Groups bring together various stakeholders from civil societies, parliamentarians, think tanks, women, youth, labor, businesses, and researchers of G20 countries.

6. India's G20 Sherpa is former IAS official Amitabh Kant, who served as the head of NITI Aayog for six years.
7. Emphasizing PM Modi's vision for the presidency, Amitabh Kant states, "India believes that the G20 countries must unite and collaborate. While the agenda and priorities for the Presidency are still evolving, India is committed to addressing issues of critical global importance."
8. In alignment with the spirit of Vasudhaiva Kutumbakam, India aims to find practical global solutions for the well-being of all, according to the central government.
9. Under India's leadership, G20 nations, led by Amitabh Kant, seek consensus on major challenges such as a slowing global economy, a debt crisis affecting nearly 70 countries, the impact of COVID-19 pushing millions back into poverty, and the existential climate crisis. India aims to guide the G20 in providing sufficient finance to the 'Global South,' in line with principles of climate justice.
10. Another key agenda item is the reform of institutions like the World Bank, the International Monetary Fund, and the World Trade Organization. The objective is to make these institutions more responsive to the needs and aspirations of developing economies.

The collective leadership

Amitabh Kant, serving as the G20 Sherpa, emphasizes that the primary challenge for India's G20 Presidency lies in reaching a consensus on the G20 agenda. Despite geopolitical challenges, India remains committed to constructive dialogue and diplomacy, as demonstrated in addressing Russia's aggression against Ukraine before the Bali Summit. Minister of External Affairs S. Jaishankar notes the increasing success of India's efforts in this regard. The G20, with no permanent secretariat, relies on the Troika—comprising previous, current, and incoming presidencies—for support. India's Chief G20 Coordinator, Harish V Shringla, oversees the implementation of policy decisions during the presidency. India's involvement in various international forums, including BRICS, G7, SCO, G20, and Quad, reflects its multi-aligned strategy. Under the theme "Vasudhaiva Kutumbakam," India aims to address critical global issues and set an example for collaboration. G20 Sherpa Amitabh Kant highlights the opportunity to find consensus on challenges like the global economic slowdown, the debt crisis affecting numerous countries, the impact of COVID-19 on poverty, and the existential climate crisis.

The G20, representing 85% of the world's GDP, 75% of commerce, and nearly two-thirds of the global population, emphasizes ideals of multilateralism, rule-based multilateral commerce, and transparency in international relations. The Bali Summit advocated for WTO reform and reaffirmed the G20's importance as a multilateral organization. Indonesia showcased diplomatic prowess during the Russia-Ukraine conflict, reinforcing the G20's role in international collaboration. The G20 Troika, consisting of India, Indonesia, and Brazil, underscores the Global South's representation. The Bali Summit addressed concerns by channeling the Pandemic Fund, ensuring food and energy security, and enhancing readiness for climate change. The G20 offers an effective global platform for the Global South. In evaluating the G20's impact on political participation, it is noted that non-member state residents, representing one-third of the global population, are not directly represented. The G20's role in promoting international laws and advising global governance organizations is influenced by member countries. The text concludes by suggesting reform ideas to enhance inclusivity and democratic engagement in G20 decision-making, acknowledging the democratic deficit within the current structure.

India's Economic Trajectory:

India's inclusion in the G-20 in 1999 marked a turning point in its economic trajectory. With a burgeoning population and a rapidly expanding economy, India transitioned from an emerging market

to a major global player. The G-20 platform provided India with an opportunity to actively participate in shaping the rules and norms governing the international economic order.

Contributions to Policy Discourse:

One of India's primary roles within the G-20 is its active participation in policy discussions. Whether addressing financial stability, trade imbalances, or climate change, India brings a nuanced perspective that reflects the challenges faced by diverse economies. The country advocates for policies that promote inclusive growth and recognize the varying developmental stages of member nations.

Sustainable Development Goals (SDGs):

India places a strong emphasis on the Sustainable Development Goals (SDGs) within the G-20 framework. With a commitment to eradicating poverty, ensuring gender equality, and fostering sustainable development, India's influence is evident in shaping G-20 initiatives that prioritize long-term economic, social, and environmental sustainability.

Trade and Open Markets:

As a proponent of open and fair-trade practices, India actively engages in G-20 discussions on global trade. The country advocates for a rule-based multilateral trading system that considers the interests of developing nations. India's voice resonates in debates about the need for a level playing field, the reduction of trade barriers, and the promotion of equitable trade policies that benefit all members.

Climate Change Leadership:

India's role in addressing climate change is a testament to its commitment to global environmental sustainability. Within the G-20, India advocates for a balanced approach that aligns climate action with economic growth imperatives. The country emphasizes the principle of common but differentiated responsibilities, urging developed nations to take the lead in combating climate change while supporting the developmental aspirations of emerging economies.

Global Health Initiatives:

The COVID-19 pandemic highlighted the interdependence of nations in facing global health challenges. India, leveraging its pharmaceutical industry, played a pivotal role in supplying vaccines and medical aid worldwide. Within the G-20, India continues to champion cooperative strategies to strengthen global health infrastructure, emphasizing the importance of equitable access to vaccines and healthcare resources.

Conclusion:

This upcoming G-20 Presidency is poised to become the most significant non-UN international event in the post-pandemic era. India, known for hosting influential summits such as NAM and CHOGM in 1983 and the International Solar Alliance Summit in 2018, is gearing up for an inclusive G-20 Presidency. Notably, this presidency will commence during Amritkaal, the 25 years following India's 75th independence anniversary. Alongside this, India holds the UN Security Council presidency in December 2022 and chairs the Shanghai Cooperation Organization (SCO) from September 2022 to September 2023. As the world's largest democracy, the second most populous nation, and the third-largest economy in terms of purchasing power parity, India's G-20 Presidency marks a pivotal moment in global governance. The G20's club-like structure, operating outside conventional institutional pillars, has long faced legitimacy challenges. A decade after the 2008 financial crisis, the forum's problems are compounded by the erosion of group cohesion, exacerbated by the absence of legally enforceable guidelines within the forum.

While organizational fluidity and operational flexibility have been viewed as drawbacks, they also serve as assets. The G20's network qualities have gained prominence as the group has evolved, even as the utility of the traditional club culture diminishes. The expanded membership, indicative of a "stretching out," raises crucial questions about the G20's future role and effectiveness. India's influence in the G-20 extends beyond its economic might; it is a testament to its commitment to collaborative and inclusive global governance. Navigating through an intricate web of challenges, India actively shapes policies that balance economic growth with social and environmental considerations. As a key player in the G-20, India's role underscores the importance of recognizing diverse perspectives in fostering a resilient and sustainable global economic order. India's economic trajectory has undergone a transformative journey since its inclusion in the G-20 in 1999. Transitioning from an emerging market to a major global player, India has actively contributed to shaping international economic norms and policies within the G-20 framework.

India's role within the G-20 extends beyond economic discussions to encompass a diverse range of critical global issues. Through active participation in policy discourse, the country provides a nuanced perspective on matters such as financial stability, trade imbalances, and climate change. India consistently advocates for policies that prioritize inclusive growth and recognize the developmental diversity among member nations. A key focus for India within the G-20 is its commitment to the Sustainable Development Goals (SDGs). The country emphasizes eradicating poverty, ensuring gender equality, and fostering sustainable development, thereby influencing G-20 initiatives that prioritize long-term economic, social, and environmental sustainability. As a proponent of open and fair-trade practices, India plays a vital role in G-20 discussions on global trade. The country advocates for a rule-based multilateral trading system that considers the interests of developing nations, promoting a level playing field, reducing trade barriers, and encouraging equitable trade policies that benefit all members. India's leadership in addressing climate change within the G-20 reflects its commitment to global environmental sustainability. The country advocates for a balanced approach that aligns climate action with economic growth imperatives, emphasizing the principle of common but differentiated responsibilities. India calls on developed nations to take the lead in combating climate change while supporting the developmental aspirations of emerging economies.

The COVID-19 pandemic underscored the interconnectedness of nations in facing global health challenges. Leveraging its pharmaceutical industry, India played a pivotal role in supplying vaccines and medical aid globally. Within the G-20, India continues to champion cooperative strategies to strengthen global health infrastructure, emphasizing equitable access to vaccines and healthcare resources. In essence, India's multifaceted contributions to the G-20 exemplify its commitment to fostering global collaboration, sustainability, and inclusive development. As the nation navigates the evolving dynamics of the international stage, its active engagement within the G-20 continues to shape the course of global economic and policy discussions.

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Abstract:

North Arcot District stands second in Tamilnadu in the percentage of Muslim Population. It is a strong hold Muhammadanism Vaniyambadi is the town of Islam. Its habitats are accounted as among the most orthodox of their faith. The Muhammadans of Vaniyambadi are a thriving business community. In the affairs of commerce they prove themselves men of study common sense. In North Arcot district the Muslim population had a considerable effect on various aspects such as Education, religious, social and cultural fields. Most of the Muslim lived in Vellore, Ambur, Pernampet, Melvisharam, Gudiyattam, Umrabad, Tiruppattur and Vaniyambadi. The Mohammedans of North Arcot District were very much interested in Education for example in Melvisharam, the Muhammadans were running a charitable school of the poor Muslim students. In these schools mainly Arabic and other subjects were taught to the pupils with free lost of lodging and boarding. Alhaj Maulana Abdul Wahab founded the great Arabic college (Baqiyatus Salihath) Vellore, as early as 1875. In unrobed the famous Arabic College is run by the Muslims. In Ambur, Gudiyattam, Tirupattur, most of the elementary schools were run by the Muslims Vaniyambadi is located on the river of –bed of Palar. It became the centre of business as well as learning, both religious and secular. The Muhammadans of Vaniyambadi are mostly merchants. Their trade extends also internationally many tanneries were situated around the town. At present the Vaniyambadi Mohammed and Educational society is running many elementary schools for boys and girls.

Key words: *Muhammedans, Muslim, Madrasa-I-Azam, Elementary Education, Religion*

Introduction:

North Arcot District, one of the districts of Modern Tamil nadu with Vellore as its headquarter lies between the districts of Chengalpattu in the East, Dharmapuri in the West, South Arcot in the South, and Chittor of Andra Pradesh in the North. North Arcot District has played a prominent role in the history of South India from time in memorial some areas of this district had been ruled by the several South Indian Dynasties namely, Pallavas, Cholas, Rashtrakutas, Rayas of Vijayanagar and Marathas. It also become a battle ground for several wars, fourth by the British, the French, Sultans of Mysore and Nawabs of Arcot. The North Arcot District carved a niche for itself in the history of Indian Nationalism. The Vellore mutiny of 1806 was the dress rehearsal for the first war of Independence in 1857. North Arcot District has a total area of 12,268 sq.k.s The Muslim dominated areas of this district are Ambur, Melvisharam, Omerabad, Pernambut and Vaniyambadi. Because of the proximity of the Muslim settlement in by-gone days with Arcot, the capital in this part of Tamilnadu have evolved an identical culture and social behaviour. In this region, there are many reputed Islamic Centers of Higher Learning.

After 1921 there were Major administrative changes except few minor change in the portions of this district, on 1st April 1928, the Tiruvannamalai Taluk was divided in to Tiruvannamalai and Chengam Taluk and on 1st December 1928. Certain Villages of the Kangudi Zamindari division were

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transferred from North Arcot to Chittor District. As a result of these changes, towards 1931, the total extent of the district was 4,648 sq.miles, containing ten taluks and the population was 2,266,989. For the most part it is a hilly and mountians country with a pleasing diversity of scenery. The Javadu, Yelegiri and small isolated hillocks of the Eastern Ghats are situated on the northern and Western parts of the district. This district is watered by the river Palar and some other rivers like Cheyyar, Thellary, Kottaru and Ponnai and they sake the district fertile.

Position of Muslim Education in Madras Presidency:

The Education of Muhammedans engaged the attention of government from an community much progress was not effected. The education given in the Yeomiah schools, which were institutions of a religions and charitable character was confined to teaching the pupils merely to read the Koran in a mechanical mannar, on a representation being made of their utter worth lessness in an education point of view Government pointed in the order of October 1863. "The Yeomiah schools should in future be extended from the returns as well as from the educational budget. The Yeomiah's are charitable grants made by the former government. Which have been continued by the British Government and should be charged in the annual budget to the head of charitable allowance. The Madrasa-I-Azam which was established in 1851. By His Highness Azam. Jah Bahadur became a government institution in 1860. This together with another government institution the Mylapore middle school and Harris school, were the only high class in madras specially. Intend for Muhammedans at the end of the period under, review in 1870-71. The total number of Muhammedans boys under Instruction through out the presidency was 4,301. A very large majority of the Muhammedan boys belonged to the primary classes and a Muhammedan student in a college class was quite a rarity. During the fourteen years that the university had been holding its several examinations, only 41 Muhammedans passed the Matriculation examination, five the F.A and none the B.A Examinations. In 1872-73, special action was taken with the object of advancing education among the Muhammedan Community. By desire of His Excellency the Governor Mr.E.B.Powell consulted some Musalman gentleman of intelligence and position as to the moves they thought expedient and obtained from each a Memorandum conveying his views, In 1872 government decided that Elementary schools for Muslamans should be established at the chief centres of Muhammadan population and that in these schools, instruction should be given in Hindustani and English in order to quality the pupils for admission into higher classes of Zillah and provincial schools and other similar institutions.

In this order government stated, that they agreed with colonel Meedonald in regarding it necessary that Muhammadans should be taught separately from Hindus upto a certain point, though when receiving general instruction through English, they would rather gain than lose by being associated with Hindus Elementary schools for Musalmans were established at Raja humndry, Ellore, Masulipatnam, Karnool, Adoni and depah, Arcot, Vellore, Trichirapally, Nagore and other towns. In 1880-81 there were in all 11 government schools and a municipal schools for the special education of Muhammadans of the 11 government schools. 7 were Anglo Vernacular primary, Salem had municipal Anglo-Vercular primary school and Bellary 5 Municipal Hindustani Schools. Aided schools at Ellore. Masulipatnam and Trichirapally and 210 vernacular schools with 6,353 pupils aided on the results system in Malabar other educational facilities afforded to Muhammadans were.

- (a) Arabic and Persian were recognized as classical languages for the Matriculation and Arts Examinations from establishment of the university each with a maximum of marks about one fifth as large again as that allotted to a vernacular language.
- (b) Muhammadans pupils were charged only half fees.
- (c) Originally three scholarships were provided for special encouragement of Muhammedans, one being awarded on the results of the F.A. Examination, and two on the result of the Matriculation. In 1829 four additional scholarships were sanctioned on the results of the matriculation and this system under which seven scholarships were annually awarded, continued for some time.

- (d) A special Deputy Inspector Muhammadan schools were appointed.
- (e) An Elementary Normal schools in Madras for Muhammadans was started.

The Education commission of 3rd February 1882, chapter IX of the report deals with the education of classes requiring special treatment. The education of Muhammedans is dealt with the measures taken in different provinces for the promotions of their education are described fully. Among the recommendations bearing of Muhammedan education we have the following.

1. That indigenous Muhammadan schools liberally encouraged to add purely secular to their courses of Instruction.
2. That the special encouragement of Muhammadans being the kind of education in which that community needs special help, be liberally encouraged.
3. That were necessary graduated system special scholarship for Muhammadans be established.
4. That associations for the promotion of Muhammedan education be encouraged.

From time to time the government of Madras has taken stock of the progress of Muhammedan education and has devised means to further its extension also, will be seen from the following facts and figures. In 1881 there were 22,075 Muhammedan pupils under instruction in all the institutions of the 22,075,26 were in colleges. 98 in high school, 668 in Middle schools, 21237 in primary schools and remaining 46 in special schools. In 1893 the total number of Muhammedan pupils in public instruction alone was 70,488 distributed as follows: 48 Arts colleges, 9 profession colleges, 3,913 secondary schools, 66,023 in primary schools, 155 in training schools and 340 in order special schools. There were in 1881, 102 primary schools were maintained for Muhammedans by government. This number decreased gradually for Mr. Grigg was of opinion that the establishment of separate primary schools for Muhammadans by government had almost everywhere proved an expensive failure writing in 1883 he said "Assurance of employment under the state and the growing demands of western knowledge in trade which can be fairly relied on by friends for the improvement of this race, which numbers nearly 1/5 of the population of the presidency"

In 1893 there were 41 primary schools for Muhammedans maintained by government of which 27 were girls schools. The subject of Muhammedan education received the special attention of the department during the year 1885-86. The madrasa-i- Azam was recognized and had a matriculation class added to it in January 1886. There was a special Deputy Inspector of Muhammedan schools whose range included the District of Krishna, Vellore, Madras, Chinglepet, Bellary, Cuddapah, Anantapur and Kurnool. Sanction was obtained for the appointment of special Deputy Inspector of Mapilla Schools in Malabar. There were also special inspecting school matters employed for Muhammedan schools.

In 1885 Mr. Grigg submitted his views on the proposals of District Board, Malabar for the improvement of Mapilla education. The Anjuman Mufeedi-Ahlai-Islam established in November 1885 has education with the liberal aid of government.

Public institutions for Muhammadans fall in number from 1,091 to 940 the decrease being chiefly under schools of the primary grade while their strength fell from 46,202 to 41,168. The number of private schools also declined from 10,000 to 929, but their strength rose from 31,043 to 33,032. Thus the total number of institutions for the community fell from 2,091 with a strength of 77,245 to 1,869 with 74,200 pupils was 101,537 against 105,851 in the previous year and the percentage pupils to the population of school age was 27.3 to 31.4 in 1899-1900 and 30.2 in 1898-1999.

Education of Muhammadans:

Reference was made in the Administration Report for 1906-1907 to various concessions granted, to Muhammadans with a view to promote the spread of education among them. It is regrettable to note that the results achieved have been quite incommensurate with these efforts on the part of government

one of the causes that retard progress is the apathy of the community itself, and little progress can be expected. Until the Muhammadan community as a whole realizes its responsibility, in this respect.

Elementary Education:

There was a large increase in the number of public elementary schools for Muhammaadans which on the 31st March last stood at 1,018 with 57,311 pupils against 947 with 49,117 pupils on the corresponding date in the previous year.

Both boys and girls schools contributed to the increase. Private institutions also advanced both in number and in strength. The total elementary schools was 88.724 including 15,223 girls, three of the latter being found in primary schools for European girls. Taking all classed and grades of institution together there was an increase in the number of Muhammadan girls under instruction of 1,450.

Secondary Education:

The number of secondary schools for Muhammadans tell from 10 to 73 having become elementary schools under the new classification. Two of the schools with 493 pupils were complete secondary schools that is schools having forms above the third. The total number of Muhammadans, and non-Muhammadan, was 5,535 of whom 310 were girls for the matriculation examination, 201 Muhaammadans went up of whom only 22 passed. This give a percentage of 10.9, which is much below the average for the presidency. At the upper secondary examination 10 Muhammadans were examined. Only 1 passed.

Collegiate Education:

There were 76 Muhammadans in arts colleges or 4 less than in the previous year. Sixteen appeared for the English language division of the B.A Examination and 4 passed.

In the second language division all the 8 candidates were successful while 5 out of 15 were successful in the science division sixteen out of 37 passed on the first Arts examination.

In Pursuance of the policy of duplicating classes with a view to imparting instruction to Muhammadan pupils classes with a view to imparting instruction to Muhammadan pupils through the medium of Urdu, Urdu sections were opened in forms I to III of the Municipal High School Adoni, Urdu Munshis have also been appointed in the board schools at Krishnagiri. In all cases the cost was met by provincial funds.

Devices for Religious Education:

The religious education in this land had been carried out first by the Muslim Missionaries. These Missionaries impaired religious learning at Madras and Muktabs generally attached to the Mosques. The second that undertook religious education was the quit movement in India. These two methods intensified religious education in every place of South Indian through peaceful and tolerant spirit. The Missionaries had been able to carry out religious mission on the principle that there was no compulsion in religion as it inferred from the verse, of the Quran “To you your religion to me my religion sacred”.

Education is the key to the progress of nation, Education makes up slumbering people, makes them alerts and active. It opens their eyes makes the people see and realize the lot of their country. The wheels of progress are started to move then and there. It is education which makes men perfect in thought and action.

The British converted Madras-e-Azam into the English high school in 1859, this generated a feeling of frustration and defecation among the Muslims in general, undaunted by this setback the Muslim scholars and dignitaries began to think of the way and means of propagating. Islamic studies some of the started imparting Islamic education in their own houses to willing students.

The attention of the imperial Government was drawn towards education about the year 1825, when a report was submitted by the North Arcot District collector showing that the District contained 630 schools most probably the meant play schools.

Conclusion:

The awakening among the Orthodox Muslims that took place after the Aligarh Movement and Muslim Education conferences held in different parts of our nation in general and the conference held at Vellore in 1906 in particular and the established of the various Muslim Educational societies accelerated the progress of Muslim in Socio-Economic life. They encouraged them to think about the importance of Muslim's Education. Though they stressed on religious instruction, at the same time realized the necessity of English education, the Urdu speaking muslims were the first to realize the importance of secular education and they were also rich to get it. When we look at the total population of Muslims, the progress in education was not very significant. The reasons for that were administrative, social and economic. Socially, the Purdah system adopted by Muslims prevented many girls from taking to education. As they were strict in it, they could not take education, where no proper provision for Purdah system was provided. Still, those who had interest and could afford moved to the places where the institution of higher education were located. More and more Muslim's should come forward to utilize the available opportunities and pursue courses in various facilities and contribute their mike to the development of the country.

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Abstract

Acquired myasthenia gravis is an extremely rare illness that now affects about 20 persons in the US for every 1000 births. The hallmark of this autoimmune disease is sporadic muscle weakness that improves with rest and worsens with exertion. For around two thirds of patients, the main symptom is extrinsic ocular muscle involvement. It frequently progresses to include more limb and bulbar muscles, leading to generalized myasthenia gravis. It is well recognized that circulating antibodies against the nicotinic acetylcholine receptor significantly contribute to the aetiology of the condition, even though its exact cause is unknown. The early detection of this ailment is crucial since it is very treatable. Over the past 10 years, there has been a major advancement in our understanding of the condition, leading to new treatment choices and a notable decline in the cause of death and disability.

Keywords- *weaknesses, physical therapy, myasthenia gravis, and conserving energy.*

Introduction

Autoimmune myasthenia gravis (MG) is a neuromuscular junction (NMJ) disease characterized clinically by fatigue-inducible muscle weakness and serologically by the presence of autoantibodies. The existence of pathogenic autoimmunity against lipid acid metabolism protein 4 (LRP4), muscle kinase (MuSK), and acetylcholine receptors (AChRs) has been established¹. Agrin, cortactin, fast troponin, ryanodine receptor, and myofibrillar proteins are among the other antibodies that have been found; nonetheless, they were not able to induce the MG phenotype². The pathophysiology of the illness is determined by the kind of autoantibody present. In AChR MG, which accounts for around 85% of all MG patients, IgG1 and IgG3 are the most common antibodies.³. These antibodies specifically attach to the receptors and cause their degradation⁴. Interestingly, these immunoglobulins also activate the membrane attack complex and other components of the complement system. Complement activation is known to be the primary destructor of the neuromuscular endplate and has been shown in both human and animal models of MG^{5,6,7}.

MuSK MG, in which antibodies bind to the Ig-like region and inhibit the activation of the agrin-LRP4-MuSK complex⁸, limits neuromuscular transmission in around 10% of MG patients. Interestingly, the IgG4 subtype, which is antagonistic to complement cascade activation, makes up most of the MuSK antibody⁹. The body uses a transmembrane protein known as LRP4 as receptor¹⁰. MuSK is activated when a complex is formed between Agrin and LRP4. It appears that for the NMJ to mature, this activation is necessary for the dispersion or clustering of the AChR¹⁰. It is estimated that there are 10 to 20 instances of the condition for every 100,000 individuals, and that there are 5 to 30 cases of MG in the general population per million person-years¹¹. Despite being rare, MG can cause a significant and continuous financial burden for those who are diagnosed with it.¹²

As a result of several medical breakthroughs, such as improved treatment options and innovations in acute critical care, the death rate among those with diagnoses has been decreasing.¹³ Immunotherapeutic medications, such as steroids, azathioprine, cyclosporine, mycophenolate, and methotrexate, are used for maintenance therapy and usually take several months to work.¹⁴ Immunomodulatory therapies, such as intravenous immunoglobulin [IVIG] and plasma exchange, are

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typically used for acute exacerbations of disease but have also been used for chronic symptom control. It is noteworthy to underline that of the previously stated medications, only IVIG has demonstrated a certain level of effectiveness in randomised, double-blind controlled trials.¹⁵ No other medication has been able to outperform the placebo by a substantial margin.^{16,17} Over the past two to three years, there has been a substantial shift in the standard of care for the treatment of MG. The purpose of this article is to highlight the most authentic medical breakthroughs and to describe future cures.

Epidemiology

The incidence of AChR-associated myasthenia gravis has a bimodal age trend, peaking in young people around the age of thirty and then steadily rising with age beyond the age of fifty. Acquired myasthenia gravis (MG) is a very uncommon condition, with prevalence estimates as high as 20 per 100,000 in the US population.¹⁸ Musculoskeletal weakness is a characteristic of this autoimmune condition that varies with activity and improves with rest. For around two thirds of patients, the main symptom is extrinsic ocular muscle involvement (EOMs). It frequently develops into limb musculature and other bulbar muscles prior to becoming generalized myasthenia gravis (gMG). Only 10% of those with myasthenia gravis (also known as ocular MG) have EOM symptoms. Age and sex appear to have an impact on myasthenia gravis. For those under 40, the ratio of female to male is around 3:1; after puberty, and between 40 and 50, it is almost equal. Over 50, men are more likely than women to acquire it.²⁰ Just 10 to 15 percent of MG cases in Europe and North America have a childhood component. Up to 50% of cases in Asian countries, however, start before the age of 15, usually with just ocular abnormalities.²¹

Pathophysiology

The study of myasthenia gravis (MG), arguably the most well-known autoimmune disease, has also contributed to our growing knowledge of the fundamental ideas guiding neuromuscular transmission. Antibodies that cause MG and impair end-plate potential target the acetylcholine receptor (AChR), reducing the safety margin for effective synaptic transmission. It is clear that AChR antibody-induced postsynaptic surface degradation requires complement activation. It was recently shown that individuals with MG who did not have antibodies against AChR had an antigenic target that contained a kinase unique to muscles. In MG, T-cells are necessary for the production of autoantibodies; however, it is unknown how tolerance is lost. MG has been linked to an intriguing differential involvement of muscle groups, especially the extraocular muscles. This article covers practically everything related to normal neuromuscular transmission, the autoimmune mechanisms that underlie MG, and the different susceptibilities of the eye muscles to MG.²²

Classification

Early Onset Myasthenia Gravis– By definition, the first symptoms of early-onset myasthenia gravis patients appear before the age of fifty. Standard diagnostic procedures are used to find serum AChR antibodies. This subset of patients with myasthenia gravis does not include those whose thymomas were discovered after imaging or surgery.

Late-onset myasthenia gravis with AChR antibodies– Individuals who have late-onset myasthenia gravis are those whose symptoms don't start until after they turn 50. Serum AChR antibodies are detected in this group, thymoma is not visible on imaging or during surgery, and thymic hyperplasia is infrequent; thymectomy is most likely not going to be effective for these individuals. Male reports of the condition are somewhat higher than female reports, and HLA-DR2, HLA-B7, and HLA-DRB1 have modest HLA correlations.

Thymoma-associated myasthenia gravis– Myasthenia gravis linked with thymomas is a paraneoplastic illness. The autoimmune condition linked to a thymoma that has received the greatest

media attention is myasthenia gravis. Ten to fifteen percent of individuals with myasthenia gravis had a thymoma on record.

MUSK-associated myasthenia gravis- The protein MUSK, which is produced in the postsynaptic muscular membrane, is required to preserve AChR function and is functionally connected to AChR. Seldom do antibodies to AChR and MUSK coexist in the same patient. Myasthenia gravis linked to MUSK is often observed in adults; reports of it in extremely elderly people or youngsters are uncommon.

LRP4-associated myasthenia gravis- In order to sustain AChR activity, LRP4 is produced in the postsynaptic muscular membrane. It functions as an activator of MUSK and a receptor for nerve-derived agrin. With a prevalence of female patients, LRP4 antibodies have been found in 2–27% of myasthenia gravis patients lacking AChR and MUSK antibodies. About 20% of individuals experience just eye weakness for more than two years, and the majority of patients present with ocular or widespread moderate myasthenia gravis.

Antibody-negative generalised myasthenia gravis- Pathologically, myasthenia gravis without detectable MUSK, LRP4, or AChR antibodies constitutes a diverse group. Certain individuals have low-affinity or low-concentration antibodies that are not detectable in standard tests against AChR, MUSK, or LRP4 antigen targets. These antibodies are only found using cell-based techniques. Twenty to fifty percent of individuals in the antibody-negative category of generalized myasthenia gravis appear to have low-affinity antibodies.

Ocular myasthenia gravis- Some myasthenia gravis sufferers only have weakness in their ocular muscles. Individuals who only have ocular weakness, particularly in the early stages of the illness, may develop generalized myasthenia gravis. This subgroup will consist of 90% of those who have had the ocular form for more than two years. AChR antibodies are found in half of individuals with ocular myasthenia gravis, although MUSK antibodies are extremely uncommon.

Clinical presentation- One of the main indicators and symptoms of myasthenia gravis is muscle weakness. For all categories, the combination of localized weakness, fluctuation in weakness over time, and exercise-induced weakness often provides good indicators for the disease's diagnosis. Unspecific tiredness syndromes may be included in the differential diagnosis for younger patients. Myasthenia gravis causes weakness in the axial, bulbar, leg, and extra ocular muscles. 20% of individuals only have ocular myasthenia gravis, and 60% of patients present with ptosis, diplopia, or both.

Ocular weakness: 90% of persons with MG experience ocular symptoms at some point in their lives.²³ The primary ocular symptoms of MG include diplopia, fluctuating ptosis, and, in less severe cases, blurred vision^{24,25} (sometimes accompanied by forehead wrinkles as a compensatory mechanism). In the beginning, these symptoms could come and go; they typically worsen at night, when reading or driving, and particularly in the sun. Since photophobia in MG patients sometimes exacerbates ptosis and/or diplopia, some patients choose to wear dark shades.^{26,24} The extraocular muscle that is most frequently affected is the medial rectus. Lesions in one or more nerves cannot be connected to the pattern of weakness in MG, and the pupillary reflexes are normal.²⁶ Asymmetric ptosis of the alternate sides throughout time is the pathognomonic feature for MG. Sometimes, if ptosis is bilateral, it can get so bad that it totally blocks vision²⁴.

Bulbar symptoms: Approximately 15% of people with MG experience bulbar symptoms at the beginning of the disease, which are frequently shown as oropharyngeal muscular weakness; during the course of the illness, bulbar muscle involvement is observed in 60% of patients.²⁴ MG commonly manifests as dysarthria, poor upper airway control, and exhaustion when chewing and swallowing, particularly during solid food consumption. Generally speaking, communication is more challenging and meals take longer to finish,²³ especially when being eaten. The weakening of the lips, tongue, masseter, and pharyngeal muscles, or perhaps a combination of these, results in dysphagia in MG patients.

Face: Individuals suffering from myasthenic diseases may display a gaunt, expressionless, or melancholy countenance. Ptosis and facial weakness are the primary causes of this particular appearance. Other classic characteristics of MGs include the "rire vertical" and the "myasthenic snarl". When the patient tries to grin, several symptoms arise. The patient's smile looks to be a sneer because the medial section of the top lip tightens, the corners of the mouth compress horizontally, and the natural upward curling vanishes. A patient may deliberately hold their lips shut by sitting with a hand on their chin for support if their weakness is significant, which will result in a hang-open jaw (a studious or attentive appearance).²³

Weakened limbs: Trunk, and airways Any muscle in the trunk or limb might be impacted, although some are more commonly than others. For example, neck flexors are weaker than neck extensors, and other limb muscles that are typically more affected are the deltoids, triceps, and extensors of the wrist, fingers, and ankle dorsiflexors. The majority of MG limb weakness is proximal and frequently asymmetric.²⁶ In MG, the arms are frequently more afflicted than the legs; also, the flexors normally involve the upper extremities first, while the extensors mainly involve the lower extremities.²⁴ When the patient is supine, a significant diaphragmatic weakness causes orthopnea, which impairs breathing efficiency.²⁷ Acute respiratory failure resulting in a life-threatening myasthenic crisis that necessitates rapid intubation, mechanical ventilation, and nasogastric tube feeding can be caused by respiratory muscle weakness.²⁸

Pathological alterations in the thymus: myasthenia gravis is linked to thymoma, but not to any other thymic tumors. The majority of people with myasthenia gravis that develops early have thymic hyperplasia, and some patients with late-onset, ocular, antibody-negative illness also have this condition. All individuals with myasthenia gravis should have a mediastinum CT scan or MRI to check for thymomas. The thymus appears to be the first site of start for both early-onset and thymoma-associated myasthenia gravis, based on both experimental and clinical findings.

Tensilon (edrophonium chloride) test for diagnosis. Acetylcholinesterase inhibitors with a short half-life, such as edrophonium chloride, extend the half-life of acetylcholine at the NMJ. After intravenous edrophonium administration, the patient is monitored for objective improvements in muscular strength, namely in the ptosis of the eyelid and/or extraocular muscle movement. The sensitivity of the Tensilon test ranges from 71.5% to 95% for diagnosing MG.^{29,30}

Test using an Ice Pack: When the Edrophonium test is not appropriate for ptosis patients, the non-pharmacological cold pack test may be used. It involves applying an ice pack to the eye for two to five minutes and then evaluating if the ptosis has improved.³¹

Electrophysiological procedures: Single fiber electromyography and repeated nerve stimulation studies are the two main electrophysiologic procedures used to diagnose MG. Neuromuscular transmission is tested by repetitive nerve stimulation. The nerve supramaximal is stimulated at a frequency of two to three hertz (Hz). An evoked muscle action potential with a 10% decrease between the first and fifth is indicative of MG. Exercise can be used to document decline and cause muscular weariness in the absence of decrease. About 75% of individuals with gMG and 50% of those with oMG have abnormal test results^{31,32}

Myasthenia gravis: MG should be treated individually based on the patient's features and the severity of the illness. MG can be managed in two ways depending on the pathophysiology of the condition. The first involves using an acetylcholinesterase inhibitor to increase the amount of acetylcholine that is available to engage with the postsynaptic receptor; the second involves utilizing immunosuppressive drugs to reduce the number of antibodies that attach to cholinergic receptors. To treat MG, there are five main treatments used:

- (i) Acetylcholinesterase inhibitors for symptomatic treatment.
- (ii) Quick, short-term immunomodulating therapy using intravenous immunoglobulin and plasmapheresis.

- (iii) Long-term, chronic immunomodulating therapy with immunosuppressive medications such as glucocorticoids.
- (iv) Medical intervention In individuals with myasthenia gravis, the thymus gland plays a crucial role in stimulating the creation of acetylcholine receptor antibodies. Total thymectomy, which involves removing the gland when a tumour is present, has been shown to improve patient outcomes and reduce the need for immunosuppressive medication. However, patients with ocular myasthenia are not recommended to undergo thymectomy because there is insufficient evidence to suggest that surgery prevents generalization or induces remission.
- (v) Physical therapy

Physiotherapy: The production of acetylcholine receptor antibodies is significantly aided by the thymus gland in patients with myasthenia gravis. However, there is inadequate evidence to recommend thymectomy for individuals with ocular myasthenia in order to avoid generalization or induce remission. Patients who had a total thymectomy had better results in terms of symptom relief and the use of immunosuppressive medications.³³

Low- to medium-intensity physical activity and training are advised, but high-intensity physical activity should be avoided by MG patients as it exacerbates muscle weakness. It's important for MG patients to strike the right balance between exercise and relaxation. Through vigorous physical exercise, the weakness cannot be healed. But the majority of MG sufferers are more submissive than they need to be.³⁴

Exercises for respiratory training include breathing re-training (BR), which involves pursed-lip and diaphragmatic breathing, as well as interval-based inspiratory muscle training (IMT).

Practice mindful breathing

1. **Breathe evenly**, that is, in for four counts and out for four counts.
2. **Perform the 4-4-8 breathing exercise.** Breathe in for four counts, extending and relaxing your belly. Hold the breath for four counts, then slowly exhale through your nose for eight counts. At the conclusion of the exhale, gently constrict your abdominal muscles.
1. **Aerobic Training:** Using stationary bicycles, do seven intervals of two minutes of riding against a high load and one minute of cycling against a minimum load. The workout concludes with a five-minute cool-down.

Interval-based inspiratory muscle training (IMT) and breathing re-training (BR): which entails diaphragmatic and pursed-lip breathing, are two of the exercises used in respiratory training.

Recall Bicycle resistance was set to 80% of pulse maximum throughout the 2-minute high load periods, and it was continually changed based on heart rate.

2. Strolling

Energy-saving methods: These methods make use of breathing exercises and ergonomic concepts to lessen tiredness and support patients with their ADLs. lowering tiredness

Putting on clothes

1. Simple hairstyles
2. Use an electric toothbrush
3. Steer clear of hot showers and baths
3. Shave or sit to dry your hair.
4. Prepare gradually

Moving About -

1. A little cane can provide assistance
2. Make use of shopping carts
3. A parking permit for people with disabilities
4. If your stairs prevent you from moving about the house on your own, think about acquiring a chair lift.

Energy-saving appliances in the kitchen include an electric mixer.

3. Make sure you have easy access to the items you need.
4. Select containers with a medium or small size.
5. Dishes made of lightweight plastic are quite useful.
6. When preparing meals, a kitchen chair of the right size will help you spend less time standing and lifting your arms.

Install safe grab bars in the shower and bathtub in the bathroom.

Use a shower chair made of plastic.

4. Consider using a shower head attachment with a flexible hose.
5. Use the toilet railing.
6. You might want to get a counter blow dryer stand.

For Oneself

1. Supporting your neck with a cervical collar might be beneficial.
2. To prevent your eyelids from sagging, tape them up.
3. Use a moist cloth over your neck to stay cool if the heat is making you feel heavy.
1. Safety at home: 1. Take sponge baths instead of showers if the patient feels weak.
2. Request that someone check in on you if you live alone.
3. Prevent falls by keeping stairs and pathways free.
4. Always carry a flashlight in case of an outage.

Strength training: A group of individuals with mild to moderate MG benefited clearly from a strength training exercise regimen, according to one research. But building up vast muscle groups—especially the proximal muscles of the shoulder and hips—should be the goal.

In summary: MG patients may have symptom relief and improved function with the use of a rehabilitation program in conjunction with other medical treatments. Building the person's strength to enable a return to work and everyday activities is the main objective. The disease's stage and general health determine the exercise's intensity and progression. It is advised to use an interdisciplinary approach involving respiratory treatment, physical medicine and rehabilitation, and neuromuscular medicine. Restoring muscular strength over the long term is facilitated by physical therapy. Exercises for graded strengthening assist the person in maintaining maximum functionality. Occupational therapy uses compensatory and energy-saving strategies to assist the patient adjust to new methods of carrying out tasks related to everyday life.³⁴

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33. Review Article Myasthenia Gravis: A Review Annapurni Jayam Trout,1 Alok Dabi,1 Noha Solieman,1 Mohankumar Kurukumbi,1 and Janaki Kalyanam2 Washington, DC 20060, USA Correspondence should be addressed to Annapurni Jayam Trout, ajayam-trouth@howard.edu Received 19 June 2012; Revised 23 August 2012; Accepted 4 September 2012

Abstract

Painting serves as a means of conveying human thoughts. In the Indian context, the inception of art occurred as early humans utilized twigs, fingers, or bone points to paint on mud surfaces, unfortunately, vulnerable to the effects of time. The earliest discovered instances, originating from Mesolithic caves, have endured through continuous integration into the daily lives of people. India boasts a diverse reservoir of art, ranging from traditional to contemporary forms, positioning itself as a prominent destination for art enthusiasts. The country's unique identity is rooted in its rich traditional heritage of Tribal and Folk Arts and Culture. Throughout history, the artistic and cultural expressions originating from India's tribal and rural communities have consistently showcased their creative brilliance. This evolution laid the foundation for India's wall painting tradition, with Madhubani emerging as a renowned name in this artistic lineage. This traditional art form, has undergone changes due to contemporary, social and economic shifts. Ensuring the preservation of Madhubani art and investigating possibilities for its conservation through alternative artistic mediums is essential for the well-being of future generations. The use of traditional motifs in textiles serves the purpose of keeping these designs alive. Folk arts in India, particularly those involving painting, play a crucial role in generating innovative designs. The ever-growing demands of consumers in the creative industry demand constant modifications in design, color, style, and technique. To contribute a new dimension to the application of Madhubani designs in interior spaces and home decor, the present study was undertaken.

Keywords – *Tribal Art, Mithila, Madhubani, Folk Art, Wall Painting, Bihar*

Introduction

Madhubani art, also referred to as Mithila art, constitutes a rich tradition of domestic ritual painting originating from the northern region of Bihar, where it not only began but also continues to flourish. Historically, Madhubani paintings were crafted by women on the freshly plastered walls and floors of mud huts. These artistic skills and techniques have been passed down through generations, serving as a testament to Madhubani's enduring uniqueness. In contemporary times, both men and women contribute to this art form, extending its application onto various surfaces such as cloth, handmade paper, and canvas.



Figure 1: Women Painting Madhubani on a cloth in Darbhanga, Bihar.



Figure 2: Madhubani Painting on the Walls in Bihar.

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The thematic focus of Madhubani paintings commonly revolves around nature, social themes, and Hindu deities. Elements like the sun, moon, and sacred plants such as Tulsi are frequently depicted, alongside scenes from ancient epics and daily life, including royal courts and weddings. Animals like peacocks, fish, crocodiles, and elephants also hold a prominent place in Madhubani art, adding a vibrant and symbolic dimension to the compositions.



Figure 3: Madhubani Painting
Depicting Court Life.

What makes Madhubani art distinctive is not only its subject matter but also the use of locally sourced materials for creating paints and brushes. The handmade paper is treated with cow dung, a unique method that helps preserve the vivid colors derived from natural pigments. Artists use charcoal mixed with water for outlining the images, while crushed flowers and plants, combined with powdered rice, result in colorful pastes. In a Madhubani composition, no space remains empty; intricate details fill gaps with the inclusion of flowers, animals, birds, and geometric designs, creating a visually captivating and harmonious piece of art.



Figure 4: Natural Dyes extracted from leaves and flowers for Madhubani Painting.

Madhubani artists craft their paints and tools using natural, locally sourced materials. Prior to applying any colors, the paper undergoes a treatment with cow dung to maintain the vibrant hues of the natural pigments. The mixture of cow dung, charcoal, and water is employed for drawing the black outline. Artists utilize a bamboo stick to meticulously create the intricate black outline of the painting, a process that, once initiated, cannot be altered or erased.

Origin and Lifestyle of Madhubani Artists

The origins of Madhubani painting trace back to the ancient city of Mithila, believed to be the birthplace of Sita, the daughter of King Janak. Legend has it that King Janak commissioned Mithila paintings to celebrate the marriage of his daughter to Lord Rama of Ayodhya. This art form was acknowledged as Kulin art, signifying the art of the pure castes.



Figure 5: Madhubani Painting of Lord Ram, Laxman & Sita.

In the contemporary context, the Madhubani painting tradition came to the attention of William G. Archer, a British colonial officer, in 1934, during a significant earthquake in Bihar's Madhubani district. He unexpectedly discovered these paintings adorning the interior walls of houses. Subsequently, he curated a collection featuring higher quality and a broader range of themed Madhubani paintings.

Male Madhubani artists are predominantly occupied with agricultural activities, livestock raising, and carpentry. In addition to these primary occupations, they also partake in the practice of traditional painting. Historically, these male artists would migrate to other regions during flood seasons due to the flood-prone nature of the Madhubani region.

Traditionally, Madhubani painting has been associated with female artists who pass down their artistic traditions through generations. Originally practiced within Brahman and Kayastha families, the art form has now extended its reach to lower caste families in the contemporary era. Madhubani painting finds its expression primarily during significant occasions such as weddings, festivals, ceremonies, and the spring season.



Figure 6: Madhubani Painting showcasing the daily lifestyle of Women.

Some significant symbols in Mahbubani paintings are:

- Parijat – Symbol of reproduction and fertility
- Two peacocks – Symbol of eternity
- Elephant aripana – Symbol of successful pregnancy
- Lotus aripana – Signifies sexual energy
- Circle aripana – God of creation
- Parrot aripana – Symbol of Kama
- Snake – Power of regeneration
- Mandalas – To evoke love among the newly-weds.

Literature Review

(Shalini Tiwari, 2020) This paper addresses the folk art of Bihar, Madhubani painting and its journey from being local to global. As India opens up her doors for the multinational's companies, the economy of India has been extended in the global market. With growing economy, cross cultural interaction amongst the countries has also been started. Thus, Indian art and folk arts, which are reserved in a very small territory, came into the main stream of contemporary art world.

(Rimpy Agarwal, 2015) Since ancient times art has been an integral part of human life. Folk art is a type of artistic expression closely tied to the everyday lives of common people. One notable example is Madhubani painting, a Hindu style of art that has gained global recognition, particularly in the Mithila region of Bihar, India, and Nepal. The practitioners of this art form are typically ordinary housewives with no formal art education. In Mithila, women adorn the walls and floors of their homes with these paintings during various social and religious festivities. The simplicity of execution is a distinctive feature of Madhubani paintings. These paintings have been breathtaking beautiful and have always mesmerized the on-lookers. India stands out as one of the few countries where female artists took the lead in initiating folk paintings and showcased them on the global stage in a refined and advanced manner. These paintings not only aesthetically appreciated but also won critical acclaim.

(Ankur Joshi, 2015) The paper explores how traditional art can be preserved through social business by studying the case of Mithila Smita. It is a small organization working for preservation and promotion of traditional art of Mithila region - commonly known as Madhubani paintings. The case brings to the light the concept of governance (which envisages role of multiple actors) which is becoming more and more relevant. The government which framed rules and regulations for preservation of art was not successful in achieving outcomes alone. An entrepreneur shares the same concern and tries to address the need of society through a social business model. It may be a beginning for Mithila Smita, but the case provides learning for trying out similar model in different phenomenon. Through this conceptual paper we also present a framework of governance for improving implementation process and social wellbeing.

(Nibedita Das, 2013) Indian art history has given a rich storage of traditional painting in Indian sub-continent from pre-history to present time. The style of painting differs from region to region and period to period. There is a living tradition in the art field of Bihar that is called Madhubani painting which enlightened about the social structure as well as cultural identity of Bihar and the styles of painting has been changing from generation to generation. The article deals with the history, subject matter, use of raw materials and styles of Madhubani Paintings in the context of the role of local artisans of Jaitapur village in it. The article centers on Madhubani paintings, particularly highlighting the current state of Madhubani art and how village artists showcase their skills using organic colors and free hand brush drawing.

Research Methodology

Conducted an in-depth examination to illuminate the salient features of Madhubani Art, drawing insights from four research papers elucidating the vibrant tribal characteristics and skills inherent in

this art form. Additionally, information and visuals were gathered from diverse online sources, encompassing websites, PDFs, journal articles, books, and more. The research paper extensively relied on online data collection to procure pertinent information for comprehensive analysis.

Problem Finding and Solution

Problem statement – The exploration of Madhubani art and its potential integration into the design of interior spaces and decor.

Madhubani art has a rich history and a unique visual language that resonates with both tradition and creativity. Here are some aspects highlighting the influence of Madhubani paintings in interior spaces and decor:

Cultural Aesthetics: Madhubani art is deeply rooted in Indian culture and mythology. Its incorporation in interior spaces adds a touch of cultural aesthetics, connecting the space to the rich heritage and traditions of the region. The vibrant colors, intricate patterns, and symbolic motifs create a visual narrative that can be both captivating and meaningful.

Nature-Inspired Themes: Madhubani paintings often depict nature, with elements like trees, flowers, birds, and animals. Integrating these nature-inspired themes into interior decor brings a sense of harmony and a connection to the natural world. The designs can be adapted to various elements, such as wall murals, tapestries, or even furniture.

Spiritual Significance: Many Madhubani paintings feature Hindu deities, religious symbols, and scenes from epics. Incorporating these spiritual elements in interior spaces can infuse a sense of serenity and mindfulness. It creates a sacred atmosphere, making the space not only visually appealing but also spiritually uplifting.

Colorful Palette: Madhubani art is renowned for its vibrant and bold color palette. The use of bright hues like reds, blues, yellows, and greens adds a dynamic and energetic vibe to interiors. These colors can be strategically incorporated into various elements, from wall coverings to furnishings, to create a lively and visually stimulating ambiance.

Customization and Personalization: Madhubani art offers a wide array of motifs and designs, allowing for customization and personalization. Homeowners can choose specific themes or symbols that resonate with them, creating a unique and personalized touch to their living spaces.

Artisanal Craftsmanship: The handmade nature of Madhubani paintings reflects artisanal craftsmanship. Introducing handcrafted elements into interior decor adds a touch of authenticity and uniqueness. It celebrates the skill and talent of the artists, contributing to the revival and appreciation of traditional craftsmanship.

Conclusion

In conclusion through this study, the intricate and culturally rich Madhubani art deserves greater exposure, unlocking a world of vibrant storytelling and artistic expression. Its potential to transform interior spaces and décor is immense, offering a unique blend of tradition, spirituality, and artisanal craftsmanship. By embracing Madhubani art, we not only infuse our living spaces with visual allure but also contribute to the preservation and appreciation of a time-honored artistic heritage. As this art form continues to captivate hearts worldwide, it serves as a testament to the enduring power of creativity to transcend boundaries and enhance the beauty of our everyday surroundings.

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Abstract:

The research article delves into the poignant novellas that explore the lives of three main characters who are relegated to the role of maid by their own family and society, a situation that subjects them to trauma and emotional distress. The novellas ultimately narrate the journey of breaking free from oppressive chains, abandoning their family, and choosing their own path. The *Sand and other stories* were written with the deepest empathy for women trapped by an almost absolute lack of resources and support – financial, intellectual, and emotional. These stories by Ashokamitran have all the identifiable characteristics of his writing like irony, interiority, and sensitivity. The narrative in all three novellas – *Sand*, *Malati*, and *Those Two* moves in a series of short scenes, building tension with a relentless layering of details. The exploitation of women (Sarojini, Amma, Malati, Dhanam, and Vaala), and their daily struggles against it lie exposed in all their terrifying ordinariness. Through a close analysis of the short stories, this article examines the themes of familial and societal oppression, suppressed dreams, and the transformative power of personal choice.

Keywords: Trauma, Oppression, Liberation, Women Empowerment, Society, Norms, Culture.

Introduction:

Ashokamitran, was born as Jagadisa Thyagarajan on September 22, 1931, in Secunderabad. He is one of the most popular writers in Tamil literature. He adopted the pseudonym “Ashokamitran” for his writing career, inspired by the Sanskrit words “Ashoka” (without sorrow) and “mitran” (friend), which conveyed the idea of a “friend without sorrow.” He initiated his literary career with a noted radio play in the year 1953, have had written a number of short stories, novellas and, novels. His works have been widely translated into many Indian and European languages. The finest English translations include *Thanneer* (Water) and *Pathinettavadu Atchakodu* (Eighteenth Parallel).

Ashokamitran’s contribution to the literary field has brought him many laurels, including a creative writing fellowship from the University of Iowa. The book *Sand and Other Stories* collects three novellas, namely ‘*Sand*’ (1974), ‘*Malati*’ (1981), and ‘*Those Two*’ (1993). His works often revolved around the daily lives and struggles of common people, portraying their emotions, aspirations, and challenges. His writings are characterized by simplicity and a keen observation of human behavior. Ashokamitran’s works continue to be widely read and admired, and he left an enduring legacy in literature. His writings provide insights into the everyday lives and emotions of common people, making them relevant and relatable. His contribution to literature, marked by his keen story-telling and empathetic portrayal of human experiences, has earned him a lasting place among the great literary figures of the 20th century in India.

Oppression and denial of the basic rights of women are a common phenomenon even today in most households. The hegemonic men often try to uproot the feelings, dreams, and confidence of the women to silence their voices. This kind of chauvinism is common all over the world, irrespective of

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religion, race, or nationality. Constant oppression of the feelings and emotions of women leads to trauma and bursts out in a fierce manner. The NCBI report says that more than half of the women (55.4%) reported both physical and mental trauma due to familial and societal oppression. Trauma refers to an emotional or psychological response to a distressing or disturbing event or series of events that are outside the realm of normal human experience.

Trauma can result from a wide range of situations that have a profound impact on a person's mental, emotional, and physical well-being. The study of trauma helps us to understand the profound suffering that individuals can experience in the face of adversity. By examining trauma, we gain insights into the human condition and the emotional responses to extreme stress. *Sand and Other Stories* is one such collection of short stories written by Ashokamitran that focuses mainly on the oppression and trauma of women and children. The three stories trace the lives of four titular characters who struggle to find a convenient hold in the society among the hegemonic-minded people.

Societal and Familial Oppression and Suppressed Dreams:

This section of the article explores the dynamics within society and family, shedding light on the circumstances that lead them to serve as maids in their own homes. The narrative highlights the emotional turmoil that they experience as their dreams are suppressed and they are expected to conform to their family's or society's expectations.

Sand is the story of a typical middle-class family that struggles to live a sophisticated life. The story focuses on Sarojini, an ambitious student whose dream is to enter a medical college but whose hopes are shattered by the daily chores of her family life. The busy household has a father, a mother, and an elder brother who is still unmarried. Sarojini dutifully assists them, trying to fulfil the needs of the family members. After completing the never-ending daily chores, it is even more difficult to find a space for her to study. Ashokamitran proved himself as a writer of the masses by perfectly showcasing a middle-class family's troubles in a short literary piece.

This story revolves around a young woman named Sarojini, who holds an ambition to become a doctor in a firm way. As the story unfolds, the protagonist, Sarojini, embarks on a journey of self-discovery, ultimately choosing to break free from her family's oppressive grip and move on into a new life with a partner. Meanwhile, Sarojini toils hard to achieve her goal by receiving no support from her family. Sarojini's mild and last hope in the family was her mother, Amma. The untimely demise of her mother has created a huge vacuum in her mind and life, which has made her almost limbless and clueless. Sarojini has been forced to do all the household chores, by sparing no time for her studies and personal chores which increases her burden and creates stress in her mind and body.

The absence of the main(d) woman in her family has made her life totally deserted and helpless. Despite being with her father and brothers, the pressure of loneliness from not having a caring person kills her and makes her life as hell every second. The society also forces her to be inside the house to do household chores. Sarojini's other sisters, who got married into different families, are helpless because they themselves are undergoing the same trauma and tension in their husband's houses.

The patriarchal society always tries to underestimate and dominate women. From the house to the workplace, there is gender discrimination. The hegemonic men never think any woman is equal to them at any level. The characters like Mani, Appu, and other menfolk in the story represent the traditional hegemonic society where they want the women of their family to obey them in all situations. Meanwhile, the young women of the family, like Sarojini and her sisters, hold various desires in their minds and are waiting to fulfil those desires. Ashokamitran wants to show the plight of Indian women who have become victims of patriarchal values. Sarojini wants to subvert the traditional society that she herself has stuck to. She literally toiled hard for the family after her mother's death without anyone's support in the family. Without taking Sarojini's needs into account, her family members made her work for a whole day, which made her exhausted both physically and mentally. Everyone in her

family is self-centered and concentrated on their personal needs and benefits. Sarojini, a poor soul who left without care has been portrayed as grief and trauma stricken.

The next novella, '*Malati*', is the shortest part but a master piece of Ashokamitran. It has a protagonist named Malati, who works in a nursing home and single-handedly drives her family forward. Malati worked hard for her livelihood in a most embarrassing place where she had to face a lot of questions from the authority and from the patients and their attenders at the nursing home. This setting of the novella clearly shows the power dynamics that push an innocent woman to face tough and stressful situations in her workplace. Dealing with pressure from multiple sources leads to emotional stress, in the long run, creates mental trauma in her mind. The family situation and personal struggles.

The last novella in this collection is the longest piece named '*Those Two*'. It starts with the character called Venkatachalam, who died in an accident, leaving a widow named Vaala and two children. The eldest child named Visu was quite attached to his father, and he loved his father's companion. Visu, who struggles to memorize mantras and formulas, was ridiculed and beaten up by his friends and even by his family members. Venkatachalam had an affair for a long time whose name is Dhanam. Dhanam and Venkatachalam had a good relationship and a better understanding of each other. Visu, the so-called dimwit boy, often goes to Dhanam's house in Vaitheeswaran Kovil, which is quite far from his house in Kizhavur, which stays a mystery till the end of the story.

Trauma and Its Consequences:

This part of the article delves into the trauma the protagonists have undergone due to their circumstances. It examines the psychological and emotional impact of being treated as inferior in her own family and society, highlighting the lasting scars of their experiences.

Sarojini who left without any help, space, or a person to share her feelings, which resulted in a drastic change in her behavior and character. Sarojini started to avoid meeting people and conversing even with her family members. The household chores had turned into difficult and irritating job for Sarojini and she started to yell at others. "Should I go out only to slave for you people?" (Ashokamitran 45). This line shows the intensity of the anger and emptiness that reside in her mind. She badly needs someone to share her sorrow, which constantly bores her heart. In the scenario, young Sarojini is relegated to the role of a mere servant within her own family as a replacement for her mother.

Malati, who joined as a clerk in a nursing home, has undergone a lot of hardships in her personal and professional life. Initially, Malati was reluctant to join her father's company, where her father borrowed a lot of money from the co-workers. It has given her a sense of embarrassment to face them. The working environment at Malati's workplace is quite toxic and disturbing. She never enjoyed her workspace with fulfillment. The only benefit in that job is she can receive her salary of one hundred and fifty rupees on the first date of the month without fail. The scenario of verbal abuse and character assassination within the workspace of the nursing home, particularly when inflicted by the wife of the doctor, represents a toxic work environment that can have profound and lasting effects on the mental and emotional well-being of the targeted working woman. Verbal abuse and character assassination create an atmosphere of fear, anxiety, and powerlessness for the victim.

The working woman, subjected to such demeaning treatment, experiences not only professional challenges but also emotional trauma. This trauma can manifest in heightened stress levels, anxiety, and a pervasive fear of further victimization. The nursing home for Malati, intended to be a space for collaboration and productivity, becomes a source of distress and emotional harm. "Malati laid her hand on the doctor's wife's shoulder. She bristled and flung it away. 'Leave me alone! You have to struggle for the sake of two meals a day, and you're telling me what to do? Are you here to work, or to seduce him? Chee, get away from me!'" (Ashokamitran 65).

The wife of the doctor, in her role as a game changer, exploits her position of influence to inflict harm on Malati. This power dynamic exacerbates the trauma, as the victim may feel trapped and helpless due to the perceived imbalance of power. "Malati's body began to tremble" (Ashokamitran

65). This shows the broader issue of workplace hierarchies and the potential abuse when individuals in positions of authority misuse their power. The whole blame cannot be dumped on the doctor's wife because, she erodes like a volcano knowing that her husband (doctor) has an affair with Sujana. Sujana, who entered the nursing home, slapped the doctor's wife, which made her pass vile comments on Malati.

The loss of a parent is a devastating experience for any child, but it can be even more traumatic for a young boy who is already vulnerable, naïve, and gullible. Visu, who loses his father and is subjected to abuse from his mother-side relatives, created a profound impact on his mental health. This kind of mental trauma can have a lasting impact on a person's mind, which spans until his death. Children are vulnerable to trauma as their brains are still developing. Visu, who experiences this kind of trauma, has developed strange symptoms like going into a trance-like state, and he has also started to converse with his dead father. The above-mentioned symptoms belong to PTSD (Post-Traumatic Stress Disorder).

The Journey of Liberation:

This section narrates the protagonist's journey of liberation, portraying her growing realization that they must forge their own path to fulfil their dreams. It explores the pivotal movement when they decided to break free from their own family and society's expectations and embrace their own aspirations. It also reflects on the themes of empowerment, self-determination, and the transformative power of a strong soul.

Sarojini's decision to choose her partner without the approval and consent of her father, brothers, and sisters had been criticized by the conventionalists, but Sarojini's decision to leave to choose her partner is not an act of rebellion but a quest for identity and agency. This story shows how societal expectations and familial pressures can stifle personal growth, leading individuals to seek liberation outside the confines of their established roles. It raises questions about the consequences of suppressing one's true self to conform to societal norms, prompting readers to reflect on the importance of individuality and self-determination. Additionally, the narrative highlights the emotional toll of being treated as a servant within one's family.

Sarojini's departure becomes a powerful commentary on the emotional consequences of dehumanizing roles, emphasizing the importance of recognizing and respecting the inherent dignity of every family member. This part of the article discusses the psychological impact of such mistreatment, inviting readers to see Sarojini's journey towards self-discovery, liberation, and healing. This prompts important conversations about autonomy, self-discovery, and the pursuit of happiness, challenging us to reconsider established norms and advocate for environments that foster individual growth and fulfillment.

The story of Malati delves into the multifaceted aspects of the scenario, exploring the societal, organizational, and personal implications of such a distressing experience. Malati's decision to leave her job is a poignant manifestation of the systematic issues embedded in workplaces that tolerate or perpetuate abusive behavior. This shows the societal norms and power structures that enable abuse to persist within professional settings, shedding light on the urgency of dismantling such structures to create environments that prioritize the safety and well-being of a working woman. Malati's departure from the nursing home also prompts a discussion about the broader societal narrative surrounding victim-blaming and the challenges faced by survivors in seeking justice. It also shows the cultural attitudes that may discourage individuals from reporting abuse, perpetuating a cycle of silence and complicity. It advocates for societal change that dismantles these barriers and empowers survivors like Malati to speak out against injustice.

In the story Those Two, the major character who undergoes trauma is Vaala, who failed to liberate herself from the clutches of the family and society. Vaala never tried to come out of the confined space of the family and toiled to survive the rigid customs and practices. Later, she died of

illness caused by the brutal attack by her brother because of cordial relationship with Dhanam, who is her husband Venkatachalam's concubine. Unlike other women, Vaala had a good rapport with Dhanam, which is appreciable and understandable. In the case of Dhanam, it is different. Dhanam, who is in deep grief, has been visited by Visu, Venkatachalam's son. This expands the drift between the families, and society also curses her for luring the kid with black magic and labels her as a witch, which is a common practice across the villages.

Dhanam, who is quite courageous, brushed away all the slanders against her. She even paid a visit to Vaala's house and shared her grief with her, and she offered a gold coin to Visu and left the village to start a new life in Madras. She leaves her village for the city and achieves success in the singing and drama field unfolding a powerful narrative of personal transformation and resilience to overcome the trauma she faced in her personal life. It also highlights the courage required to break free from a predetermined fate. It underscores the resilience and determination needed to navigate and overcome these challenges, offering insights into the transformative power of pursuing dreams against all odds. This clearly shows the emotional and psychological impact of the success on the concubine's (Dhanam) life, exploring how it reshapes her identity and sense of self-worth. Dhanam's journey challenges societal perceptions and stereotypes, emphasizing the transformative potential of pursuing one's passion and achieving recognition in the field of drama.

Conclusion:

The literary works examined in this research article serve as a powerful narrative of a woman's struggle against societal and familial oppression, suppressed dreams, and the trauma that results. The decision to abandon their family and society to chart their own path underscores the resilience of the human spirit, especially a woman's spirit, and the importance of pursuing one's dreams and aspirations. The stories of these women, who have courageously chosen their own paths despite encountering trauma and societal pressure serve as powerful testaments to the resilience of the human spirit. These women have defied traditional expectations, navigating the complexities of trauma and familial pressures to forge their unique destinies.

Through these stories, a compelling narrative emerges, one that challenges the status quo and inspires others to reconsider societal expectations. The courage displayed by these women is a beacon for those who find themselves at the crossroads of conformity and self-discovery. Ultimately, the narratives of these resilient women exemplify the transformative power of choice and self-determination. They invite us to recognize the strength inherent in embracing one's own path, fostering a society that values individual agency, and celebrating the diverse journeys that contribute to the rich tapestry of human experience.

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Abstract

This research project titled "A Study of the Impact of Workforce Emotional Intelligence on Organizational Productivity" aims to examine the relationship between emotional intelligence and productivity in the workplace. The study was conducted using a survey of 300 employees from different organizations. The survey was designed to measure the level of emotional intelligence of the employees and its impact on their work productivity. The results of the study indicate a positive correlation between emotional intelligence and productivity in the workplace. Employees who exhibit higher levels of emotional intelligence tend to be more productive than those with lower levels. Furthermore, the study found that employees who receive emotional intelligence training perform better than those who do not.

The research paper also includes a detailed analysis of the survey results using various statistical techniques, including descriptive statistics, correlation analysis, and hypothesis testing. The analysis of the data provides a deeper understanding of the relationship between emotional intelligence and productivity in the workplace. In conclusion, this research project provides valuable insights into the impact of emotional intelligence on organizational productivity. The findings of the study highlight the importance of emotional intelligence in the workplace and the benefits of providing emotional intelligence training to employees. The project report serves as a useful resource for organizations looking to improve their productivity by enhancing the emotional intelligence of their workforce.

Keywords- *Emotional Intelligence, Organisational Productivity, Organisation Workforce*

Introduction

As researchers and practitioners seek to better understand the role that emotions play in the workplace, emotional intelligence (EI) has become an increasingly popular topic of study in the field of organizational psychology. Workforce EI, or a group's or organization's collective emotional intelligence, has emerged as a potential topic of research, with multiple studies indicating that higher levels of workforce EI can lead to improved communication, collaboration, and job satisfaction among employees. These good outcomes are expected to translate into enhanced organizational productivity and profitability.

Literature Review

The review indicates that employees with higher levels of Emotional Intelligence are more likely to be successful in their jobs and are more effective in managing conflicts and challenges. Additionally, Emotional Intelligence has been found to be positively related to factors such as leadership effectiveness, teamwork, and communication. The literature review also discusses the challenges and limitations of research on Emotional Intelligence and organizational productivity. These challenges

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include the lack of standardized measures of Emotional Intelligence and the difficulty in establishing causality. A review of the literature was conducted to identify relevant research and theories related to the topic. According to **Goleman (1998)**, there are five components of emotional intelligence: self-awareness, self-regulation, motivation, empathy, and social skills. These components can be developed through training and development programs, and they are positively related to job performance, job satisfaction, and organizational commitment (**Cherniss & Goleman, 2001; Singh, 2013**).

Significance of the Study

The study on the impact of Workforce EI on Organizational Productivity holds significant importance in the current business scenario. With increasing competition and the need for sustainable growth, organizations need to leverage every possible factor to enhance their productivity. The study will provide valuable insights into the role of Workforce EI in improving Organizational Productivity, which can help managers and policymakers to devise appropriate strategies to enhance organizational performance. The study will help organizations to understand the importance of emotional intelligence among employees and how it can be leveraged to improve organizational productivity. The findings of this study will help managers to identify the factors that contribute to Workforce EI and devise strategies to enhance it among employees. Furthermore, the study will provide valuable insights into the role of managers in improving Workforce EI and enhancing organizational productivity.

The objectives of the study are:

- To examine the relationship between workforce EI and organizational productivity in Indian organizations.
- To identify the factors that affect the relationship between workforce EI and organizational productivity.
- To provide recommendations for enhancing the workforce EI and organizational productivity in Indian organizations.

Research Methodology

This study will use a mixed-methods research design, which includes both quantitative and qualitative data collection and analysis. The sample will consist of employees from various Indian organizations, and data will be collected using surveys and interviews. The data collected will be analyzed using statistical tools and qualitative analysis software. Overall, this chapter has provided an overview of the study's topic, the current scenario related to the study, the research problem and the need for the study, the research question, objectives, and hypothesis, and the research methodology that will be used.

Data Analysis

Hypothesis 1: Emotional intelligence has a positive impact on organizational productivity.

To test this hypothesis, respondents were asked to rate how much they think emotional intelligence impacts organizational productivity. The results are presented in Table 1. Out of 300 respondents, 76 (25.3%) rated emotional intelligence as having a moderate impact on organizational productivity, 66 (22%) rated it as having a significant impact, 74 (24.7%) rated it as having some impact, and 84 (28%) rated it as having no impact.

Table 1: Impact of Emotional Intelligence on Organizational Productivity

Variables	Emotional Intelligence(EI)	Organizational Productivity (OP)
Mean	3.22	2.87
Standard Deviation	1.06	1.09
Correlation Coefficient (r)	0.564	
Significance Level (p-value)	<0.01	

Data on the relationship between organizational productivity and emotional intelligence are shown in the table. Organizational productivity had a mean score of 2.87 and a standard deviation of 1.09, while emotional intelligence had a mean score of 3.22 and a standard deviation of 1.06. It was discovered that emotional intelligence and organizational productivity had a positive association, with a correlation coefficient of 0.564. The association between the two variables is significant because the statistical significance level was less than 0.01. Emotional intelligence is a major predictor of organizational productivity, with emotional intelligence accounting for 31.9% of the variation in organizational output, according to the regression study. A t-test showed that individuals who regarded organizational productivity as vital had considerably higher scores than those who ranked it as less important.

Hypothesis 2: States that there is a positive correlation between emotional intelligence and job performance.

To test this hypothesis, a correlation analysis was conducted between emotional intelligence (as measured by the participants' self-reported use of EI skills in their work) and job performance (as measured by the participant's perception of a correlation between their colleagues' EI skills and their job performance). The correlation coefficient was found to be 0.624, which indicates a moderately strong positive correlation between emotional intelligence and job performance ($p < 0.01$). Therefore, the hypothesis is supported by the data, suggesting that employees with higher emotional intelligence tend to have better job performance.

Table 2: Correlation between Emotional Intelligence and Job Performance

Emotional Intelligence	Job Performance	
Emotional Intelligence	1	0.646**
Job Performance	0.646**	1

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

Hypothesis 3: The level of emotional intelligence varies across different job positions, age groups, and industries.

To test this hypothesis, the data collected on participants' job positions, age ranges, and industries were analyzed. Table 3 shows the mean scores of emotional bits of intelligence across different job positions, while Table 6 shows the mean scores across different age ranges and industries.

Table 1: Level of Emotional Intelligence by Job Position

Job Position	Mean Emotional Intelligence Score
Entry-level employee	3.18
Mid-level employee	3.56
Senior-level employee	3.82
Manager/Supervisor	3.64
Executive/CEO	4.06

Table 2: Level of Emotional Intelligence by Age Group

Age Group	Mean Emotional Intelligence Score
Under 20	3.30
20-29	3.49
30-39	3.72
40-49	3.58
50 Above	3.47

Table 3: Level of Emotional Intelligence by Industry

Industry	Mean Emotional Intelligence Score
Banking & Finance	3.68
Education	3.23
Healthcare	3.42
Manufacturing	3.46
Non-profit	3.56
Retail	3.65
Technology	3.59

To test this hypothesis, we conducted a one-way ANOVA with emotional intelligence as the dependent variable and job position, age group, and industry as the independent variables. The results of the ANOVA are presented in Table 3. ANOVA Results for Emotional Intelligence by Job Position, Age Group, and Industry. The results of the ANOVA indicated that there is a significant difference in the level of emotional intelligence across different job positions ($F = 6.632$, $p < 0.001$), age groups ($F = 4.675$, $p = 0.002$), and industries ($F = 5.492$, $p < 0.001$). Post-hoc tests were conducted to identify specific differences among the groups. The results of the post-hoc tests are presented in Tables 1, 2, and 3.

CONCLUSION

Based on the analysis, we can conclude that emotional intelligence is a crucial factor that contributes to the productivity of an organization. The findings of the study show that organizations should focus on developing the emotional intelligence of their employees to improve their productivity and overall performance. The study also indicates that emotional intelligence is a trainable skill that can be developed through training programs and coaching.

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Abstract:

This study emphasizes the central role of consumers in all marketing processes, highlighting their significance in determining various aspects of purchasing behavior. The shift from a seller-centric market to one governed by consumer sovereignty underscores the importance of understanding customer preferences for successful marketing strategies. The objective of this research is to investigate consumer buying behavior, brand awareness, challenges in decision-making, and satisfaction levels related to chocolate cream biscuits.

Primary data, collected through close-ended questionnaires, forms the basis of this study. Among the youth, Britannia and Cadbury chocolate cream biscuits stand out as popular choices, driven by factors such as taste, preferences, affordability, and widespread availability. Consumer loyalty to a specific brand is evident, with a reluctance to recommend alternatives in the absence of their preferred choice. Purchases are predominantly made on a weekly basis or as needed, typically from local kirana stores, and chocolate cream biscuits are often consumed as snacks.

The study reveals that offers and discounts have minimal influence on consumers' decisions to switch to other cream biscuit brands. Additionally, consumers exhibit limited awareness of the ingredients in the chocolate cream biscuits they purchase. Any alterations in the taste of their preferred brand significantly impact their buying decisions. Overall, the findings shed light on key factors influencing consumer choices and preferences within the chocolate cream biscuits market.

Keywords: *Consumer buying behavior, Brand awareness, Decision-making challenges, Satisfaction levels, Youth demographic, Britannia and Cadbury*

Introduction

All marketing processes originate from a central point – the consumer. Therefore, each consumer holds significant importance for a marketer. Consumers play a decisive role in choosing what to buy, when to make a purchase, for whom the purchase is intended, the reasons behind the purchase, where to make the purchase, and the quantity to be purchased. To achieve success in marketing, it is imperative to comprehend the mindset of customers, their preferences or aversions towards various products, and also understand the timing and quantity of their potential purchases. This knowledge enables marketers to stock goods or offer services tailored to consumer preferences.

The traditional notion of "buyer beware" and a seller-dominated market is outdated. The prevailing concept now is consumer sovereignty, where manufacturers and sellers cater to the preferences of consumers. The term "consumer satisfaction" frequently used in marketing refers to how well products and services provided by a company meet or exceed consumer expectations. It is a subjective and abstract concept, with the actual level of satisfaction differing from person to person and product to product.

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The satisfaction experienced by a consumer depends on various psychological and physical variables, influencing behaviors such as return rates and recommendations. Additionally, the level of satisfaction can be influenced by alternative options available to the consumer and other products that serve as a basis for comparison against the organization's offerings.

Literature Survey.

S.P. Savitha conducted a study in 1946 focusing on consumer preferences for 'AMUL PRODUCTS' in Madurai city. AMUL, established in 1946 as the Anand Milk Producer's Union Limited, is a cooperative dairy movement in India. Being India's largest food brand, consumers trust AMUL for its quality products available at affordable prices. AMUL holds the number one position in the dairy industry, indicating a strong market presence. The objective of this research is to assess the current level of consumer satisfaction with AMUL products. With a positive reputation among consumers in Madurai, there is potential to expand its supply to rural areas.

Another study by Mohit Jamwal and Dr. Akhilesh Chandra Pandey explores consumer behavior towards cooperative milk societies, focusing on the customer satisfaction of 'Aanchal' milk, a member milk union of UDPC Ltd. Consumer behavior involves understanding how individuals decide to allocate their available resources (time, money, effort) to consumption-related items. The study measured customer satisfaction across various attributes of Aanchal milk, evaluating customer preferences based on different parameters. The survey findings suggest the need for effective evolution of production, marketing, and pricing strategies for Aanchal milk to enhance its overall performance in the market.

P. Rengarajan, R. Sathya, and R. Gothami conducted a study in 2000 titled "Buying Behavior of Selected Branded Milk Products." The research focused on the significance of dairy products in both urban and rural areas, considering the country's emergence as the largest milk producer in the 1990s. As the market size continues to grow, there is an increasing demand for these products. Consequently, companies must establish an efficient distribution network to meet the rising demand.

Mrs. Sonali Dhawan conducted a study that explored consumer behavior towards various branded and non-branded milk products, with a specific focus on Jabalpur district in Madhya Pradesh. Consumer behavior, defined as the actions exhibited by consumers, was a central theme in this research.

In 2017, V. Kannan undertook a study titled "A Study of Customer Preference and Attitude towards Britannia Products." This research emphasized the consumer and customer-oriented nature of modern marketing and business. The study investigated the relationship between demographic factors and consumer satisfaction and perception regarding Britannia products.

Mohit Jamwal and Dr. Akhilesh Chandra Pandey, in 2014, explored "Consumer Behavior towards Cooperative Milk Societies: A Study on Measuring Customer Satisfaction of 'Aanchal' Milk" as part of the IBWL 2020 conference. The study focused on understanding the satisfaction of customers with 'Aanchal' milk, which is a member milk union of UCDF Ltd.

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Dr. Rengarajan P, Sathya R, Gowthami R conducted a study in 2014 titled "Buying Behavior of Selected Branded Milk Products," published in the EPRA International Journal of Economic and Business Review (2014; 2(8):105-110). The research focused on understanding consumer preferences for specific branded milk products.

Sonali Dhawan conducted a study in 2016 on "Consumer Behavior towards Various Branded and Non-branded Milk" with a special focus on Jabalpur district in Madhya Pradesh. The findings were published in the Imperial Journal of Interdisciplinary Research (2016; 2(12):1582-1586).

Philip Kotler, Kevin Lane Keller, Abraham Koshy, and Mithileshwar Jha authored "Marketing Management: A South Asian Perspective," published by Pearson Education India in 2008. The book provides insights into marketing management from a South Asian standpoint.

Subhadeep Chakraborty carried out a study in 2016 on "Brand Preference of Consumers towards Selected Consumer Durables." The study aimed to identify the most preferred brands of consumer durables in the market. Factors such as cost-effectiveness, brand name, product design, advertising, friends' advice, and after-sales services were found to influence consumer preferences.

Jegan A. and Dr. Sudalaiyandi S. conducted a study in 2013 on "Consumer Buying Behavior towards Various Types of Sunfeast (ITC) Biscuits in Kovilpatti." The research focused on understanding consumers' preferences, awareness of various brands, choice criteria, and satisfaction levels with Sunfeast biscuits.

Dr. M. Arutselvi conducted a study in 2012 on "Consumers' Preference Towards Various Types of Britannia Biscuits in Kanchipuram Towns." The study explored consumer behavior towards Britannia biscuits, considering factors such as quality, quantity, price, taste, and advertising. Britannia biscuits were found to have a significant market share in Kanchipuram Town.

Mr. Muhesh Dhanna conducted a study in 1984 titled "Analysis of Consumer's Behavior" as a case study of soft drinks in Rohtak. The findings revealed that brand awareness was higher among male respondents compared to female respondents. Businessmen constituted the largest proportion of regular soft drink consumers, and the taste of the soft drinks played a crucial role in their purchasing decisions.

Research Methodology.

Statement of problem.

The chocolate cream biscuits market is predominantly led by key players such as Britannia's Bourbon and Treat, Cadbury's Oreo, Parle's Fab Bourbon, and ITC's Sunfeast range. In 2021, these well-established domestic brands collectively command a market share of 60%-70%. Their influence extends across the entire country, including rural areas, thanks to robust distribution networks.

These brands have successfully carved out their niche in the market and cultivated strong brand loyalty, particularly among consumers in the age group of 21-35, notably the youth demographic. Despite limited awareness about the specific components in chocolate cream biscuits, these consumers exhibit unwavering loyalty to their preferred brand within this category. Even when competing brands offer discounts and promotions, these loyal consumers are reluctant to switch to alternatives, showcasing the enduring strength of brand preference and trust established by Britannia, Cadbury, Parle, and ITC:

- What are major components which influence the youth to buy the chocolate cream biscuit?
- Is there any relationship between the demographics profile of the respondents and their preferred brand of chocolate cream biscuit?
- What is the satisfaction level of the youth with their preferred brand of chocolate cream biscuit?

Objective of the study

- The objective of the study is as follows-
- To study the consumer buying behavior towards chocolate cream biscuits.
- To understand the brand awareness towards chocolate cream biscuit.
- To identify the problems faced by consumer while taking decision.
- To understand the satisfaction level of the consumers towards chocolate cream biscuits.

Hypothesis

- H1: There is no significant relationship between the demographics of respondents and their preferred brand of biscuit.
- H2: There is no significant relationship between awareness of ingredients in the cream biscuit among the youth.
- H3: There is no significant relationship between satisfaction level of the youth towards their preferred brand of biscuit.

Data collection

Data can be categorized into two types: primary data source and secondary data source. Primary data is collected for the first time and is utilized for subsequent analysis. Secondary data, on the other hand, is sourced by the researcher from existing materials for organizational or individual use. This research incorporates both primary and secondary data sources. Secondary data have been procured from various sources, including published and unpublished theses, websites, and research articles from different journals. Primary data were gathered through a meticulously crafted questionnaire, developed by the researcher based on a review of literature relevant to the study.

The questionnaire was distributed among individuals who are consumers of chocolate cream biscuits. The research ensured the anonymity of respondents and encouraged them to freely choose any option. By having individuals complete the questionnaire at their convenience, the research aimed to allow respondents to focus on the dimensions without the pressure of recalling their service experiences.

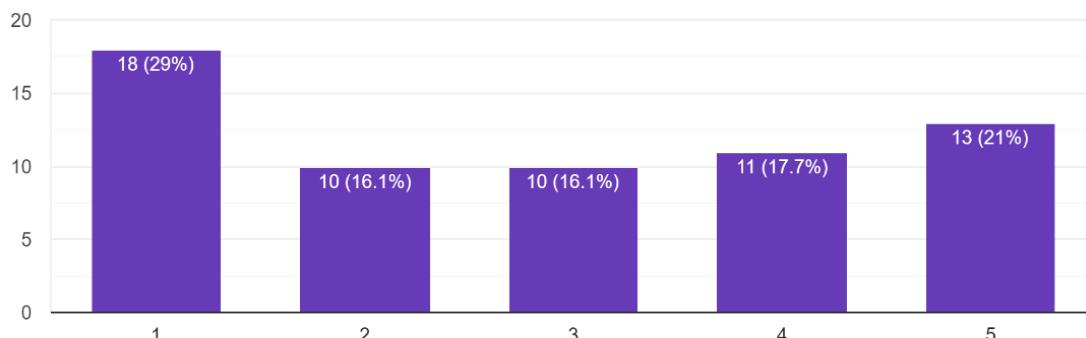
The structured questionnaire for this research project was designed to measure demographics, awareness, and customer satisfaction. It comprised two sections: Section A, focusing on background information of the respondents, and Section B, addressing factors influencing customer satisfaction, loyalty, and awareness. To enhance the accuracy and quality of responses, a 5-point Likert Scale was employed in the study.

Data analysis and Interpretation

How would you rate the product quality of the chocolate cream biscuit you buy? [on a scale of 1-5, where 1-Strongly agree and 5-Strongly disagree]

How would you rate the product quality of the chocolate cream biscuit that you buy?

62 responses



Product Quality

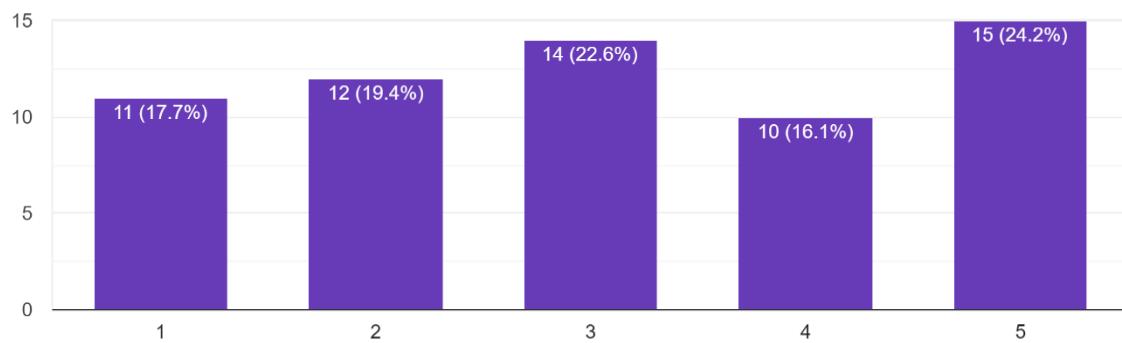
Product quality is one of the most important parameters while buying any product. A good quality product can attract the consumers toward the product and can influence their buying decision helping the company to generate good sales.

From the above figure we can clearly states that 29% of the total respondents rate the product quality as 1 which is strongly agree, while 21% of the total respondent's rate product quality as 5 which they strongly disagree. 16.1% of the total respondent remains neutral on the product quality.

Does the price of the chocolate cream biscuit you buy is fair?

Does the price of the chocolate cream biscuit you buy is fair?

62 responses



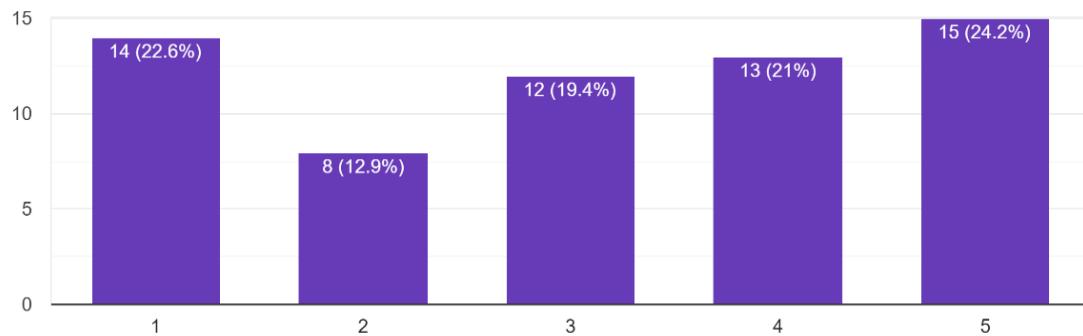
Fair pricing

Fair pricing refers to the pricing of a product as an affordable rate for all the consumer across the country. If the product is priced fairly then the consumers will definitely buy the product. From the above figure we can state that 24.2% strongly disagree that there preferred chocolate cream biscuit is fairly priced while 17.7% believe that there preferred chocolate cream biscuit is fairly priced. 22.6% of the total respondent population remains neutral in the fair pricing of there preferred chocolate cream biscuit.

Do offers and discounts influence your decision to buy chocolate cream biscuit?

Do offers and discount influence your decision to buy chocolate cream biscuit?

62 responses



Offers and discounts

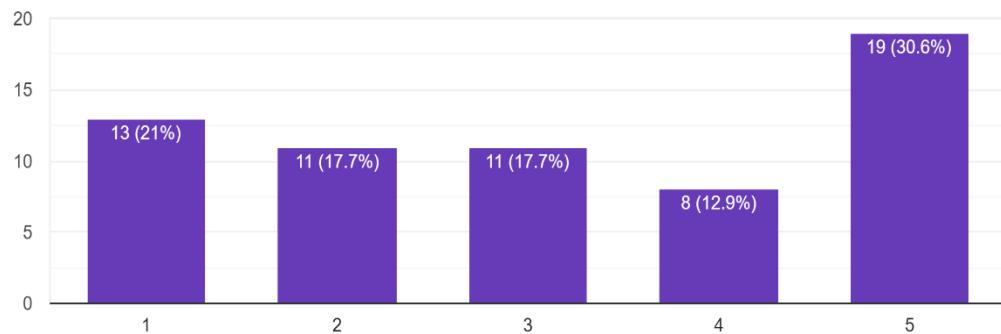
Offers and discounts are the most popular promotional strategies of a company to promote their product in the market. Consumers gets really attracted to this kind of schemes provides by any company about any product. But from the above figure we can see that 24.2% of the total respondent

strongly disagree that offers and discounts influence their buying decision there is a brand loyalty among these respondents about their preferred brand of chocolate cream biscuit. Whereas 22.6% of the total respondent population believe that they get attracted towards the offers and discounts. Therefore, there is a very mixed reaction among the respondent's population.

How does a good packaging influence you to buy other brand of chocolate cream biscuit?

How does a good packaging influence you to buy other brands of chocolate cream biscuit?

62 responses



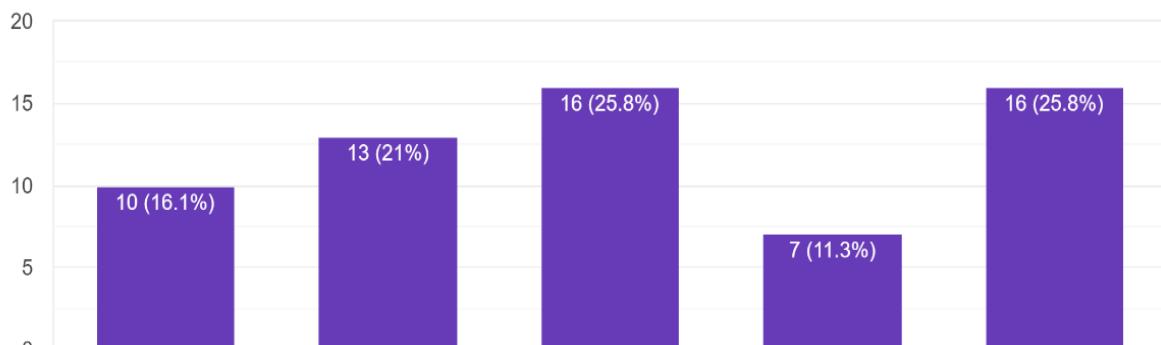
Good Packaging

A good packaging of any product act as an eye catchy thing for the consumers. Consumers can get easily attract to the packaging of the product and can purchase just for taste and if it tastes better, they can buy it regularly. However, in the above scenario about the chocolate cream biscuit the respondents are loyal to brand of the biscuit they use. 30.6% of the respondents feel that a good packaging does not influence them to buy other brand of chocolate cream biscuit. While 21% respondents feel that a good packaging attracts them to buy chocolate cream biscuit other than what they use. While 17.7% of the population remains neutral on this question.

Availability of chocolate cream biscuit influence your buying decision?

Availability of the chocolate cream biscuits influence your buying decision?

62 responses



Availability

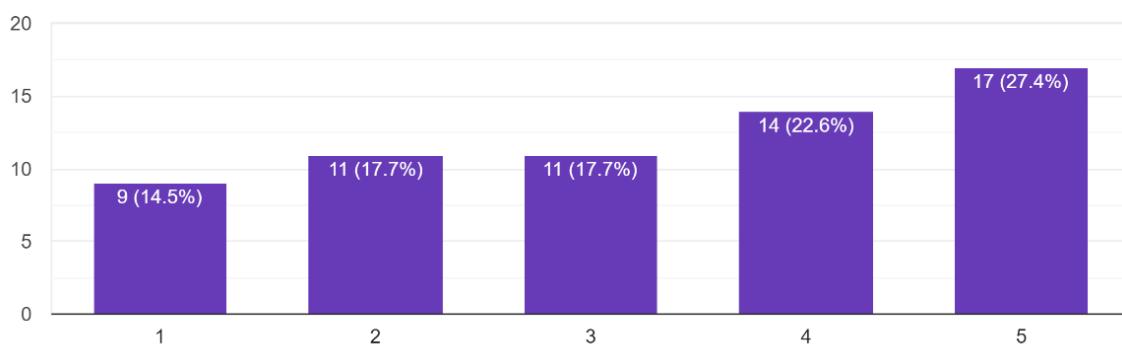
Availability here refers to the preferred chocolate cream biscuit of the respondents at a particular, at a particular time, timely availability is the key for the brands to success in today market scenario where this market is highly fragmented and there is very huge competition among the brands.

Thus, from the above figure we can see that 25.8% of the total respondents are either neutral or strongly disagree that availability of there preferred brand of chocolate cream biscuit affects there, buying decision.

How aware you are about the ingredients in the chocolate crem biscuit you buy?

How aware you are about the ingredients in the chocolate cream biscuit you buy?

62 responses



Ingredients

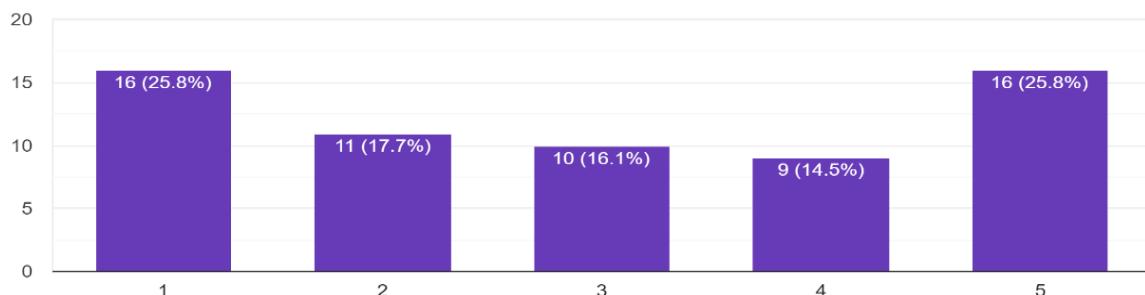
From the above bar graph awareness about the ingredients in chocolate cream biscuit among the respondents can be seen. The most of the respondents here are the youth of the Nagpur region. The awareness among them about the ingredients in the chocolate cream biscuit they is really less as 27.4% strongly disagree about the awareness among them and 22.6% disagree about this. Only 14.5% are really aware about the ingredients in the cram biscuit they buy. This low awareness can harm there health as they are not aware about what they are consuming.

Can a change in taste of your preferred chocolate cream biscuit would affect your buying decision?

Can a change in taste of your preferred chocolate cream biscuit would affect your buying

decision?

62 responses



Change in taste

Change in taste is a very critical criteria in any consumable product. It can either have a good impact or can even have, an bad one. Therefore, if changing a taste in the product can either lead in good sales volume or either can be a failed. From the above figure we can see that 25.8% of the

respondent's population strongly agree that change in taste can lead them to buy other brand of chocolate cream biscuit. On the other hand 25.8% of the respondents population believe that change in taste would not affect their buying decision and they will stay with the brand of there preference.

Conclusion

This research project is based on existing literature that provides us the preference of chocolate cream biscuit among youth. This research project, helps in studying the youth buying behavior towards chocolate cream biscuits. How they are aware about the brand of chocolate cream biscuit they consume what are the problems consumers faces while taking buying decision. How satisfied the consumers are with the brand of chocolate cream biscuit they prefer. The domestic brands have created a strong distribution network because of which the availability of the product even in the smaller area is high and a very little scope for a new entrant to enter. The consumers loyalty have been developed among these brands due to which the market have been developed of these domestic brands. The brands like Britannia, Cadbury, parle, ITC are among the top priority in the chocolate cream segment.

In this research paper consumer insight is collected from qualitative research in which data has been collected through a structured questionnaire. After the data analysis is done which shows that the components which influences the youth to buy chocolate cream biscuit. There is not such any close relationship between demographics profile and there preferred brand of chocolate cream biscuit. There is a customer satisfaction among the youth and there preferred brand of chocolate cream biscuit.

Recommendation and future scope

From the above research work it is clear that Britannia is the leader in the chocolate cream biscuit segment followed by Cadbury and parle after it. Therefore, these brand should use the marketing strategies which are used by Britannia. Due to the strong reach of the Britannia among the youth it will be very difficult for other player to compete. A strong customer loyalty makes it difficult for the competitors to compete. Major focus should be on product quality its packaging product price its availability these components should be kept in mind by these companies.

Future research should be done as an extension to current study. Future research work can be done on examine the relationship rather than simple association, between preferred of chocolate cream biscuit among the youth.

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- <http://dspace.christcollegeijk.edu.in:8080/jspui/bitstream/123456789/1142/17/CCASBBAR18.pdf>
- <https://core.ac.uk/download/pdf/80148306.pdf>
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Abstract

This research paper discusses the issue of occupational stress among male and female employees in the insurance sector. Male and female employees may experience different levels and types of occupational stress, which can have different effects on their job satisfaction, health, and overall well-being. This research paper aims to examine occupational stress between male and female employees of the insurance field. This study aims to investigate whether there is a higher occurrence of occupational stress among female and male employees in the insurance sector, and to identify the factors that contribute to this increase in stress. The study has four sub-objectives, including studying the relationship between gender and occupational stress, exploring how personal and professional factors contribute to stress, identifying reasons for occupational stress among male and female employees, and verifying whether stress levels differ by gender, age group, marital status, job position, and length of service among various demographic groups.

To investigate the sources and levels of occupational stress experienced by male and female employees in the insurance sector using a quantitative survey approach. The study collected data from 52 employees using a simple random sampling technique, drawing from various departments and levels of seniority to ensure diversity. In conclusion, chi-square tests were used in the research study to assess the relationship between gender and occupational stress, perceptions of gender disparities in social support and cooperation for insurance occupations, and experiences with gender-based discrimination in the insurance business. The results of the chi-square test showed that there was no difference between male and female employees in terms of work-related stress and perceptions of gender differences in social support and collaboration for positions in insurance.

Keywords- *Occupational Stress, Gender, Job Satisfaction*

Introduction

Stress at work is a significant trouble for both male and female employees, as it can negatively affect their job performance, health, and well-being. Job satisfaction, the way the work is organized, and whether or not the position offers security and flexibility, recognition and reward, and opportunities for advancement are all human factors that affect stress. Personal factors like self-perceived abilities, self-confidence, and the capacity to handle stress are also important (Talma & Ariela , 2012).

Literature Review

Occupational stress is defined in different ways over the years. In the Guidance on Work-related Stress issued by the European Commission in 2002, work-related stress is defined as ‘a pattern of emotional, cognitive, behavioral and physiological reactions to adverse and noxious aspects of work content, work organization and work environment’ (p.7); the main emphasis is on the workplace as the source of stress. The United States National Institute for Occupational Health and Safety, on the other

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² Professor, Dr. Ambedkar Institute of Management Studies and Research, Deekshabhoomi, Nagpur

hand, in its 1999 publication entitled ‘Stress at Work’, defines work-related stress as ‘the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources or needs of the worker’ (p.6), and expresses the view that working conditions are a primary factor, but that personal factors are also influential (G. Lokanadha Reddy and R. Poornima, 2012). The worker’s response to work stress can be either psychological, physical or both (Cooper & Cartwright, 1994; Kristensen, 1996; Santos & Cox, 2000), and is usually categorized as being acute, post traumatic, or chronic.

Objectives:

This research has the following objectives-

1. To study relationship between gender and occupational stress.
2. To study how personal and professional factors contribute to occupational stress in the insurance sector employees.
3. To identify various reasons of occupational stress among male and female.
4. To verify whether occupational stress levels show a discrepancy noticeably by gender, age group, marital status, job position, and length of service among various demographic groups.

Research Design including Sample design:

The research design for this study was a quantitative survey approach. The survey was administered to male and female workers in the insurance sector to gather information about their experience with occupational stress. The survey will be designed to capture both objective and subjective measures of stress, including physiological responses, behavioral indicators, and self-report. The study has collected data from a sample of 52 male and female employees from the insurance sector, selected using a convenience sampling technique. The sample was drawn from various departments and levels of seniority to ensure diversity. This approach aimed to capture a broad representation of the population and provide insight into the sources and levels of occupational stress experienced by male and female employees in the insurance sector.

Methodology of Analysis

A data analysis tool is an important part of any research study, especially those involving comparisons between two or more groups of data, which are key tools in the analysis of data. In order to draw conclusions based on empirical evidence, the Chi-square test is important for the reason that it is capable of identifying significant differences between observed and expected data, which is important for researchers in order to come to conclusions and make decisions based on empirical evidence. In addition, it provides valuable insights into how variables are related to one another and is a powerful tool for analyzing data. In the context of a study on occupational stress among male and female employees, the Chi-square test can be useful in several ways:

- Comparing stress levels between males and females: The Chi-square test can be used to compare stress levels of male and female insurance employees. It is possible for researchers to determine if a significant difference exists between the proportions of males versus females when it comes to the experience of high levels of stress by comparing the proportion of males versus females.
- Identifying factors associated with occupational stress: The Chi-square test may also be used to pinpoint variables linked to occupational stress in both male and female workers. For instance, researcher can examine the percentage of men and women in various professional categories or with various degrees of experience who report high levels of stress.
- Assessing occupational stress association with demographics: The chi-square test may also be used to examine relationships between stress levels and factors related to demographics, like age, education, and employment status. This research can determine whether particular

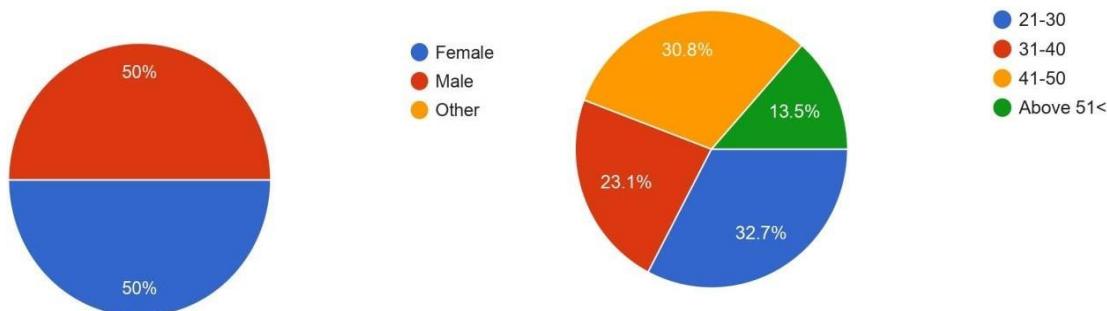
demographic groups are more likely to suffer stress and can assist guide focused measures to lessen stress.

Data Analysis

The data was analyzed on several parameters as follows-

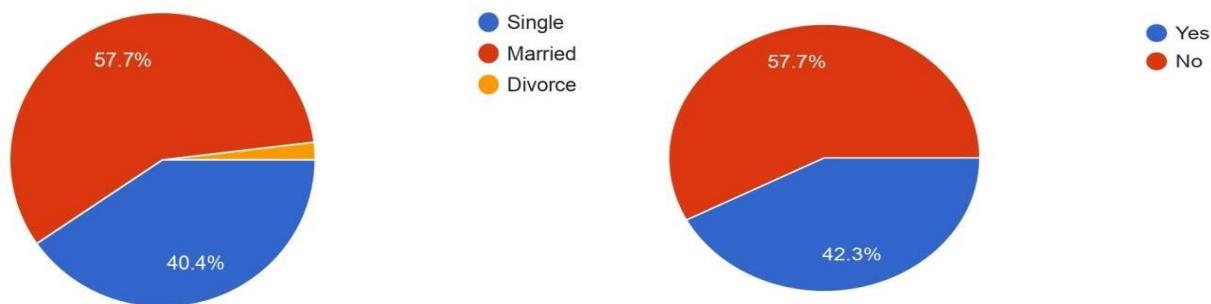
- Gender & Age

Fig :Sample responses to the statement of Gender & Age.



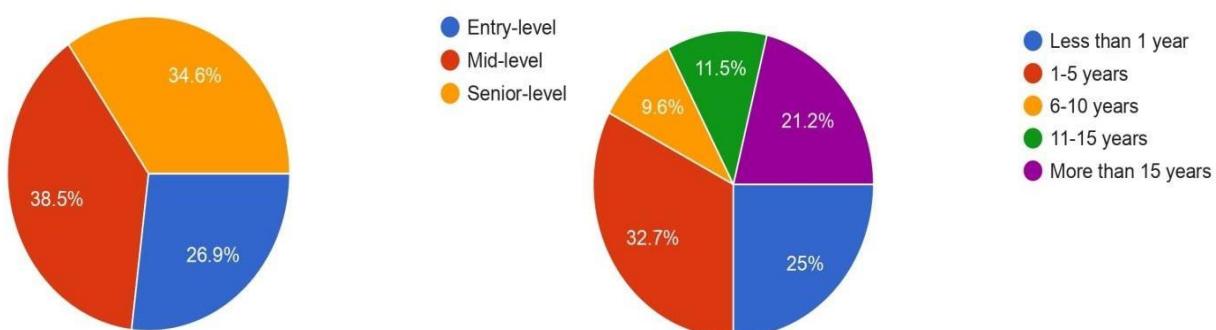
- Marital Status & Only Provider of family

Fig :Sample responses to the statement of Marital Status & Only Provider of family.



- Job Position & Working years in the insurance sector

Fig :Sample responses to the statement of Job Position & Working years in the insurance sector



Crosstab 1*Table : Interpretation of statement “I am stressed at work”*

		<i>I am stressed at work</i>					Total	
		Always	Never	Often	Seldom	Sometimes		
Gender:	Female	Count	0	7	4	2	13	26
		Expected Count	1.0	4.5	5.0	2.0	13.5	26.0
		% within Gender:	0.0%	26.9%	15.4%	7.7%	50.0%	100.0%
		% within I am stressed at work	0.0%	77.8%	40.0%	50.0%	48.1%	50.0%
	Male	% of Total	0.0%	13.5%	7.7%	3.8%	25.0%	50.0%
		Count	2	2	6	2	14	26
		Expected Count	1.0	4.5	5.0	2.0	13.5	26.0
		% within Gender:	7.7%	7.7%	23.1%	7.7%	53.8%	100.0%
		% within I am stressed at work	100.0%	22.2%	60.0%	50.0%	51.9%	50.0%
		% of Total	3.8%	3.8%	11.5%	3.8%	26.9%	50.0%
Total		Count	2	9	10	4	27	52
		Expected Count	2.0	9.0	10.0	4.0	27.0	52.0
		% within Gender:	3.8%	17.3%	19.2%	7.7%	51.9%	100.0%
		% within I am stressed at work	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	3.8%	17.3%	19.2%	7.7%	51.9%	100.0%

This table purports to display the findings of a survey in which participants were asked to rate their degree of workplace stress using the options "Always," "Often," "Sometimes," "Seldom," and "Never." The distribution of replies by gender is also included in the table. In order to get the predicted count for each cell, it was assumed that there was no correlation between gender and workplace stress. The actual number of respondents for each gender who provided that response is shown by the observed count in each cell.

Table : Chi-square test of statement “I am stressed at work”

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.215 ^a	4	.266
Likelihood Ratio	6.154	4	.188
N of Valid Cases	52		

a. 6 cells (60.0%) have expected count less than 5. The minimum expected count is 1.00.

The first test is the Pearson Chi-Square test that calculated the discrepancy between the

frequencies of categorical variables that were actually observed and those that would have anticipated if there was no association between them. The test statistic in this instance is 5.215 with 4 degrees of freedom (df), and the asymptotic significance, often known as the p-value, is .266. Given that the p-value is higher than the usual alpha level of .05, this means that there is no statistically significant difference between the observed and predicted frequencies.

The second test, the Likelihood Ratio test, is comparable to the Pearson Chi-Square test but is seen to be more reliable in some circumstances. The p-value in this case is .188, and the test statistic is

6.154 with 4 degrees of freedom (df). As the p-value is higher than .05., this once more shows that there is no statistically significant difference between the observed and predicted frequencies.

Table: Chi-square test of statement “I feel there is a gender difference in the support and cooperation provided by the society for insurance job.”

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.292 ^a	4	.368
Likelihood Ratio	5.086	4	.279
N of Valid Cases	52		

a. 4 cells (40.0%) have expected count less than 5. The minimum expectedcount is 1.00.

The statistical significance of the association between gender and the frequency of experiencing stress at work, as well as the association between gender and the perception of a gender difference in the support and cooperation offered by society for insurance jobs, is assessed based on the results of the chi-square tests.

The Pearson Chi-Square statistic for the first test (gender and work stress) is 4.292, with 4 degrees of freedom, and a p-value of .368 (asymptotic significance). The probability ratio statistic has a p-value of .279, is 5.086, and has 4 degrees of freedom. We cannot rule out the null hypothesis that there is no significant relationship between gender and how frequently people experience stress at work because both tests have p-values higher than .05.

Crosstab 2

Table : Interpretation of statement “I have experienced any form of gender-based discrimination in insurance profession.”

		<i>I have experienced any form of gender-based discrimination in insurance profession</i>					Total	
		Always	Never	Often	Seldom	Sometimes		
Gender:	Female	Count	1	11	3	2	9	26
		Expected Count	2.5	9.5	5.0	2.0	7.0	26.0
		% within Gender:	3.8%	42.3%	11.5%	7.7%	34.6%	100.0%
		% within I have experiencedany form of gender-based discrimination in insurance	20.0%	57.9%	30.0%	50.0%	64.3%	50.0%

	profession					
	% of Total	1.9%	21.2%	5.8%	3.8%	17.3% 50.0%
Male	Count	4	8	7	2	5 26
	Expected Count	2.5	9.5	5.0	2.0	7.0 26.0
	% within Gender:	15.4%	30.8%	26.9%	7.7%	19.2% 100.0%
	% within I have experiencedany form of gender-based discrimination in insurance profession	80.0%	42.1%	70.0%	50.0%	35.7% 50.0%
	% of Total	7.7%	15.4%	13.5%	3.8%	9.6% 50.0%
Total	Count	5	19	10	4	14
	Expected Count	5.0	19.0	10.0	4.0	14.0
	% within Gender:	9.6%	36.5%	19.2%	7.7%	26.9%
	% within I have experienced any form of gender-based discrimination in insurance profession	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	9.6%	36.5%	19.2%	7.7%	26.9%

It indicates that there may be a gender difference in the experiences of gender-based discrimination in the insurance industry, according to the contingency table and chi-square tests. 26 men and 26 women out of the 52 respondents were surveyed. Only 8 of the male respondents said they had never experienced gender-based discrimination, compared to 11 of the female respondents. In contrast, just 1 female respondent and 4 male respondents claimed to have consistently experienced gender-based discrimination. The chi-square tests indicate that there are no statistically significant differences in the replies from male and female respondents, however it should be noted that some of the predicted cell counts are relatively low (less than 5), which may reduce the test's reliability.

Table : Chi-square test of statement “*I feel there is a gender difference in the support and cooperation provided by the society for insurance job.*”

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.017 ^a	4	.286
Likelihood Ratio	5.208	4	.267
N of Valid Cases	52		

a. 4 cells (40.0%) have expected count less than 5. The minimum expected count is 2.00.

The Chi-Square test's reliability may be impacted by the fact that 40% of the cells have an anticipated count of fewer than 5, which is important to note. However, this is not a significant issue in this instance because the minimum predicted count is 2.00. In general, it cannot be inferred from the Chi-Square test results that there is a substantial correlation between gender and encountering gender-based discrimination in the insurance industry.

Conclusion

The aim of this research was to investigate if there are any differences in perceived occupational stress levels between female and male employees in the insurance industry. Both men and women employed in the insurance sector experience high levels of occupational stress, regardless of their gender, with no significant differences between the levels of stress they experience in terms of their overall levels of stress.

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Abstract

Employee attrition poses a significant challenge in the healthcare sector, particularly within hospital settings. This abstract provides a succinct overview of the multifaceted issue of employee attrition in hospitals, exploring its various determinants and proposing effective strategies for mitigation. The chapter delves into the intricacies of factors such as job satisfaction, workload, career development, and compensation, shedding light on their influence on staff retention. The examination of employee attrition is approached from both theoretical and practical perspectives, aiming to equip hospital administrators with actionable insights. Strategies for retaining hospital staff, including engagement initiatives, training and development programs, flexible work arrangements, and mentorship structures, are discussed in detail. Through the analysis of successful case studies and lessons learned from employee exit interviews, the chapter offers valuable real-world examples that underscore the importance of tailoring retention strategies to the unique challenges faced by healthcare professionals. As hospitals strive to create positive work environments and invest in employee well-being, this chapter provides recommendations for administrators to proactively address attrition. By emphasizing the significance of a holistic approach to employee retention and anticipating future challenges, the abstract sets the stage for a comprehensive exploration of the topic in the full chapter. The role of technology in addressing attrition is also considered, providing a forward-looking perspective on potential solutions. This chapter gives an overview of the healthcare sector and focus on the factors of the employee attrition in healthcare industry. As managing the attrition rate in hospitals is significant to improve the quality of customer satisfaction, so the management of employ attrition rate has also been discussed.

Keywords: *Healthcare Industry , employee attrition, employee retention strategies, Health Care Employees, Management system .*

Introduction

In India, the healthcare industry has grown significantly in terms of income and employment. There are several reasons for the rapidly growing Indian healthcare sector, such as increased public and private sector investment, increased coverage, and improved services. India has a competitive advantage due to its large pool of highly skilled medical professionals. India is also reasonably priced in relation to its competitors in Asia and the West. In India, the cost of surgery is around a tenth that of procedures in the US or Western Europe. Between 2016 and 2022, the size of India's healthcare sector is expected to triple, growing at a compound annual growth rate (CAGR) of 22% to reach US\$ 372 billion from US\$ 110 billion in 2016. It is expected that by FY22, India's healthcare system will be valued at US\$ 349.1 billion. The "Services e-Health Assistance & Tele-consultation (SeHAT)" OPD webpage was created by Mr. Rajnath Singh, the Minister of Defence, to provide telemedicine services to veterans and active military personnel.

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The National Commission for Allied & Healthcare Professions Bill 2021 was approved by the Parliament with the intention of establishing a body to oversee and uphold the service and educational requirements for those in the healthcare industry.

The other factor contributing to India's competitive edge is the higher success rate of Indian businesses in obtaining approvals for their ANDAs, or abbreviated new drug applications. India also provides a plethora of chances for medical tourism and R&D. In conclusion, there are numerous options to fund the infrastructure of healthcare in both urban and rural places.

What is employee attrition rate?

Taylor (1998), Employee retention and attrition are relatively common trends in the world. Employee turnover can be defined as "the ratio of the number of workers replaced in the given time period to the average number of workers". It essentially informs us how long a person will work for a particular organization. Since skilled staff members are the cornerstone of any business, a high turnover rate may be detrimental to their output, skill to create revenue, and credibility.

The total number of employees that depart a company over a given time frame is referred to as employee turnover. Businesses track both voluntary and involuntary turnover, such as resignations and layoffs, as well as the expense of replacing a specific class of workers. Many employers also compute the optimal turnover rate for their company, taking into account that turnover can present opportunities to replace underperformers, allowing managers to establish targeted employee retention objectives. Every business confronts employee turnover. Forward-thinking businesses take the time to analyze their turnover rate, the reasons behind it, and the steps they can take to develop and keep a workforce that will support the achievement of their corporate objectives.

Challenges faces by healthcare industry in context of employee attrition.

The healthcare industry faces a pressing challenge with the phenomenon of employee attrition, particularly within the dynamic environment of hospitals. Employee attrition, the departure of skilled healthcare professionals from their positions, not only disrupts the continuity of patient care but also imposes significant financial and operational burdens on healthcare institutions. The intricate nature of this issue necessitates a nuanced understanding of its determinants and the development of targeted strategies to mitigate its impact.

In 2022, the turnover rates in the healthcare industry ranged from 19.5% in hospitals to 65% in at-home care providers and 94% in assisted living facilities. This amount of turnover places a financial and logistical strain on healthcare providers. There was a personnel deficit in the healthcare industry long before the pandemic, despite the fact that COVID-19 intensified the strain on the workforce and will likely continue to harm the industry for years to come. The following causes are also having an impact on the current outflow of healthcare workers: strict and arduous schedules. The healthcare sector is known for its long hours and erratic schedules. Many jobs are considered "deskless," meaning that workers spend a significant amount of their time on the go. Hospital nurses are estimated to walk five miles every day.

Hospitals in India are considering a number of strategies to stop the growing attrition in the medical field, which is primarily affecting nurses.

Major hospitals continue to have a high demand for both temporary and permanent staff, which encourages widespread talent theft among hospital majors. The attrition rate among employees at Fortis Healthcare, Medanta, and Yatharth Hospitals, among others, is still over thirty percent.

The reason for the high attrition is the healthcare industry's explosive growth, which is expected to reach \$132 billion by the end of 2023 at a compound annual growth rate (CAGR) of 16–17 percent, according to Niti Aayog.

At Yatharth Hospitals, attrition among doctors is over 46%, but it is approximately 74% among nurses. In the context of hospitals, factors contributing to employee attrition extend beyond traditional

employment concerns. Job satisfaction, workload stress, limited career development opportunities, and compensation misalignment are critical elements influencing healthcare professionals' decisions to stay or leave. Understanding the unique dynamics of the healthcare workforce is paramount to developing effective retention strategies.

This paper gives an overview of the healthcare sector, including the rates of employee attrition and retention as well as important factors that add to these patterns & sets the stage for a comprehensive exploration of employee attrition in hospitals, delving into the multifaceted reasons behind the phenomenon. This paper aims to offer hospital managers useful insights and workable solutions by addressing the specific problems faced by healthcare professionals. The ultimate objective is to increase workforce stability and, as a result, the overall quality of patient care.

Review of Literature:

The following are the studies which are contributing in the present study.

- Nayak T., (2016) in her research examines the relation between workers' intentions to quit and their Quality of Work Life (QWL) in private healthcare institutions in India. 609 healthcare workers in Odisha are the subjects of an inquiry investigating job aspects, HR interventions, QWL, employee commitment, and turnover intention. The findings demonstrate a robust relationship between work attributes and QWL, which is enhanced by HR interventions. The intention to depart has an inverse correlation with employee commitment and QWL. QWL and intention to leave are partially mediated by employee commitment. The study offers a thorough framework that healthcare organizations can use to improve employee well-being, lower attrition, and give priority to workplaces that are friendly to workers.
- Rajan D, (2017) author investigates how nurses at single-specialty and multi-specialty hospitals view the effect of personnel turnover on the performance of current nurses. In comparison to their counterparts in multi-specialty hospitals, the 120 nurses in the sample—who were split between the two types of hospitals—show greater worries about workload, work time, loss of interest, job stress, and information provision in single-specialty hospitals. Regarding health-related difficulties, conflict, commitment, and morale, both groups have comparable perspectives. Unexpectedly, nurses under 30 who are married, make less than Rs. 8,000 per month, and have less than two years of experience exhibit a greater knowledge of the negative effects of personnel turnover on their work output.
- Srivastava D.K & Nair P. (2017) in their research covered one of the effects of economic expansion is employee churn, which is the term for when workers leave an organization either voluntarily or involuntarily and result in large expenses. The article promotes using labor analytics to forecast and manage attrition. Management may keep valuable personnel by detecting attrition risks. With a specific focus on voluntary terminations in employee attrition, the suggested approach applies predictive analytics, making use of statistical analysis, data mining, and machine learning to reliably estimate future events based on historical and present data.
- Shukla, Kasturi; Deb, Ruchismita, (2017) in their cross-sectional study in an Ahmedabad hospital compares the viewpoints of departing and current staff in an attempt to identify the causes of attrition. 57% of the attrition rate, according to the report, is among nurses (26%). The main "blanket reasons" that emerge from exit interviews are improved prospects. Exit interviews are seen as record-keeping by 72.5% of departing employees, while their usefulness is unclear to 11% of them. Attrition factors cited by current employees include compensation, task assignment, favoritism, and monotony. The study's conclusion, which suggests the necessity for in-depth conversations with departing employees to improve retention measures, is that exit interviews might not fully discover the reasons behind turnover.

- Christiani L. & Ilyas J., (2018) in their research, tackles the ongoing problem of employee turnover in hospitals, which is mostly caused by elements like low job satisfaction, a hostile work atmosphere, and an overwhelming workload that lowers motivation to stick around. The analysis, which took place between October and December 2017, used a narrative assessment of pertinent publications and journals to identify the main causes of nurse turnover. Those causes included unfavorable work environments, job discontent, and insufficient managerial ties. In order to promote nurse retention, the study's conclusion makes options for changing policies to improve the working environment.
- Dr. Asim M. & Alam A. (2019), in their research evaluates the intention of nurses to leave their jobs and their level of job satisfaction. It focuses on aspects such as career development, task clarity, pay, supervision, and organizational policy satisfaction. Significant negative correlations between all these factors and turnover intention are found using data from 400 nurses in various hospitals. Additionally, there is a strong negative correlation between the intention to leave and overall job satisfaction. In order to reduce nurses' intentions to leave their jobs, the study emphasizes the significance of organizational policies, supervision, pay, task clarity, and career development.
- Mheiri S., Jabeen F. & Abdallah S.. (2021), Analytic Hierarchy Process (AHP) is used by researchers to identify and rank the factors impacting talent retention in the public healthcare sector in the United Arab Emirates. Six criteria and nineteen sub-criteria that were taken from the literature are included in the study. Administrators, medical staff, and medical researchers were interviewed to obtain data. Administrators place more value on recognition, whereas medical staff place more value on career development and succession planning. Sustainable practices are emphasized by researchers. Given the competition from the private sector, the paper suggests adjusting retention strategies based on professional groups to address the issue of talent retention in the UAE public healthcare sector.
- Kumar K.K., Mishra K.S., Budhwar P.,(2021) in their research discuss about the talent retention Because of India's distinct social background, the "war for talent" is not limited to mature economies but also include rising ones. This chapter examines the institutional, legal, and cultural factors that impact talent retention in India. Prior to liberalization, public and private companies were thought of being lifelong employers and had little employee turnover. Private players grew after liberalization, and turnover was tolerated. The authors examine Indian employee retention and departure factors, offering insights to practitioners and scholars alike. They illustrate the transition from a mindset of steady employment to one of adjusting to corporate turnover norms.
- Mozaffari F., Rahimi M., Yazdani H., Sohrabi B.(2022) in their research With a focus on an Iranian pharmaceutical company, this study creates a predictive model for identifying high-risk employee attrition. The study uses a mixed research methodology, combining interviews with human resource managers and sophisticated data mining algorithms. With 89% accuracy, the predictive model generated by the gradient boosting machine algorithm is produced. The results demonstrate how well the mixed research approach works to pinpoint the variables that affect employee churn. The findings also discuss how remote work and the COVID-19 pandemic affect attrition, and they end with human resource policies based on factors that were found.
- Shrivastava O. , Dr. Raghuvanshi S., Khare K.V.(2023), in their research examining the reasons behind the high employee turnover in the private healthcare sector, this study places a strong emphasis on work-life balance as a vital component of worker wellbeing. Organizational, personal, and work-related factors are identified as major contributors to turnover in the extensive literature review. The study recommends more research using qualitative or mixed research methodologies, with an emphasis on projects, organizations, and professional staff. In

the end, it is believed that lowering turnover rates is critical to improving workers' quality of life, highlighting the significance of work-life balance in reaching this objective.

Objectives of study:

- The study aims to gain understanding into the employee's attrition rate in healthcare in India.
- To map the variables that affect healthcare employees' attrition.
- To discuss the management of employee retaining strategies.

Methodology

This book chapter is mainly bases on secondary data. The data has been taken from various research papers, journals to understand the employee's attrition rate in hospitals.

Discussion

Importance of Employee Retention in Hospitals

Employee retention holds paramount importance in the context of hospitals due to its direct and profound impact on healthcare delivery, patient outcomes, and organizational effectiveness. In the intricate web of healthcare services, the continuity and quality of patient care rely heavily on the expertise and experience of healthcare professionals. High rates of employee turnover not only disrupt the established relationships between healthcare providers and patients but also compromise the institutional knowledge essential for effective medical interventions.

Moreover, the healthcare sector demands a specialized skill set, and the loss of experienced professionals can lead to a shortage of qualified staff. This scarcity not only strains the remaining workforce but can also impede the hospital's ability to meet the diverse and complex needs of its patient population.

In addition to the clinical implications, high turnover rates pose financial challenges for hospitals. Recruitment, onboarding, and training of new staff incur significant costs, diverting resources that could otherwise be allocated to patient care enhancements or facility improvements.

Therefore, prioritizing employee retention in hospitals is not merely a matter of workforce management but a strategic imperative for sustaining the delivery of high-quality healthcare services, fostering a positive organizational culture, and ensuring the long-term viability of healthcare institutions in the ever-evolving landscape of the medical field.

Factors Contributing to Employee Attrition

A wide range of factors influence employee attrition in hospitals, which in turn affects the departure of qualified experts from their positions. Job satisfaction, a pivotal element, is often impacted by workload stress, inadequate recognition, and insufficient opportunities for professional growth. The demanding nature of healthcare roles, coupled with burnout risk, can lead to a decline in overall job satisfaction.

Career development opportunities also play a significant role. Healthcare professionals seek roles that offer continuous learning and advancement, and a lack of such opportunities can contribute to attrition. Compensation and benefits, including competitive pay and non-monetary perks, are critical factors influencing employees' decisions to stay or leave.

Furthermore, organizational culture and leadership effectiveness can contribute to attrition. A negative work environment, poor communication, or lack of support from leadership may drive professionals away. Personal factors, such as work-life balance and the compatibility of job demands with personal commitments, also contribute to attrition.

Understanding and addressing these multifaceted factors are essential for hospitals to develop effective retention strategies. By recognizing the unique challenges faced by healthcare professionals,

hospitals can create an environment that fosters job satisfaction, provides opportunities for growth, and ultimately mitigates the factors contributing to employee attrition.

Strategies for Retaining Hospital Staff:

Implementing effective strategies for retaining hospital staff is crucial to maintaining a stable and skilled workforce. Employee engagement initiatives, such as creating a positive workplace culture and acknowledging employees' contributions, can enhance job satisfaction and foster loyalty. Providing continuous training and development opportunities allows healthcare professionals to expand their skills and advance their careers within the organization.

Flexible work arrangements, including options for part-time work or alternative schedules, can contribute to a better work-life balance, addressing one of the key concerns of healthcare professionals. Mentorship programs offer support and guidance, promoting a sense of belonging and professional growth.

Financial incentives, competitive compensation, and attractive benefits packages are pivotal in retaining hospital staff. Hospitals must regularly review and adjust these offerings to remain competitive in the healthcare job market.

Regular feedback tools, such as staff surveys and performance reviews, aid in identifying concerns and potential areas of expansion. Hospital administrators need to pay close consideration to staff feedback and implement changes accordingly. Additionally, recognizing and celebrating achievements can boost morale and job satisfaction.

Conclusion:

In conclusion, addressing employee attrition in hospitals requires a holistic and strategic approach to cultivate a work environment that nurtures professional satisfaction and growth. The multifaceted factors contributing to attrition, including job dissatisfaction, workload stress, and limited career development, necessitate tailored strategies for retention.

By implementing robust employee engagement initiatives, hospitals can enhance workplace morale and foster a sense of belonging among staff. Investing in continuous training and development opportunities ensures that healthcare professionals stay current and see a future within the organization. Flexible work arrangements and mentorship programs contribute to work-life balance and professional guidance, addressing key concerns that lead to attrition.

Financial incentives, competitive compensation, and attractive benefits are pivotal in retaining skilled healthcare professionals. Regular feedback mechanisms enable hospitals to adapt and respond to the evolving needs and concerns of their workforce.

Celebrating achievements and recognizing contributions further solidify a positive organizational culture. In prioritizing employee retention, hospitals not only ensure the stability of their workforce but also fortify their ability to provide superior patient care. This comprehensive approach not only tackles the pressing issues of attrition but also sets hospitals up for long-term success in the constantly evolving healthcare delivery environment.

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Abstract

This paper examines the impact of union elections on volatility of stocks in India. The study is conducted on a sample of NIFTY 50. The data is considered for a total of 6 months 3 months pre elections and 3 months post election Analysis is done using Descriptive statistics and RSI tools and we have concluded that majority of the stocks under consideration are more volatile post elections, which show that investors are surprised from the election outcomes. Our findings have an important implication for optimal strategies of risk- adverse stock market investors and participants in the Equity market.

Keywords: Volatility, Descriptive statistics, RSI

Introduction

Country's political affairs can exert significant impact on its earnings distribution and prosperity. In democratic circumstances, voters elect parties which best characterize their personal opinions and welfares. The economy will be stimulated by weak expansionary policies before the elections, and harsh actions aimed at curbing the resultant inflation will have to follow at the commencement of the new period of office. It has to be noted, however, that any policy induced cycles in real activity will be concise if the economic agents and voters have balanced expectations.

Politicians are frequently concerned with the performance of the stock markets and economies of the countries and regions over which they preside. The ways to handle the economy during times of elections can be debated endlessly by candidates. With economic concerns heavily influencing politicians' agendas, it could be expected that investors take the actions of political officials in to consideration when choosing where to invest.

A political election is an occasion that could turn out to be significant to investors. With a strong link between politics and the performance of the economy, an election could be a turning point that changes investors' outlooks on stock indices. Having certain administrations in command may be favorable for investors compared to other political parties. If this is the case, an election could be appoint where people begin drawing their money out of equity markets in these countries or increasing their investments in these countries. Given the major impact an election can have, the query arises as to how this event could impact the stock indices of the respective country.

Volatility is linked with randomness, uncertainty and has implications for variance risk. Generally, people tend to see volatility as a indication of market disturbance where by securities are not being priced moderately and the capital market is not functioning as fine as it should. The changes in the volatility of stock market income are capable of having major negative effects on risk adverse investors and the economy. In this context, enlarged volatility in domestic stock market can impact consumption patterns, corporate capital investment decisions, leverage decisions, the business cycle and macro economic variables.

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The study of financial assets volatility is important to academics, policy makers, and financial market participants for several reasons. First, forecast of financial market volatility is significant to economic agents because it represents a measure of risk exposure in their investments. Second, a volatile stock market is a serious concern for policy makers because instability of the stock market creates uncertainty and thus adversely affects growth prospects.

Literature Review

Piyush Kumar Chowhan and Vasant Shukla (2000) in their research paper “Volatility in Indian stock markets” carried out an experiential study of BSE Sensex and a set of representative stocks are carried out to find the changes in their volatility in the last 2 years.

The evidence in the paper **“Political Events and the Stock Market: Evidence from Israel” by Tzachi Zach (2003)**, demonstrates that the income on the Israeli stock market’s main index following political events are more extreme than there turns on the same index in other days.

Bernd Hayoand AliM. Kutan (2004) in their research paper “The Impact of News, Oil Prices, and Global Market Developments on Financial Markets” argued that the international influence on financial markets depends upon the degree of financial liberalization.

In research paper **“Relationships between stock markets and macro economic variables” by Sezgin Acikalin, Rafet Aktasand Seyfettin Unal (2008)** it was concluded that there is a clear effect of stock market on the moves of interest rate but the net impact whether positive or negative is uncertain.

Anuradha Guru(2009), in her research paper **“What moves stock prices and How”** showed what all events affect stock prices, which helped to classify events into major five categories. Movements of stock prices are observed to depend on macro economic factors, like, domestic and international, economic, social or political events, market sentiments or hopes about future economic growth path or important budgetary, monetary and fiscal policy announcements etc.

Renuka Kinger (2009), in her article **“Volatility of stock market and its causes”** proposes that root cause of stock market volatility is surprising in formation breaking out in the market. So she concluded that portfolio should have margins to accommodate volatility caused due to various events.

Debashis Kundu (2009) in his research paper **“Do unexpected events cause significant market volatility”** concluded that major domestic and international events do not Cause significant volatility in Indian stock market. He also found that a macro-economic event sometimes affects stock market indexes but not all the time. In article **“Impact of Terror Attacks on Indian Stock Prices.”**

Significance of the Study

The study of volatility in the Indian stock market in relation to the event like union elections is important for several reasons. Firstly, volatility is synonymous with risk and therefore increase in risk associated with a given economic activity should therefore see a reduced level of participation in that activity. In other words, when the Indian stock market exhibits high volatility a reduced level of participation can be expected and can lead to adverse consequences for investment in the local stock market. Secondly, changes in stock market volatility, basically can affect the consumption pattern, corporate investment decision, leverage decisions, the business cycle and macroeconomic variable of that country.

Statement of Problem

The study emphasizes the importance of understanding volatility in the Indian stock market, particularly concerning events like union elections. Volatility is associated with risk, and an increase in risk may lead to reduced participation in the stock market, affecting investment.

Objectives of the Study

- To investigate how the Indian stock markets behave on the Election announcement in terms of its volatility.
- To measure and compare the daily stock returns pre and post elections.
- To analyse the volatility behavior of selected companies listed in NSE.

Research Methodology

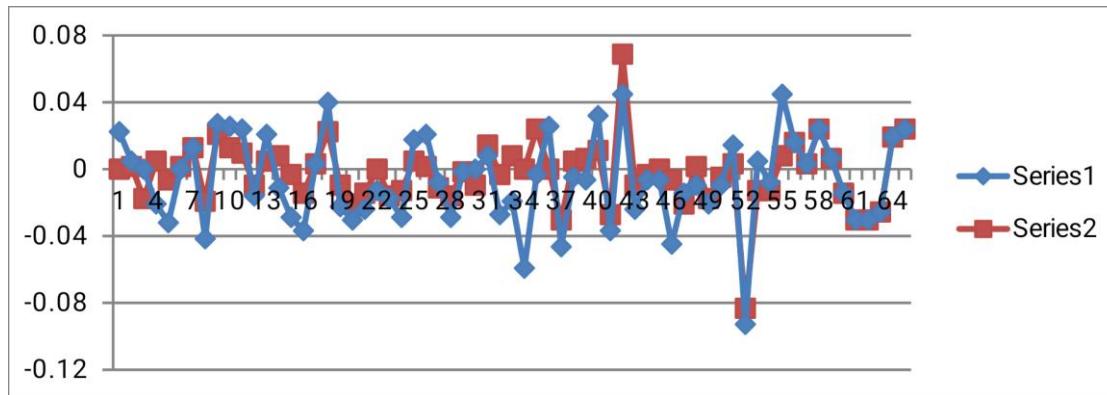
The research uses samples from the NIFTY 50 index, employing non-probability convenience sampling. Data for the analysis includes daily closing prices of stocks from the NSE website, and descriptive statistics are used for analysis.

Analysis

Descriptive Statistics of NIFTY 50

Table 1: Showing data during 1991

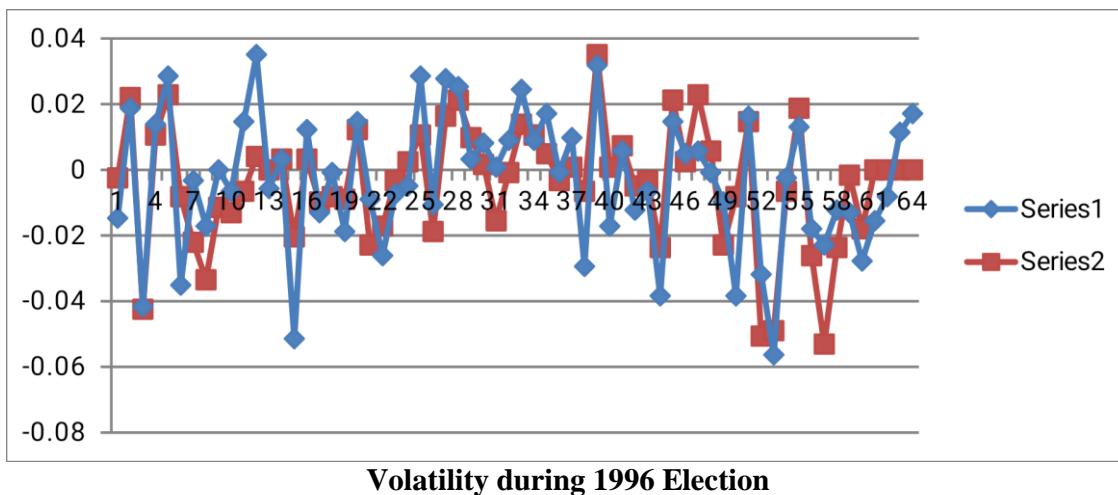
	Standard Deviation	Annualized SD	Skewness	Kurtosis
Pre Election	27.46039	165.8914	-0.72371	-0.45597
Post Election	54.553358	42.50673	-0.281319	-1.39478



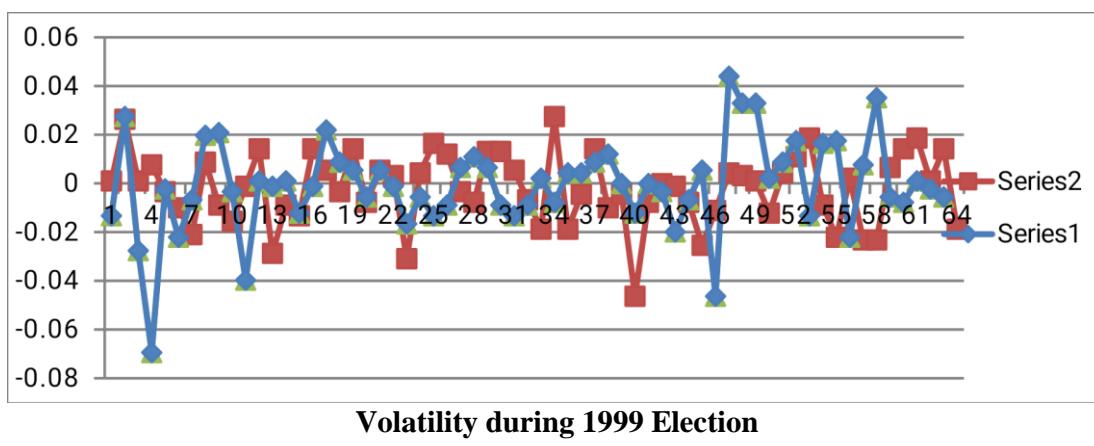
Volatility during 1991 Election

Table 2: Showing data during 1996

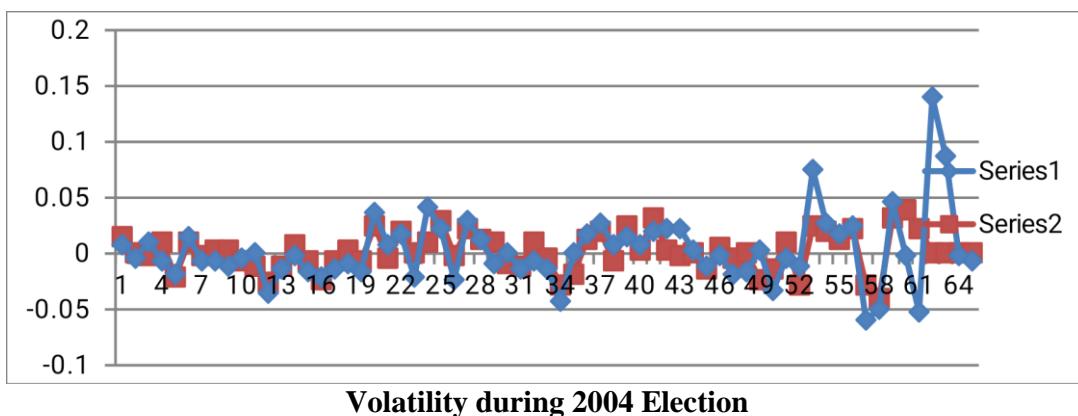
	Standard Deviation	Annualized SD	Skewness	Kurtosis
Pre Election	65.92638	90.02336	-0.30118	0.868287
Post Election	40.40761	108.1561	0.208892	-0.14443

**Table 3:** Showing data during 1999

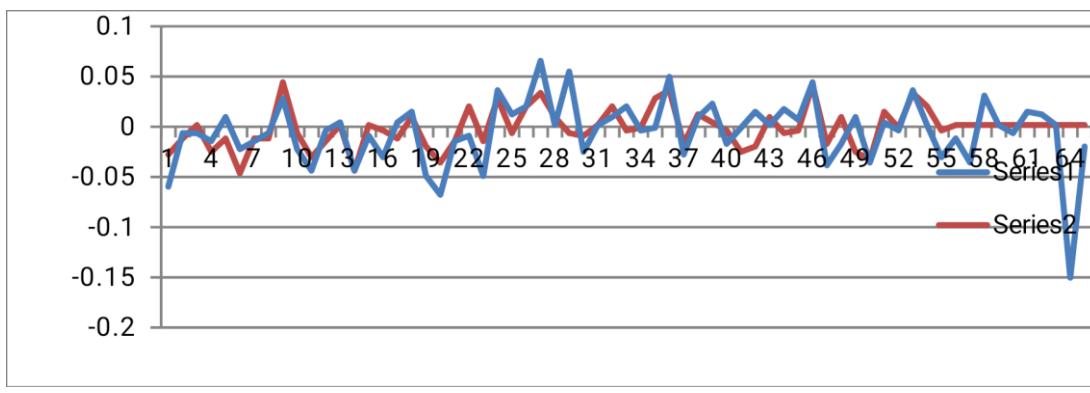
	Standard Deviation	Annualizd SD	Skewness	Kurtosis
Pre Election	83.30749	173.4819	-0.30089	-1.09475
Post Election	68.52841	124.6112	0.92107	1.785175

**Table 4:** Showing data during 2004

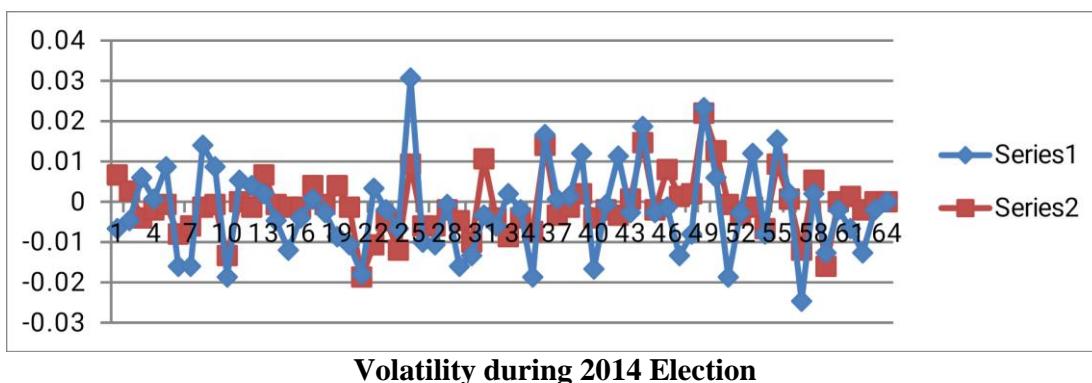
	Standard Deviation	Annualizd SD	Skewness	Kurtosis
Pre Election	61.84605	329.6558	-0.5533	-0.39785
Post Election	63.85526	211.1527	0.322916	0.266828

**Table 5:** Showing data during 2009

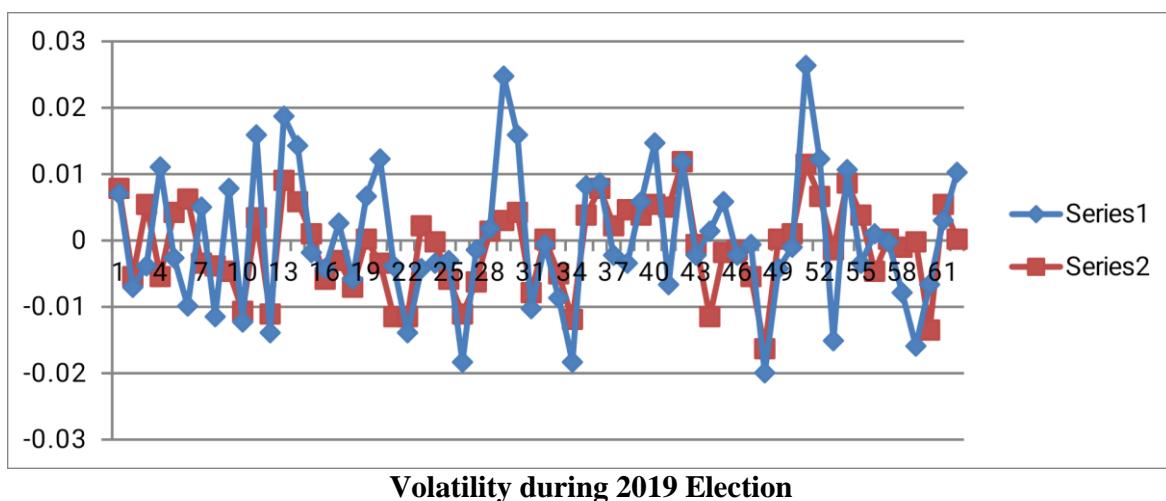
	Standard Deviation	Annualized SD	Skewness	Kurtosis
Pre Election	204.6229	847.4371	1.268778	1.409881
Post Election	220.2405	358.916	-1.17376	2.288285

**Table 6:** Showing data during 2014

	Standard Deviation	Annualized SD	Skewness	Kurtosis
Pre Election	222.5027	301.9385	0.422098	-1.03191
Post Election	187.2516	466.1082	-0.66762	-0.38829

**Table 7: Showing data during 2019**

	Standard Deviation	Annualizd SD	Skewness	Kurtosis
Pre Election	343.2606	375.0058	0.542423	-1.2176
Post Election	354.098	1123.395	-0.66537	-0.92975



Findings:

Overall Volatility Increase Post Elections:

1. The majority of the stocks considered in the study exhibit higher volatility post-elections.
2. This suggests that investors are surprised by the outcomes of the elections, leading to increased stock market volatility.
3. The research emphasizes the significant role of political events, such as elections, in influencing the performance of stock markets.
4. It discusses the impact of political cycles on economic policies, suggesting that election results can lead to changes in economic conditions.
5. The study highlights the home bias of investors, indicating that investors tend to hold predominantly domestic assets.
6. Elections in the home country are identified as having serious implications for the risk level of portfolios, affecting the risk exposure of investors.

Conclusion

In summary, the research suggests that union elections in India have a notable impact on stock market volatility, with increased volatility observed in the majority of stocks post-election. The findings have implications for risk-averse stock market investors and participants, offering insights into optimal strategies in response to election-related market movements.

Abstract

The Chamba Rumal, a unique embroidery style from the state of Chamba in Himachal Pradesh, is well-known for its beautiful coverlets and hangings. These colourful and well-balanced cotton fabrics with intricate embroidery have a rich history, and they are adorned with untwisted silk yarns. Miniature-style embroidery originated from folk designs that were later incorporated into the art form through elements of Pahari miniature painting. Numerous fascinating facets of the Chamba Rumal embroidery tradition are revealed by this study. It was discovered that craftspeople were no longer employing many old methods. As a result of engaging with the artisans through interactive workshops and follow-up field visits, their capacity was built and the traditional craft was revitalized. One example of India's rich artistic legacy is the Chamba Rumal. It is distinguished by its energy, vividness, and accuracy; it is frequently compared to Pahadi miniatures and murals, which is how it got its nickname, "Needle Painting." Originally used to decorate household items like coverlets, caps, hand fans, and blouses, the Chamba Rumal developed into a royally patronized art form that combined traditional methods with Pahadi motifs. In India, needlework is a highly valuable economic activity. However, many regional embroidery styles are in danger of becoming extinct due to modernization and mechanization. The art of traditional hand embroidery, which is mostly done by women, is in decline. This study aims to address the threat to the livelihood of women who practice the traditional embroidery art of Himachal Pradesh, known as "Chamba Rumal," by analysing its declining popularity and associated challenges.

Keywords- embroidery, cultural heritage, storytelling, Pahadi painting, miniature art.

Introduction

The journey of human civilization has been intricately woven with the art of textile. This remarkable development not only provided society with a vital means of self-expression but also initiated a profound artistic revolution. Textiles emerged as a prominent medium for artistic expression, breathing life into the vivid imaginations of individuals. One of the most fascinating dimensions of this creative journey is textile art, which finds its origins in everyday households. With a history dating back over forty thousand years, this medium offers a powerful lens to explore the culture and developmental stages of societies, uncovering their rituals, traditions, conventions, and way of life in exquisite detail.

At the heart of textile art is the humble needle, an instrument that has eloquently embroidered dreams, inspirations, imaginations, visions, and emotions into countless fabrics. India, with its rich cultural tapestry, has given birth to numerous ingenious art forms, many of which began as domestic pastimes but eventually evolved to captivate royals, elites, and discerning buyers. Among these, Chamba Rumal, or coverlet, stands as a true marvel. This form of handicraft came into existence during the late eighteenth to mid-nineteenth century in Himachal Pradesh, particularly in the Chamba valley. What sets Chamba Rumal apart is its unique style, featuring patterns intricately stitched on unbleached hand-woven muslin cloth using untwisted silk threads and needles, known as 'Pattu.' These exquisite

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cloths are adorned with a mesmerizing tapestry of floral and human figures, earning the name 'Chamba Rumal.'

Chamba embroidery flows in two distinct streams. The first, known as the folk style, embraces limited themes, bright colors, and uneven stitches. In contrast, the classical style exhibits a balanced composition with soft, attractive colors, shaped by intricate double-running stitches, often referred to as 'dorukha tanka.' What makes this style truly remarkable is the creation of mirror-image patterns on the reverse side of the cloth.

Folk embroidery was primarily the domain of rural women, used to embellish everyday items like caps, blouses, hand-held fans, cushion covers, pouches for rosaries, and more. On the other hand, the classical style was introduced by the elite class and heavily influenced by Pahadi paintings. It was the master artists who breathed new life into the folk style, blending it with the classical form, and the result was a resplendent tapestry that attracted the elite and royal class of women. These artisans, guided by skilled hill artists, skillfully outlined the Rumal motifs, infusing the essence of Pahadi miniatures and murals into their thematic compositions, color palettes, and decorative features. This unique fusion is the reason Chamba Rumal is also affectionately known as 'Painting made by the needle.'

Chamba embroidery is a celebration of spontaneity and rhythm, deeply rooted in the heritage of Himachal Pradesh. Its origins can be traced back to basic line work and simple human figures, a style known as folk embroidery. Over time, it evolved to feature exquisite compositions, soothing colors, and fine stitchwork, a testament to the artist's craft. By the mid-eighteenth century, the rulers of the Himalayan region began to patronize Chamba rumals, propelling their popularity to new heights. These classical style coverlets bore a striking resemblance to Pahari-style miniature paintings.

What sets Chamba embroidery apart is the double satin stitch, known as dorukha, a technique that lends depth and richness to the fabric. The choice of fabric plays a crucial role in the art of Chamba rumals. Muslin, with its fine texture, was preferred for its suitability for double satin stitch embroidery. It provided a subtle background that heightened the vibrant colors of the embroidery. When examining ancient pieces in museums, it becomes evident that the fabric used for rumals was left undyed, allowing the vivid embroidery to shine. In addition to muslin, coarse khaddar, woven with hand-spun yarn, became a popular choice due to its affordability and durability.

As the twentieth century unfolded, changes began to mark the captivating culture of Chamba embroidery. Court patronage waned, and traditional techniques were slowly replaced with machine-made fabrics and synthetic threads. This deviation from tradition necessitated research to explore alternative base fabrics suitable for embroidery and create awareness among artisans about the importance of selecting the right fabric.

In the quest to preserve and promote the legacy of Chamba embroidery, ongoing research is exploring Geographical Indications (GIs), which play a pivotal role in safeguarding and promoting the cultural and economic significance of these traditional art forms.

Geographical Indications, often referred to as GIs, are integral to protecting and promoting regional products that owe their unique qualities, reputation, or attributes to their place of origin. These indications ensure that products bear a distinct connection to their geographic location, offering consumers a set of distinguishing characteristics that define the product. GIs are not limited to business and legal frameworks but extend to rural development, where the synergy between commercial and economic goals, local communities, and the environment plays a significant role.

The Global Initiative for Rural Development (GIRD) is a stellar example of a comprehensive and market-oriented rural development program, offering a holistic approach to rural development. GIRD's initiatives help empower local communities and promote products with unique regional attributes.

Intellectual and cultural property associated with GIs holds a special place in the world of creativity and commerce. By granting regional manufacturers and processors the exclusive right to use

a name closely tied to a specific geographic location, GIs protect and promote unique products. This exclusive association ensures that the qualities, aesthetics, and quality of a product are intricately linked to its place of origin. This, in turn, serves as a guide for consumers, highlighting a distinct set of attributes that define the product.

The world's economy relies heavily on intellectual property, emphasizing the critical importance of protecting intellectual property rights (IPR) on a global scale. In India, the intellectual property policy encourages a supportive environment that unleashes the full potential of intellectual property for economic and socio-cultural growth. Initiatives have been launched to raise awareness about IPR, a critical facet in preserving and promoting traditional art forms and regional heritage.

In conclusion, Chamba embroidery is a masterpiece of artistry and culture, a testament to the rich heritage of Himachal Pradesh. Efforts to preserve, promote, and protect this unique art form, alongside research into GIs and intellectual property rights, are vital for ensuring the longevity and cultural significance of these extraordinary traditions. The legacy of Chamba embroidery serves as a captivating narrative of creativity, resilience, and the interplay of tradition and innovation.

In addition to the enduring legacy of Chamba embroidery, it's important to highlight the vibrant community of artisans who have dedicated their lives to this art form. These skilled craftspeople have been the custodians of tradition, passing down their expertise through generations. Their dedication to preserving and evolving Chamba embroidery is a testament to the art's resilience.

As we delve further into the realm of Geographical Indications (GIs), we find that they serve as a powerful tool not only for safeguarding traditional knowledge and artistry but also for fostering economic development in rural areas. GIs empower local communities by providing them with a unique selling proposition based on the rich cultural and geographical heritage of their products. This, in turn, can lead to economic growth, the creation of employment opportunities, and the sustenance of traditional crafts.

The Global Initiative for Rural Development (GIRD) represents a beacon of hope in the broader context of rural development. This initiative recognizes the significance of protecting and promoting traditional crafts and the knowledge associated with them. It serves as a model for fostering sustainable development that respects the environment, engages local communities, and upholds the cultural heritage of regions.

When we consider the landscape of intellectual property rights (IPR), we recognize its far-reaching impact on innovation, creativity, and economic growth. IPR provides a framework for artists and creators to protect their work, encouraging continued innovation and artistic expression. India's intellectual property policy reflects a commitment to nurturing creativity while also acknowledging the economic value of protecting and promoting these creations.

Chamba embroidery stands as a shining example of how art, culture, and tradition can come together to create something truly remarkable. It's a testament to the enduring spirit of human creativity and the importance of preserving our cultural heritage. As we celebrate the beauty of Chamba embroidery, let us also remember the artisans who bring this art form to life, and the significance of Geographical Indications and intellectual property rights in protecting and promoting these timeless traditions. In a rapidly changing world, these mechanisms provide a bridge between the past and the future, ensuring that the legacy of Chamba embroidery continues to inspire and captivate generations to come.

Literature Review

(Rohini, Ritu, Veena, 2014) The Himalayan state of Chamba was renowned for its peculiar embroidery, which adopted the form of coverlets and hangings that were all referred to as "Chamba rumals." In general, chamba rumals were complex designs created on fabrics made of cotton, embellished with untwisted threads of silk in vibrant and harmonious hues. The spontaneity and rhythm inherent in Himachal Pradesh's soil laid out Chamba embroidery. Folk style embroidery, which

contained limited subjects and simple human figures, is probably where the embroidery tradition emerged. Later, the wonderful set up, soothing hues, as well as exquisite embroidery were completed.

(Jasminder Kaur, 2017) The Pahadi paintings had such an enormous impact on the Chamba Rumal that impressions of murals and paintings from the Guler, Kangada, Basohali, Jammu, Nurpur, and Mandi art schools could also be seen on these Rumals along with those from the Chamba School. As in Pahadi paintings, these Rumals feature scenes from multiple popular stories, rituals, and mythological subjects. Chamba Rumal was exquisitely embroidered with themes focused on the tales of Lord Krishna, incidents from the Ramayana, Mahabharata, and Bhagavata Purana, enchanting scenes, expressing different facets of love from "Nayak-Nayika," and the "Rag-Ragini" subject. In addition to these, a few more television shows and real-life scenarios also served as subjects.

(Gagan Gambhir, 2021) In Chamba, embroidery artists often employed the theme of Ganesha worship, especially to create rumals and paintings. Corresponding to the conventional Kangra paintings, it depicts a central image of Ganesha set within a pattern of rectangular bands alongside floral patterns with cross-petals in each section, resembling the Phulkari embroidery of Punjab. A greater variety of multi-coloured geometric patterns arranged in zigzag lines can be observed. The main deity is crowned and graced with a decorative umbrella ornamented with bells or fringes. The umbrella sits on a metal rod and two naturally colored banana trees that flank it on each side.

(Rohini, Ritu, Veena, 2017) Chamba Rumals were made using fine muslin cloth. It was discovered that double satin stitch embroidery worked best with it since the work was double-sided, needed the ground cloth for support, and the fabric was fine enough for the needle to easily pass through. The muslin-like fabric with minimal finish was favoured. The background was the muslin material, which gave the impression of being textured. Coarse khaddar was another distinct type of fabric that was utilized for rumals and other items. It was weaved by hand using hand-spun yarn. . Because of its affordability, ease of availability, and durability, it rose to prominence as a fabric. In the late 19th century, machine-made fine cotton fabric was used for embroidery.

(Harikumar, Sanjeev, Laxmi, 2022) Young women in Chamba used to receive Chamba Rumal as a dowry, but this is no longer the case. The needlework is currently the most significant element, followed by the wooden frame with glass and adjustable sides as there aren't many carpenters who can create wooden frames with these features. These paintings are still for sale as pieces of art today, with prices ranging from Rs. 250 to Rs. 10,000 based on size, subject, and level of complexity. In order to revive this needlework technique, the government of Himachal Pradesh established a training facility in Chamba among other measures.

Methodology

Reference was taken from research papers, journals and books. Information was also collected from online sources such as websites.

Problem Solving

The problem-solving aspect of this research revolves around the preservation, promotion, and sustainable development of Chamba embroidery and related traditional knowledge. While Chamba embroidery is a remarkable art form, several challenges and opportunities need to be addressed to ensure its longevity and cultural significance.

- Artisan Empowerment and Skill Enhancement: One of the primary challenges is empowering the community of Chamba embroidery artisans. This involves providing them with the necessary training, resources, and access to markets. To address this, initiatives like the Global Initiative for Rural Development (GIRD) can serve as models for skill development, entrepreneurship, and linking artisans with potential buyers. Encouraging younger generations to learn and carry forward this tradition is vital.

- Reviving Traditional Techniques: The study has highlighted a decline in traditional Chamba embroidery due to the use of machine-made fabrics and synthetic threads. There is a need to revive and promote the use of traditional techniques and materials. Developing awareness among artisans and consumers about the significance of these traditional methods is crucial.
- Quality Control and Standardization: To ensure the quality of Chamba embroidery products, there is a need for quality control measures and standardization. This can be achieved by setting criteria for the selection of fabrics and embroidery techniques. The creation of a fabric catalog is a step in the right direction, and further efforts in this regard are necessary.
- Promoting Geographical Indications (GIs): Geographical Indications (GIs) play a pivotal role in safeguarding and promoting the cultural and economic significance of traditional art forms. It is important to continue research on obtaining GIs for Chamba Rumal, which would provide legal protection, recognition, and economic benefits to the artisans and the region.
- Fostering Economic Growth: Integrating Chamba embroidery and related art forms into the local and national economy can lead to economic growth and the creation of employment opportunities. By promoting Chamba embroidery as a unique selling proposition based on its rich cultural and geographical heritage, local communities can benefit.
- Intellectual Property Rights (IPR) Awareness: Raising awareness about intellectual property rights is essential to protect and promote traditional art forms. Initiatives aimed at educating artisans about IPR and its value can contribute to the sustainability of Chamba embroidery.
- Digital Preservation and Promotion: Leveraging digital tools for research, preservation, and promotion of Chamba embroidery is essential in the digital age. It enables a wider audience to appreciate and engage with the art form, especially among the younger generation.

In summary, the research serves as a foundation for addressing these challenges and opportunities. It emphasizes the need for a comprehensive strategy that encompasses artisan empowerment, skill enhancement, preservation of traditional techniques, quality control, GIs, economic growth, IPR awareness, and digital promotion. The interplay of these factors will be critical in ensuring the continued vibrancy and cultural significance of Chamba embroidery, while also contributing to the economic and social well-being of the artisans and the region.

Conclusion

Chamba embroidery, a symbol of Himachal Pradesh's rich heritage, demands preservation through Geographical Indications and intellectual property rights. Artisans are the torchbearers, passing tradition through generations. GIs support economic growth and cultural preservation, as exemplified by the Global Initiative for Rural Development. Intellectual property rights fuel innovation and protect creators. Chamba embroidery is a timeless testament to art, culture, and tradition. It's vital to recognize artisans, GIs, and IPR as bridges between the past and future, securing this legacy for generations.

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ABSTRACT

Adventure fiction is a genre of literature that contains stories of adventure, such as world travel, adventure quests, adventures of discovery, and other adventures involving pirates and buried treasure, searching for buried places or objects, or journeys whose success is important for personal and social meanings. Adventure stories have been popular since the earliest days of literary fiction. Adventures are significant because they are a part of the hero's journey. Which is probably why travel is often a matter of self-discovery for the hero. They are a form of escape literature that allows the reader to escape everyday life to save distant lands as it is the story of wonderful discovery and mystery. Such is *Robinson Crusoe* a thriller about a lonely man struggling to survive on a seemingly deserted South American island. *Robinson Crusoe* is the story of one man's survival in wilderness it also includes pirates, shipwrecks, cannibalism, mutiny, and more. It is a very adventurous story that explores solitude, discovery and the will to survive.

Keywords: Adventure, solitude, life, discovery, survive.

Adventure as a Definition of Life:

Robinson Crusoe tells the story of a man's struggle for survival on a deserted island off the coast of modern-day Venezuela. This unique experience is told from first-person perspective, there are realistic stories, twists and turns and filled with occasional repetition. In the beginning of *Robinson Crusoe*, the narrator takes issue not with society, but with his family's view of how he might have failed in life if his parents' expectation of him taking over the family business wasn't met. His head is full of "rambling thoughts" about going to sea. No advice or petition can diminish his will. His father gives him "good advice and counsel", that only desperate and high men go abroad for adventure, and he is too high or too low for after such things.

"Being the third son of the family and not bred to any trade, my head began to be filled very early with rambling thoughts".

-Robinson Crusoe, Chapter 1

About a year later he manages to get free passage on a friend's boat heading to London. He does not ask for blessings or money, and boards the ship. The worst starts right away. The sea is rough, and Robinson regrets his decision to leave home. The sea calms down, and after a few days the former thoughts were dismissed. He promises that if he gets out of this mess, he will go home. However, as is often the case with many regrets, once the problem passes, he goes on his chosen path. He was constantly confused whether he made the right decision and he doesn't know what a constantly churning sea of change in the only portrait of Robinson's personality is precisely connected. His sense of agency comes in bursts of motion.

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"In a word, as the sea was returned to its smoothness of surface ... my fears and apprehensions of being swallowed up by the sea being forgotten, and the current of my former desires returned, I entirely forgot the vows and promises that I made in my distress".

-Robinson Crusoe, Chapter 1

Attacked by Turkish pirates on their way to the Canary Islands, they are captured and taken to the Moorish port of Sallee. Robinson met another boy named Jury and asked to be honest or even get shot. Zuri insists on loyalty and offers to see the world with Robinson. As Robinson searches for new land, he tells himself that if anyone died at all, they would die together. They seem adapt at sea, but these two follow their own set of rules.

"The boy smiled in my face, and spoke so innocently that I could not distrust him, and swore to be faithful to me, and go all over the world with me".

-Robinson Crusoe, Chapter 2

The captain is quite kind to Crusoe. He buys Robinson's boat, all his worldly possessions, and Xury. At first the narrator is reluctant to part with his slave, but the captain promises to free him in ten years if he will become a Christian. As Xury deems this fair, Robinson allows for an exchange.

"The generous treatment the captain gave me I can never enough remember".

-Robinson Crusoe, Chapter 3

Once he lands on the island, Robinson Crusoe reflects on his new situation. He captures, but also salvages a lot of useful items from the wreck and finds that the island is reasonably abundant in food. His discovery is that even in the worst of circumstances there is always reason to be grateful speaks with hope ingrained in his character. The task-figuring out how make cornbread is quite a feat, a tribute to Crusoe's perseverance and ingenuity. However, this self-deception is another psychological trick. Essentially, it shifts Robinson's mood from negative to positive. The island is full of contradictions, as it is simultaneously a haven and a threat.

"Upon the whole, here was an undoubted testimony that there was scarce any condition in the world so miserable but there was something negative or something positive to be thankful for in it".

-Robinson Crusoe, Chapter 4

Crusoe believes that God is punishing him for leaving his home and family. He laments his situation on the island and ultimately feels true remorse and contrition for his past mistakes. Seeing the footprints is the toughest test of his endurance in light of the surprising findings, the simplicity of the language is concerning. The real possibility for other people is a loss of peace with nature, of faith. This place is not so different from the real world he escaped from.

"I rejected the voice of Providence, which had mercifully put me in a posture or station of life wherein I might have been happy and easy; but I would neither see it myself nor learn to know the blessing of it from my parents".

-Robinson Crusoe, Chapter 6

On his first voyage after building himself a boat, Robinson Crusoe is often washed off the island by strong currents. One of his first tasks was to build a boat himself if it was possible to escape, but the boat was too heavy to have water so he built a small boat around the island. Crusoe reflects on his

earlier bad life, disobeying his parents, and wonders if it has anything to do with his isolation on this island. Lamenting his isolation on the island, he then realizes his situation could be much worse.

“And now I saw how easy it was for the providence of God to make even the most miserable condition of mankind worse”.

-Robinson Crusoe, Chapter 10

As he did before, Robinson Crusoe acknowledges that his unhappiness stems from his inability to remain in one place and be satisfied with his wealth but moreover acknowledges that it may be a universal problem.

“I have been, in all my circumstances, a memento to those who are touched with the general plague of mankind, whence, for aught I know, one half of their miseries flow: I mean that of not being satisfied with the station wherein God and Nature hath placed them”.

-Robinson Crusoe, Chapter 14

When Robinson Crusoe is deciding how to get from Lisbon to London, he follows his instincts and chooses to sail overland, which is interesting because the ships he was thinking of sailing incurred a risk which he has learned not to ignore put it on his emotions.

“It is true I had been very unfortunate by sea, and this might be one of the reasons; but let no man slight the strong impulses of his own thoughts in cases of such moment”.

-Robinson Crusoe, Chapter 19

Robinson's pioneering dream world must be realized and the dangerous forces on the island must be completely vanquished. The way always looks before he acts reflects the patience of a scholar; the impulsive tendencies are gone. He choreographs strategies but never loses his positional sense.

“Any one would think that in this state of complicated good fortune I was past running any more hazards—and so, indeed, I had been, if other circumstances had concurred; but I was inured to a wandering life”.

-Robinson Crusoe, Chapter 20

Despite all the dangers he has encountered during his twenty-eight years on the island, Robinson Crusoe's wanderlust is unsatiated.

CONCLUSION:

The most important theme of the book is adventure, a theme we see especially in Robinson's eventful journeys and his subsequent battle against the cannibals on the island. Secondly, his resilience was mentioned about his life on the desert island: he built a hut and nearly everything needed to live comfortably. Despite everything, he did not lose faith in God, and turned Friday into a Christian Thing. In fact, during his stay on the island, Robinson saved “Friday” from cannibals and a close friendship developed between them; That is why the native left the island and settled in England with Robinson.

For Crusoe the world is too much and he is too much to learn anything from his travels on the high seas. It is only when he is brought to a remote desert island that he finally begins to discover who he is and who he can become if he changes his selfish ways. The isolated life on an island devoid of human company allows Crusoe to understand what it means to be human. Forced on himself, Crusoe's adventures on the island take place as much in and of themselves as outside. Over time, he makes great strides and personal growth, which drives him to grow and gain wisdom. One could argue that this

novel alone represents a greater and more difficult journey in the story than anything else that takes place at sea.

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Abstract

Green marketing, also known as environmental or ecological marketing is an essential strategy for businesses seeking to align with growing environmental concerns. This study explores consumer perceptions towards green marketing and environmentally friendly products. By understanding the significance of green marketing in an era marked by environmental consciousness, the study aims to shape consumer behavior and guide businesses toward sustainable practices. The scope of the study involves analyzing consumer perceptions, awareness levels, and factors influencing the purchase of environmentally friendly products. With objectives centered on identifying perceptions, examining awareness levels, assessing consumer willingness to invest in sustainable products, and pinpointing factors influencing purchase decisions, the study adopts a sample size of 50 respondents from Aluva Municipality. The research concludes that there is no significant relationship between gender and awareness levels of customers regarding green marketing. Despite this, the study suggests that businesses and governments should recognize and address consumers' environmental needs by creating quality eco-friendly products and adopting responsible packaging. This study provides valuable insights into consumer behavior, emphasizing the importance of green marketing in the current environmental landscape. It encourages businesses to adopt sustainable practices, meet consumer expectations, and contribute to a more responsible and eco-friendly future.

Keywords: - *Green marketing, environmentally friendly products, consumers*

Introduction

Green marketing, also known as environmental marketing or ecological marketing, means promoting products that are believed to be good for the environment. It involves various actions like changing the product, how it's made, the packaging, and the advertising to be more environmentally friendly. This includes removing anything that harms the environment. Present-day consumers are increasingly aware of environmental issues due to climate change and pollution, making green marketing a way for businesses to align with these concerns and gain a competitive edge. Today, with a surge in environmental concerns, it's crucial for companies to promote eco-friendly practices through green marketing. This approach encourages ethical and sustainable behavior in dealing with stakeholders, and businesses are increasingly positioning themselves as environmentally responsible, aligning with public sector units and state governments addressing global warming, pollution, and water contamination. So, this study is an attempt to know the consumer's perception towards green marketing and environmentally friendly products with special reference to Aluva Municipality.

Review of Literature

Prakash, A. (2002) Green marketing subsumes greening products as well as greening firms in the study, "Green Marketing, Public Policy and Managerial Strategies", *Business Strategy and the Environment*. In addition to manipulating the 4Ps (product, price, place and promotion) of the traditional marketing mix, it requires a careful understanding of public policy processes. This paper

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focuses primarily on promoting products by employing claims about their environmental attributes or about firms that manufacture and/or sell them. Secondarily, it focuses on product and pricing issues. Drawing on multiple literatures, it examines issues such as what needs to be greened (products, systems or processes), why consumers purchase/do not purchase green products and how firms should think about information disclosure strategies on environmental claims.

Mishra, P., & Sharma, P. (2010) Green marketing is a phenomenon which has developed particular important in the modern market. This concept has enabled for there-marketing and packaging of existing products which already adhere to such guidelines. Additionally, the development of green marketing has opened the door of opportunity for companies to co-brand their products into separate line, lauding the green-friendliness of some while ignoring that of others. Such marketing techniques will be explained as a direct result of movement in the minds of the consumer market. As a result of this businesses have increased their rate of targeting consumers who are concerned about the environment. These same consumers through their concern are interested in integrating environmental issues into their purchasing decisions through their incorporation into the process and content of the marketing strategy for whatever product may be required.

Utkal Khandelwal and Naval Bajpai (2013) The purpose of article "*Green Marketing in India: Emerging Opportunities and Challenges*" is to find out the green advertising factors affecting purchase intention literature, and then to develop a simpler and more precise model of purchase intention. In this article, green advertising is taken as the instrument of measuring difference in purchase intention for metro and non-metro consumers. It is obviously hypothesized that metro and non-metro customers exhibit different degree of purchase intention for eight variables taken in the present study.

B Suresh Lal (2015) The paper "*Green Marketing: Opportunities and Issues*" focuses the definition and concepts of green marketing, briefly discuss marketing mix and opportunities of green marketing. It also focuses some of the issues with green marketing. In today's business world environmental issues plays an important role in marketing. All most all the governments around the world have concerned about green marketing activities that they have attempted to regulate them. There has been little attempt to academically examine environmental or green marketing

Significance of the study

In an era marked by increasing environmental concerns and ethical consumerism, understanding consumer perceptions of green marketing and environmentally friendly products is of paramount importance.

The study has the potential to exert a vital and substantial influence on the readers, given their pivotal role as consumers and their responsibility to protect the earth from adverse ecological consequences. Furthermore it could reveal the marketing strategies that can be adopted by the marketers to understand the consumers' needs in a better way with respect to environmental friendly products.

This study holds the promise of not only shaping consumer behavior but also steering businesses and society towards a more sustainable and responsible future.

Scope of the study

The present study has been undertaken to analyze the perception of consumers towards green marketing and environmentally friendly products. Green marketing prioritizes outstanding customer service by utilizing efficient and inventive techniques that secure the environment. Green marketing promotes products or services that prioritize eco-friendliness and sustainability. It can be an efficient approach to connect with consumers aiming to reduce the environmental impact of their purchases.

Objectives of the study

- To identify consumer's perception towards environmentally friendly products.
- To examine the awareness levels of customers regarding green marketing practices.
- To what degree consumers are prepared to invest more in environmentally sustainable products.
- To pinpoint the elements that impact individuals' decisions to buy environmentally sustainable products.

Research Methodology

Selection of Sample: The respondents of the study consist of consumers who are from Aluva Municipality locality.

Sample Size: A sample of 50 respondents has been selected for the study.

Sampling Method: Simple random sampling method has been adopted for selecting the sample.

Data Collection

The study is designed as a descriptive one and makes use of relevant information and it is collected through both primary and secondary sources. The primary data are collected from consumers in Aluva Municipality of Ernakulam District through structured questionnaire. Secondary data were collected from journals and websites.

Tools for Analysis

The data were suitably classified and analyzed based on the objective of the study. For analysis, statistical tools like percentages and chi square were used.

Hypothesis

H_0 : There is no significant relation between gender and awareness levels of customers regarding green marketing.

H_1 : There is significant relation between gender and awareness levels of customers regarding green marketing.

Data Analysis

Table: 1 PRIMARY REASON FOR BUYING ENVIRONMENTALLY FRIENDLY PRODUCTS

Reasons	No of respondent	Percentage
Quality	7	14%
Health Concern	20	40%
Durability /Long lasting	5	10%
Environmental Concern	18	36%
Total	50	100%

Source: Primary Data

Table 1 reveals that a substantial portion of participants, constituting 40 percent, prioritized health concerns as their main motivation for purchasing eco-friendly products, while 36 percent based their choices on environmental considerations. Additionally, 14 percent and 10 percent of respondents cited product quality and durability, respectively, as their primary reasons for choosing environmentally -friendly products.

Table: 2 COSTS OF GREEN PRODUCTS AFFECTS PURCHASING BEHAVIOR

Particulars	No. of Respondents	Percentage
Occasionally	23	46%
Frequently	14	28%
Rarely	11	22%
Never	2	4%
Total	50	100%

Source: Primary Data

This table reveals that 46 percent of respondents occasionally let their purchasing behavior be influenced by the price of green products, while 28 percent are frequently affected. Additionally, 22 percent are rarely considering the price when buying green products and 4 percent of respondents' purchasing behavior remains unaffected by the price of green products.

Table: 3 SATISFACTION LEVELS OF RESPONDENTS WITH THE PACKAGING OF GREEN PRODUCTS

Particulars	No of respondents	Percentage
Extremely Satisfied	15	30%
Somewhat Satisfied	30	60%
Extremely Dissatisfied	2	4%
Somewhat Dissatisfied	3	6%
Total	50	100%

Source: Primary Data

Based on the graph provided, it is evident that 30% of participants expressed extreme satisfaction, while 60% indicated a moderate level of satisfaction with the packaging of environmentally friendly products. Additionally, 6% of respondents reported a certain level of dissatisfaction, with 4% expressing an extremely dissatisfied sentiment.

Table: 4 BELIEFS OF CUSTOMERS IN ECO-FRIENDLY PRODUCTS ADVERTISEMENT

Particulars	No. of Respondents	Percentage
Often	12	24%
Sometimes	23	46%
Rarely	11	22%
Never	4	8%
Total	50	100%

Source: Primary Data

This table reveals that 12% of respondents consistently believe in the eco-friendly product advertisements, 23% occasionally believe in such promotions, 11% rarely express belief, and the remaining participants never subscribe to the idea of eco-friendly advertising.

With a view to find whether there is any association between gender and awareness levels of customers regarding green marketing , the following hypothesis is framed :-

H₀: There is no significant relation between gender and awareness of customers regarding green marketing.

H₁: There is significant relation between gender and awareness of customers regarding green marketing.

To test this hypothesis, chi square test is applied.

Table: 5 GENDER AND AWRENESS OF CUSTOMERS REGARDING GREEN MARKETING

Gender	Awareness of customers		Total
	Yes	No	
Male	17	01	18
Female	29	03	32
Total	46	04	50

Source: Primary Data

Calculation using chi square test

Table: 4.4.1

O	E	(O – E) ²	(O-E) ² /E
17	16.56	0.1936	0.011
29	29.44	0.1936	0.006
01	1.44	0.1936	0.134
03	2.56	2.0736	0.81
Total			0.961

“O” indicates Observed frequency given in the contingency table.

“E” indicated Expected value = (row total * column total)/ grand total

$$\chi^2 = \sum (O-E)^2 / E = 0.961$$

Level of significance = 0.05

Degree of freedom = (r-1) (c-1)

$$= (2-1) (2-1)$$

$$= 1 * 1 = 1$$

Table Value = 3.841

The calculated value of chi-square is 0.961 and table value at 5% level of significance is 3.841. Since the computed value (0.961) is less than the table value (3.841), the **null hypothesis is accepted**. This infers that there is no significant relationship between gender and awareness of customers regarding green marketing.

By using Chi Square test, it is thus concluded that there is no significant relationship between gender and awareness of customers regarding green marketing.

Findings and Conclusion

1. This study unveils that there is no association between gender of respondents and awareness of customers regarding green marketing.
2. The study reveals that majority of the respondents were aware with the concept of green marketing and promotion of environmentally friendly products.
3. It was found that most of the respondents have insights on the ways in which green marketing contributes to the betterment of our society
4. The survey revealed that a majority of participants discovered information about eco-friendly products through online platforms, newspapers, and television.

5. The majority of participants expressed willingness to purchase eco-friendly products even at a premium price, but sometimes price of green products affects their purchasing behavior.
6. According to the research, a significant number of respondents indicated that they predominantly purchased green products in the food and baby products categories in the past.
7. Respondents conveyed satisfaction with the packaging of eco-friendly products, highlighting that the information on the packaging lived up to their expectations.
8. A significant number of participants cited health and environmental considerations as the leading factors motivating their choice to purchase eco-friendly products.
9. The majority of participants buy eco-friendly products less than once a month, with only a small percentage exhibiting regular purchasing behavior.
10. A significant portion of the population is environmentally aware, well-informed about environmental conservation, and shows a readiness to embrace recyclable and bio-degradable products.
11. The majority of survey participants agree that embracing eco-friendly products holds the potential to mitigate environmental challenges.
12. Only small percent of respondents are aware about initiatives taken by the Govt. of India, Govt. of Kerala, etc. to promote the eco-friendly products.
13. Many of the respondents give more importance to eco-friendly products rather than conventional products.
14. Most of the respondents agree that they actively use products that are crafted from biodegradable materials.
15. Only a small fraction of respondents subscribe to the belief in eco-friendly advertising.
16. A significant number of respondents agree that the eco-friendly products can enhance their overall quality of life by potentially reducing mortality and disease risks.
17. The survey revealed that a majority of participants take the time to read product labels to ensure they contain environmentally safe ingredients before making a purchase.
18. Not every participant is believed with the advertisement of eco-friendly products, only a limited portion of respondents embraces this perspective.

Conclusion

The study reveals that customers in Aluva Municipality are conscious of green marketing and environmentally friendly products. Gender does not influence customers' awareness of green marketing. Customers acquire information about eco-friendly products through online platforms, newspapers, and television. Utilizing these channels effectively can enhance businesses and address environmental concerns. Government initiatives to promote eco-friendly products play a vital role in informing customers about sustainability efforts. Recognizing the capacity of eco-friendly products to address environmental issues, customers are willing to invest in them, even at a higher cost. However, the pricing of green products can still impact their purchasing decisions. Governments and companies should identify people's environmental needs, create products that address these concerns, and adopt environmentally responsible packaging, such as recyclable and biodegradable options, while ensuring that the products meet the quality expectations of the consumers.

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Abstract:

Agriculture is very important for the Indian economy. Technology awareness, computer literacy and usage of smart phones and internet are increasing across the nation. Social media in agriculture is playing a very effective role in dissemination of different agricultural information. It helps to bridge a geographical distance between the farmers of different places. There are more than 100 Information and Communication Technologies (ICTs) based initiatives such as e-Choupal, e-aqua, Digital Green etc. which have been launched in India for the development of agriculture and rural development.

Social media are interactive tools and digital channels that make it simple to share information, viewpoints, hobbies, and other kinds of expression with others online. Growers (farmers) may quickly and easily communicate with others in the agricultural industry through the agriculture sector. Social media marketing uses websites and platforms for advertising a good or service and building consumer relationships. The rise in active user rates on social media websites has increased social media marketing. With 78 per cent of social media users in India signing up, Instagram will be the most popular social media network in 2023. Twitter, Facebook, WhatsApp, LinkedIn, Telegram, YouTube, Blogs, Snapchat, and more are also popular in India.

When promoting products and services, digital marketing uses the internet and other online-based digital technology, including desktop computers, mobile phones, and other digital media and platforms. Through operations, agricultural marketing connects farmers and customers, becoming a vital aspect of the economy. A practical approach for farmers to dispose of their extra produce at a fair price is through an agricultural marketing system. The National Agriculture Market, often known as eNAM, is an online trading platform for agricultural commodities in India. Farmers, traders, and purchasers of items for online trading benefit from the market. Before soft producing marketing, the market facilitates more excellent price discovery and facilities.

Social media benefits society through boosting awareness, fostering stronger communities, facilitating greater access to information and resources, influencing and changing cultural norms, and opening up new economic opportunities.

Keywords: Social Media, Technology, Digital Green, eNAM -National Agriculture market, Digital Marketing, Agricultural Marketing, Electronic commerce.

Introduction:

The economic health of India is critically dependent on the agricultural sector. Rural households depend on agriculture to some extent—about 70%. Given that it generates over 17% of the country's GDP and employs more than 60% of the workforce, agriculture is a crucial sector of the Indian economy. The agriculture sector is the backbone of India's economy and is essential to the country's growth. The country's largest source of job possibilities and a vital factor in the country's

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overall social and economic growth in agriculture and related industries.

The infrastructure facilities of India's agriculture, such as the irrigation network, flood control system, electricity delivery, production capacity, and cold storage facilities, as well as the use of information and communication technology, digital marketing, and social media platforms for agricultural marketing, are mainly responsible for the country's agricultural success. Agriculture and marketing together into the phrase "agricultural marketing." Agriculture typically consists of cultivating and rearing livestock and crops, whereas marketing is getting products from the point of production to the point of consumption. Indian farmers use a range of ICT (information and communication technology) platforms for advertising their products, including mobile phones, internet portals, information kiosks, e-markets, etc. ICT platforms expand market knowledge and boost farmer confidence in their capacity to comprehend demand, control output, and manage supply chains, among other benefits. The use of knowledge and real-time data on market pricing, weather forecasts, pest information, seed kinds, plant practices, and other topics helps farmers by improving access to markets. By facilitating the open flow of information to farmers about newer and better production techniques, agricultural management, standard prices, agricultural marketing, etc., ICT use in the agricultural sector has started to alter Indonesian agriculture.

Transportation expenses, a lack of adequate market infrastructure, a lack of market intelligence, a lack of process units, a lack of storage facilities, price volatility, etc., are the main issues and challenges facing India's agricultural marketing system.

India's primary dairy cooperatives, particularly those in Maharashtra, have a favourable impact on rural development. This essay emphasises how crucial the dairy sector is to India's rural economy. India's primary dairy cooperatives, particularly those in Maharashtra, have a favourable impact on rural development. This essay emphasises how crucial the dairy sector is to India's rural economy. India's primary dairy cooperatives, particularly those in Maharashtra, have a favourable impact on rural development. This essay emphasises the dairy sector's vital role in India's rural economy.

Objectives:

1. To know how social media platforms are used in India for marketing agricultural commodities.
2. To do research on the difficulties social media platforms confront in digital marketing.

Results & Discussions:

Until then, emphasise the use of social media platforms for marketing Indian agriculture's raw commodities.

Due to a lack of knowledge about how digital marketing can benefit their firm in the new marketing era, social media platforms and digital marketing are not as widely used in India's agriculture industry. Utilising social media platforms and digital marketing to promote agricultural products Producers, processors, traders, etc. will have excellent opportunity to promote their goods for both regional and global markets thanks to raw materials. The ability to gain riches from knowledge and ideas, the potential to establish essential partnerships, and the opportunity to reach wider consumers and specialists in the field of agriculture and the related sector are all significant advantages of using social media in agricultural marketing. many social media platforms, including social networking sites like Facebook, LinkedIn, Instagram, and Snapchat, as well as blogs, microblogs (Twitter), social photos, and video clips (YouTube). They have many opportunities to buy and sell agricultural products thanks to the usage of social media in agricultural marketing. As farmers produce more agricultural (products) such as cotton linter, paddy, maize grains, pulses, vegetables, etc., they will enhance the sale price and reduce the marketing expense. Information, especially when shared via social media, has become essential in everyday life in today's digital environment.

They are examining the various difficulties associated with using social media and digital marketing.

With the proliferation of smartphones, social media has become a widespread method of communication for people worldwide.

Using social media platforms and digital marketing presents the following challenges:- The use of social media as a marketing tool. -The majority of individuals lack trust. E-sales from agriculture are ubiquitous with online shopping. on social networks. -A lack of familiarity with electronic media. -Some farmers lack computer literacy and are unable to use Android smartphones. Risk away from safety issues like - Farmers may occasionally encounter bogus websites or online portals. -High-risk element in the marketing of industrial and agricultural goods. The farm Products may only be produced during a specific season; they cannot be manufactured all year long. Prices for perishables decrease throughout the harvest season. However, the distribution of manufactured goods can be altered or made uniform throughout the year. As a result, their prices are essentially constant throughout the year.

Conclusion:

The agriculture sector's marketing channels are shifting due to social media, electronic trading platforms, and the internet for selling agricultural products. Farmers that use digital marketing to sell their products on various e-market platforms must be skilled. The COVID-19 epidemic has provided an opportunity for new marketing strategies for agricultural goods and fresh agricultural products on social media platforms.

Social media is beneficial because it raises awareness, builds communities, makes it easier to access information and education, influences and alters cultures, and creates economic opportunities. Due to the enormous growth of Android mobile phone users, social media usage has increased dramatically across various industries, including development, infrastructure, digital marketing, education, employment opportunities, communication, etc. A wide range of stakeholders can efficiently use social media platforms in agricultural and adjacent industries to share information and data, build relationships, and facilitate communication. Social media is a helpful instrument and significantly impacts agriculture marketing. The farmers spend less time and money acquiring information on various agricultural marketing parameters. It enables networking with (Farmer - Farmer), which might lessen farmers' social isolation. Enables farmers and agribusiness professionals to connect with and network with other farmers, producers, different agribusiness stakeholders, and consumers on a national or international basis. Social networking is the fastest way to communicate internationally. With many users, Facebook is the most popular social media site, followed by WhatsApp, Google Plus, Twitter, blogs, and YouTube. The most well-liked social media platform for agriculture is YouTube. Farmers use the Place in about 51% of cases.

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ABSTRACT

A banking chatbot is an interface powered by AI designed to engage with guests and offers services such as balance inquiries, fund transfers, bill payments, account management, investment assistance. It employs either intelligence or introductory tentative statements to identify keywords or expressions and give responses. While AI chatbots have gained popularity in the banking sector for a range of reasons, similar, as enhancing client support and service addressing asked questions (FAQs) being 24/7 furnishing sale backing and history icing authentication and security measures, as well as helping new guests set up their accounts and guiding them through the onboarding process. From our analysis it has been discovered that chatbot systems presently used in the banking sector have limitations. One of these limitations is their capacity to comprehend natural language queries and give responses. The primary ideal of banking chatbots is to insure client service and also enhancement of both bank and its workers. Natural Language Processing (NLP), Machine Literacy ways, including Support Vector Machine (SVM) and the Naive Bayes Classifier (NB) are used to comprehend and instantly respond to natural language queries directly. latterly we will develop a frontal end operation to enhance the interface between guests and the bank icing an stoner experience. In summary exercising NLP and Machine literacy, the Bank Chatbot shows implicit, in enhancing client service and streamlining banking operations within the assiduity.

KEYWORDS Artificial Intelligence, Banking, Chatbots, Customers, NLP, Application Programming Interface, Naïve Baye's, Support Vector Machine.

INTRODUCTION

In these times the banks that use AI (Artificial Intelligence) and chatbots are continuously increasing and on other hand, usage of smartphones and internet is also constantly increasing. The above two factors are emerging as powerful driving forces within the banking sector, reshaping the way financial services are delivered and accessed. Technologies have facilitated the development of mobile banking apps and online platforms, granting customers unprecedented convenience and accessibility to their financial accounts. The rise of digital payments and advanced security features has not only reduced the reliance on physical cash and cards but also enhanced the safety of transactions. Furthermore, smartphones and the internet have allowed banks to engage with customers more effectively, offer 24/7 access, and provide digital marketing and support services. In this digital era, banks have embraced these technological advancements to offer a seamless and customer-centric banking experience, positioning smartphones and the internet at the forefront of the industry's evolution.

Chatbots have become invaluable assets in the banking sector, providing a multitude of benefits

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to both financial institutions and customers. These conversational AI systems, powered by natural language processing and machine learning, enhance customer service, streamline processes, and improve operational efficiency. First and foremost, chatbots significantly enhance customer service in banks. They are available around the clock, offering immediate responses to customer inquiries and addressing routine tasks. Whether customers have questions about their account balances, recent transactions, or how to open a new account, chatbots can provide quick and accurate information, reducing wait times and improving customer satisfaction. Customers appreciate the convenience of receiving assistance on their smartphones or computers without the need to visit a physical branch or wait on hold to speak with a human agent. Additionally, chatbots can assist with more complex tasks, such as guiding customers through loan application processes, explaining different financial products, or even providing investment advice based on customer preferences and financial goals. This not only enhances the customer experience but also helps banks cross-sell and upsell their services effectively. Furthermore, chatbots help banks streamline their operations. They can automate various processes, such as account verification, transaction categorization, and even compliance checks for Anti-Money Laundering (AML) and Know Your Customer (KYC) regulations. By automating these tasks, banks can reduce the workload on human employees, minimize errors, and improve overall efficiency. Finally, chatbots contribute to cost savings by reducing the need for additional customer support staff and improving employee productivity.

LITERATURE REVIEW

Surajit and Saha [1] describes about the impact of chatbots in banking sector and they also found that the chatbots have positive influence and several advantages like quick response time, 24/7 availability, security and it reduces wait time so that customers no longer need to wait in queues. Chatbot reduces human bias. Chatbot can handle multiple tasks simultaneously. In conclusion, chatbots play an important role in enhancing customer service in banking sector by offering rapid responses and consistent support for customers and chatbot can communicate with customers in multiple languages.

Olga Buchel[2] Conducted a case study on the Banking Industry. The purpose of this case study is to prepare report about how humans are interacting and benefiting from Artificial Intelligence. Chatbots play an important role in enhancing customer service in banking sector by offering rapid responses and consistent support for customers and chatbot can communicate with customers in multiple languages. The role of chatbots in banking sector has major impact as they automate and help customers with activities like transactions, paying bills, checking balance amount in account without humans and here chatbots act as virtual assistance and chatbots are benefiting both banks and customers.

Mrs.B. Kishori,Maha Lakshmi.A [3] describes that Artificial Intelligence is continually evolving and it plays pivotal role in many different industries across the globe like health care, finance, Banking, Agriculture, Entertainment and more. Artificial Intelligence has significant impact on banking where it serves customers, manages data and makes reports and decisions. AI assist in automating Anti-money Laundering cases by analyzing large datasets and identifying suspicious activities through clustering. AI helps banks to work more efficiently. AI helps in detecting fraudulent activities by identifying unusual patterns in real-time transactions. AI uses large amount of data to improve credit score which leads to better lending activities. In this article they described about a processing module which understands user's query and matches it to answers which are stored in database. NLP enables sentiment analysis and text mining to identify different opinions of customers. AI has been gaining popularity day by day due to several factors Like advancement in technology, data availability.

Lakshmi Shetty, Devi E [4] conducted Research to know more about the impact of Artificial Intelligence. Researcher collected large amount of data from many different databases and analyzed the data after preprocessing it and came to conclusion that AI chatbots should come into play in different scenarios where their advantages can be used to enhance customer service. Researchers suggested that

Indian banks to carefully plan and implement AI initiatives. As AI sector is continuously growing, it can play important role in transforming Indian Banking Sector. Versatility of AI makes it valuable in different industries. In additional NLP enable AI to understand different human languages and give meaningful response. The market share of AI, or artificial intelligence, has been steadily growing across various industries and sectors, reflecting the increasing recognition of AI's potential to transform business operations and customer experiences. As AI technologies continue to advance, they are securing a larger market share in sectors such as finance, healthcare, e-commerce, and manufacturing. In the finance industry, AI is employed for risk assessment, fraud detection, and algorithmic trading, while in healthcare, it aids in diagnosis, drug discovery, and patient management. E-commerce benefits from AI-driven personalization, inventory management, and customer service, and manufacturing relies on AI for quality control, predictive maintenance, and process automation.

Krunoslav Ris, Zeljko Stankovic And Zoran Avrizzoic[5], In their study they observed how implementation of AI in banking sector relates with human factor. While AI-driven systems offer the potential for enhanced efficiency, accuracy, and accessibility in the financial sector, it is crucial to recognize that the human element remains central to the industry. AI solutions in banking are designed to complement rather than replace human expertise. These technologies excel in automating routine tasks, accelerating data analysis, and bolstering risk management, yet they are not a substitute for the personalized guidance and decision-making capabilities that human bankers provide. In fact, AI empowers human professionals by arming them with data-driven insights and enabling them to focus on more complex, strategic, and customer-centric aspects of their roles. Moreover, as AI algorithms become increasingly sophisticated, there is a growing emphasis on ethical considerations, regulatory compliance, and ensuring the responsible use of AI in banking. The symbiotic relationship between AI and the human factor in banking underscores the importance of striking a balance that enhances the strengths of both to best serve customers and the industry's evolving needs. The main goal of artificial intelligence (AI) is not to replace humans but to enhance and improve efficiency, performance, and overall capabilities across various domains.

Sue Inn Chong, Lee Seng Yeong [6] presents the findings in their research how processing a query in a chatbot involves several key steps to understand, interpret, and respond to the user's input effectively. Typical query processing process in a chatbot involves Input capture, reprocessing, Tokenization ,Intent Recognition , Entity Recognition ,Context Management, Query Processing, Response Generation, User Interaction, Error Handling, Learning and Improvement. Many chatbots are designed to continuously learn and improve their performance by analyzing user interactions and feedback. They may use machine learning algorithms to adapt and become more effective in understanding and responding to user queries over time. This query processing process is the foundation for the functionality of chatbots in various domains, including customer service, information retrieval, and task automation in industries like banking, e-commerce, healthcare. These AI-driven agents aid in the decision-making process by swiftly providing information, recommendations, and insights. They excel in offering personalized guidance, analyzing data to suggest tailored options, and automating routine tasks, freeing users to focus on more critical choices. Additionally, chatbots act as decision support systems in professional settings, helping with complex decisions and offering insights. Furthermore, they optimize workflows, continuously learn from interactions, and promote collaboration. Whether in customer service, healthcare, business operations, or personal finance, chatbots contribute to more informed and efficient decision-making by leveraging their data-driven capabilities, expert advice, and the convenience of natural language interactions.

Kishore Meghani [7] describes the concept of this paper is that the combination of AI (Artificial Intelligence) and blockchain technology has the potential to transform traditional financial services by enhancing security, efficiency, and customer experiences. AI-powered chatbots and virtual assistants are being employed for customer service, helping clients access account information, make transactions, and receive personalized financial advice. Machine learning algorithms are used to detect

and prevent fraudulent activities, making transactions more secure. Blockchain technology, on the other hand, is revolutionizing record-keeping and authentication processes by providing an immutable and transparent ledger for financial transactions, thus reducing fraud and enhancing data integrity. The synergy of AI and blockchain further strengthens the banking sector. AI can be used to analyze blockchain data, detect anomalies, and identify trends, which can help banks optimize risk management and decision-making. Smart contracts, a feature of blockchain, can be automated and enforced using AI, simplifying complex agreements and ensuring compliance. Additionally, AI algorithms can help banks make more informed lending decisions by analyzing a customer's creditworthiness based on a broader range of data, including transaction histories and social media activity. Overall, the combination of AI and blockchain technology in the banking sector is streamlining operations, improving security, and enhancing the customer experience. By leveraging the power of these cutting-edge technologies, banks are well-positioned to adapt to the evolving financial landscape while ensuring the trust and satisfaction of their customers.

Veerla [8] describes that in the banking sector, machines and algorithms are playing a transformative role in improving and enhancing human intelligence. These technologies are enabling banks to harness the power of data, automation, and predictive analytics to provide better services and make more informed decisions. Machine learning algorithms, for example, analyze vast amounts of financial data to detect patterns and trends that can guide investment strategies and risk management. Automated customer service chatbots and virtual assistants handle routine inquiries, allowing human bank employees to focus on more complex customer interactions and financial planning. Additionally, advanced security algorithms help safeguard sensitive financial information, reducing the risk of fraud and cyberattacks. Furthermore, the adoption of blockchain technology in the banking sector, which relies on algorithmic consensus mechanisms, enhances the transparency and security of financial transactions. It reduces the need for intermediaries in cross-border transactions and ensures data integrity, which ultimately benefits both the bank and its customers.

Donepuii [9] describes about the impact of chatbots in banking sector and how Artificial intelligence and machine learning techniques are Artificial Intelligence (AI) and Machine Learning (ML) have brought about significant transformations in the banking sector. These technologies are employed for credit scoring and risk assessment, allowing banks to make more precise lending decisions by analyzing vast datasets and identifying creditworthiness patterns. In fraud detection and prevention, AI and ML proactively identify suspicious activities by analyzing transaction histories and flagging unusual behavior in real time, safeguarding both financial institutions and customers. Moreover, AI and ML enhance operational processes, improve customer service through chatbots and virtual assistants, offer personalized banking services, and optimize investment advice. Overall, these technologies have revolutionized the banking industry, boosting efficiency, security, and the customer experience, making it more seamless and customer-centric.

METHODOLOGY

User-Ask Query: The user initiates a conversation by asking a question or making a request to the chatbot. This query is received and processed by the chatbot.

Process Query: The chatbot processes the user's query, which often involves tasks like tokenization, language understanding, and context analysis. This step aims to understand the user's intent and extract relevant information from the query.

Database Query: After processing the user's query, the chatbot may need to interact with a database to retrieve relevant information or data. This could involve querying a database for specific information, such as product details, customer records, or any other data that the chatbot needs to provide accurate responses. The JSON structure taken from Kaggle platform has set of intents for a chatbot. Here there are two main components: "intents" and "responses." Each intent consists of several properties, including "tag," "patterns," and "responses."

Output-Process Query: Once the relevant information has been retrieved from the database or processed internally, the chatbot prepares its response. This involves generating a meaningful and contextually relevant response to the user's query.

Response Query: The chatbot sends the prepared response to the user. This response could be in the form of text, speech, or any other suitable medium for communication with the user.

Update Logs: The chatbot maintains logs to track and record interactions with users. This log may include the user's queries, the chatbot's responses, timestamps, and other relevant data. It helps in auditing and improving the chatbot's performance over time.

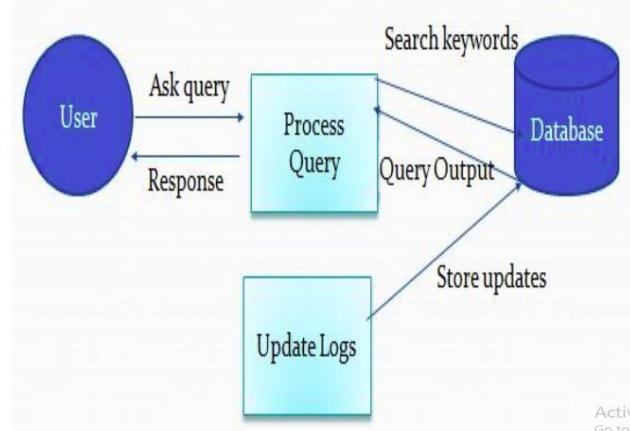
Store Updates to Database: If the chatbot needs to update the database with new information based on user interactions, this step involves storing the updates. For example, if the chatbot is used for customer support and needs to log new support ticket information, it will update the database accordingly.

SYSTEM ARCHITECTURE

The development and operation of a banking chatbot involve a series of crucial stages. It commences with Data Collection and Training, where an extensive dataset of banking-related documents and customer interactions is gathered to train the AI model [13,14,15,16]. Natural Language Processing (NLP) plays a pivotal role in enabling the chatbot to grasp and interpret customer language, discerning their intent, extracting vital information, and responding in a human-like manner. Subsequently, user Interaction takes center stage, as customers engage with the chatbot through various messaging interfaces, be it a website chat window, mobile app, or even voice assistants like Alexa or Google Assistant, seeking answers to questions or services. Response Generation is the next step, with the chatbot understanding the user intent and collected data to produce responses, which can be as text, audio, or visuals depending on the platform and user preferences.

A chatbot follows a sequence of steps to interact with users effectively. It starts with understanding the user's query, retrieving or processing the information from a database, preparing a response, and then followed by logging the interaction and additionally, it may update the database if necessary, such as adding new records, modifying existing ones based on the user interactions. This module allows the chatbot to provide meaningful and accurate responses while maintaining a record of its interactions for analysis and for future improvements. The architecture diagram is given.

Fig. 1. Architecture diagram of chatbot



RESULT

To sum up the implementation of NLP and Machine Learning, in the Bank Chatbot shows promise for enhancing customer service and automating banking processes. To further enhance the

systems performance, advanced machine learning algorithms like Naive Bayes with a 90.6% accuracy rate can be utilized, which outperforms SVM with its accuracy of 76.2%. Fig.2 and Fig 3 describes about initiating chat and rising query. As technology continues to evolve it is expected that chatbot systems will seamlessly integrate into banking operations providing customers with personalized services. We have developed an application using streamlit to create an interface, between banks and their customers.

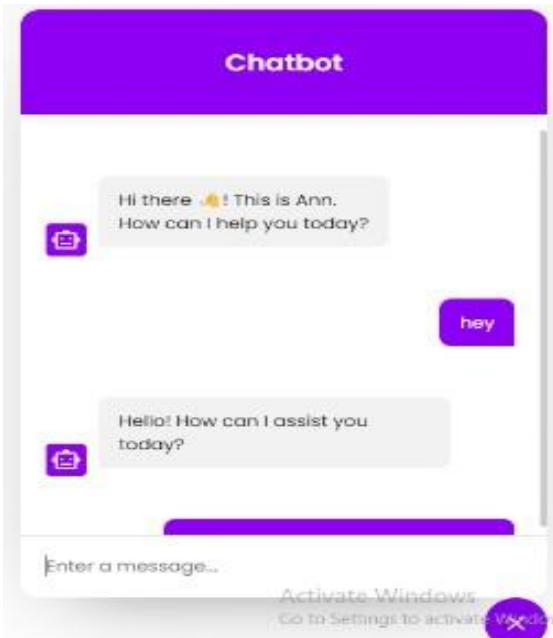


Fig.2 Initiating chat

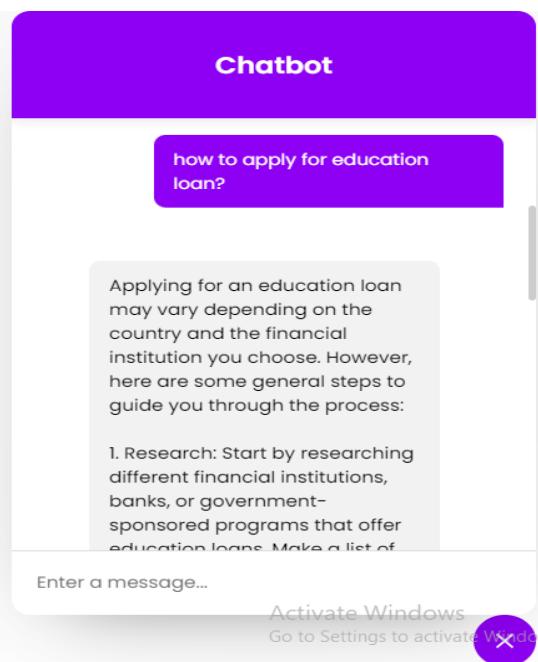


Fig.3 Raising query

CONCLUSION

The development of an AI-based chatbot for the banking sector is a groundbreaking project with the potential to revolutionize customer service and streamline operations. This chatbot, powered

by natural language processing (NLP), serves as an accessible and responsive virtual assistant available 24/7. It efficiently handles customer inquiries, provides information, and assists with various banking services, significantly improving accessibility and cost-efficiency. The benefits include cost savings by automating routine tasks, enhanced customer experiences through personalized interactions, and the ability to analyze customer data for insights and better decision-making. However, the project must prioritize security, compliance with industry regulations, and continuous learning for the chatbot to remain relevant and effective. In conclusion, an AI-based chatbot in the banking sector not only improves operational efficiency but it also enhances customer satisfaction.

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ABSTRACT:

Premenstrual syndrome is marked by the presence of physical and behavioural symptoms that recur frequently in the second half of the menstrual cycle and interfere with multiple aspects of the woman's life. Affective symptoms such as depression, anger, and anxiety, as well as somatic symptoms such as breast soreness, bloating and swelling, and headache, are among the primary symptoms of premenstrual syndrome. Prior to considering treatment, an accurate diagnosis of premenstrual syndrome should be established. The therapy goals for premenstrual disorders patients are to alleviate symptoms and improve functional impairment. A broad range of approaches, including lifestyle changes (exercise and relaxation techniques), cognitive behavioural therapy, and medications (selective serotonin reuptake inhibitors and/or combined oral estrogen-progestin contraceptives) may be beneficial for women in the prevention and management of premenstrual syndrome. The present paper highlights the hormonal therapies to be considered in premenstrual syndrome.

Keywords: Premenstrual syndrome; Hormone Therapy; Estrogen; Progesterone

INTRODUCTION:

Premenstrual syndrome (PMS) is a disruptive set of emotional and physical symptoms that regularly occur in the one to two weeks before the start of each menstrual period. It encompasses clinically significant somatic and psychological manifestations during the luteal phase of the menstrual cycle, leading to substantial distress and impairment in functional capacity. These symptoms disappear within a few days of the onset of menstruation. The pooled prevalence of reproductive age women affected with PMS worldwide amounts to 47.8%. Among these, about 20% of women experience symptoms severe enough to disrupt their daily activities, and the remaining have mild to moderate symptoms. [1]

EPIDEMIOLOGY:

Established studies showed that an estimated 90% of females of reproductive age were impacted by mild to acute premenstrual symptoms. Among them, about 20% to 40% encounter PMS, while 2% to 8% experience premenstrual dysphoric disorder, a severe type of premenstrual syndrome, characterized by cyclical mood alterations leading to clinically marked distress, as well as functional impairment. The rate of PMS is believed to be high among this population, and it adversely affects their life and academic performance. The prevalence of PMS among the university students of different countries are as follows; for example, 33.82% in China, 37% in Ethiopia, 39.9% in Taiwan, 65% in Egypt, 72.1% to 91.8% in Turkey, and 79% in Japan.

Two risk factors for PMS are obesity and smoking. Research reveals that women with a body mass index of 30 or above are nearly three times as likely to have PMS than women who are not obese. Women who smoke cigarettes are more than twice as likely to have more severe PMS symptoms. [2]

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SIGNS AND SYMPTOMS:

Any disruptive, cyclical symptom could be a symptom of PMS, and some sources have suggested that the number of claimed symptoms could exceed even 200. The exact symptoms and their intensity vary significantly from person to person, and even somewhat from cycle to cycle and over time. Most people with premenstrual syndrome experience only a few of the possible symptoms, in a relatively predictable pattern. Additionally, which symptoms are accepted as evidence of PMS varies by culture. Commonly reported symptoms in women with premenstrual syndrome include: [3]

- Psychological symptoms: Irritability, depression, crying/tearfulness, anxiety, tension, mood swings, lack of concentration, confusion, forgetfulness, unsociableness, restlessness, temper outbursts/anger, sadness/blues, loneliness
- Behavioural symptoms: Fatigue, dizziness, sleep/insomnia, decreased efficiency, accident prone, sexual interest changes, increased energy, tiredness
- Physical symptoms: pain, Headache/migraine, breast tenderness/soreness/pain/swelling (collectively known as premenstrual mastalgia), back pain, abdominal cramps, general pain
- Physical symptoms: bloating and swelling, Weight gain, abdominal bloating or swelling, oedema of arms and legs, water retention
- Appetite symptoms: Increased appetite, food cravings, nausea

PATHOPHYSIOLOGY AND AETIOLOGY:

The pathophysiology of premenstrual syndrome is complex, imprecise, and is not fully understood. [4]

- Women with PMS often have an exaggerated response to normal hormonal changes; although their levels of estrogen and progesterone are similar to those of women without PMS, rapid shifts in levels of these hormones promote pronounced emotional and physical responses
- It is anticipated that PMS is likely to be influenced by the action of progesterone on neurotransmitters like gamma-aminobutyric acid (GABA), opioids, serotonin, and catecholamine. Preexisting serotonin deficiency with increased progesterone sensitivity is also considered responsible for this disorder.
- An increase in prolactin levels or an increase in its sensitivity to the effect of prolactin, glucose metabolism alterations, abnormal hypothalamic–pituitary–adrenal (HPA) axis function, insulin resistance, and certain nutritional electrolyte deficiencies, and genetic factors have a role in PMS. Magnesium and calcium deficiencies are postulated as nutritional causes of PMS; studies evaluating supplementation show improvement in physical and emotional symptoms
- Stress amplifies the sympathetic activity, and this results in menstrual pain by significantly increasing the intensity of uterine contraction.
- The results of a large longitudinal study carried out by Bertone-Johnson et al suggested that the experience of abuse (emotional, sexual, or physical) in early life places women at higher risk for PMS in the middle-to-late reproductive years

PROGNOSIS:

PMS is generally a stable diagnosis, with susceptible individuals experiencing the same symptoms at the same intensity near the end of each cycle for years. Inability to maintain normal activities is part of the definition of this condition; hence, morbidity is related to loss of function. Complications of PMS may include school absence and behavioral problems. PMS and PMDD have been associated with a higher risk of bulimia nervosa. PMS may also be associated with an increased risk of future hypertension. Premenstrual breast pain is associated with fibrocystic breast changes. Treatment for specific symptoms is usually effective. Unsuccessful medical management of severe symptoms frequently indicates misdiagnosis. Even without treatment, symptoms tend to decrease in

perimenopausal women, and induction of menopause through surgical removal of the ovaries is a treatment of last resort. However, those who experience PMS are more likely to have significant symptoms associated with menopause, such as hot flashes. [5]

MANAGEMENT:

Pharmacotherapy was always the first line of treatment for premenstrual syndrome, but recent research has suggested the superior benefits with combination therapy. Combination of pharmacotherapies with nonpharmacological treatments, mainly cognitive and behavioural therapies, exercises, massage therapy, light therapy along with dietary and nutritional modifications have been proven beneficial for the treatment of premenstrual symptoms. [6]

Many treatments have been tried in PMS. Typical recommendations for those with mild symptoms include:

- reducing salt and caffeine intake
- not drinking alcohol
- reducing stress, e.g., by scheduling fewer activities during the week before menstruation
- learning what to expect with PMS
- increasing exercise and
- improving sleep

Management of physical symptoms: Anti-inflammatory drugs such as naproxen may help with some physical symptoms, such as pain. Spironolactone is effective as a diuretic when water retention cannot be addressed through self-care alone.

Management of emotional symptoms: Antidepressants, particularly selective serotonin reuptake inhibitors and venlafaxine, are used as the first-line treatment of severe emotional symptoms of PMS.

Vitamins, minerals, and alternative medicine: Calcium, magnesium, vitamin E, vitamin B6, chasteberry, and black cohosh may help some.

HORMONAL THERAPY:

PMS results from ovulation and appears to be caused by the progesterone produced following ovulation in women who have enhanced progesterone sensitivity. This enhanced sensitivity may be due to neurotransmitter dysfunction. Treatment is aimed at suppressing ovulation or reducing progesterone sensitivity. [7, 8]

Progesterone and progestogens: The rationale for the use of progesterone and progestogens in the treatment of PMS is based on the hypothesis that deficiency of progesterone and its derivatives is the cause of PMS. Dydrogesterone, norethisterone and levonogestrel are progestogens used for PMS therapy on the basis of their progesterone-like action.

Oestrogen: Hormonal therapy in PMS is geared towards producing anovulation. There is some evidence that oestrogenic suppression of ovarian function eliminates PMS. Oestrogen is used in the form of implants, patches or gel.

Combined oral contraceptive pill: The combined oral contraceptive pill prevents ovulation and should be effective for the treatment of PMS. Recent studies of COCs comprising 0.02 mg of ethinyl oestradiol and 3 mg of drospirenone (compound hormone pills for 24 days followed by hormone-inactive pills for last 4 days) demonstrated improved PMS symptoms.

Gonadotropin-releasing hormone analogues: The administration of GnRH analogues, either as depot injection or nasal spray, can produce anovulation resulting in medical oophorectomy. GnRH analogues cause pituitary desensitization to GnRH by downregulation of GnRH receptors. Consequently, there is a reduction in the secretion of sex hormones (luteinizing hormone and follicle-stimulating hormone), and, eventually, anovulation is induced. There is some evidence to show that

GnRH analogues are more efficacious for the physical symptoms of PMS than the behavioural symptoms. GnRH analogue therapy will help to identify women with severe PMS who would benefit from bilateral oophorectomy. A meta-analysis reported that GnRH agonists improve PMS symptoms with an odds ratio of 8.66. GnRH agonists had a better effect on physical than psychological symptoms, although the difference was not statistically significant. However, the use of GnRH agonists leads to a medically induced menopausal state, which is characterized by typical postmenopausal symptoms including amenorrhea, bone loss, vasomotor symptoms, and flushing. To decrease these side-effects, add-back therapy is typically employed. During this therapy, progestogen is necessary to protect the endometrium, but this hormone may cause PMS-like symptoms. Therefore, tibolon can be used instead to avoid symptom recurrence.

Danazol: Danazol has androgenic and antigenadotrophic properties. It is used in gynaecology for the treatment of endometriosis, fibroids, menorrhagia and other menstrual disorders such as PMS. Danazol has been shown to be of benefit in the treatment of PMS and cyclic mastalgia when given in doses of 400 mg or 200 mg continuously. Danazol is thought to produce benefit by suppressing ovulation and eliminating hormonal cyclicity.

SURGERY:

Hysterectomy with bilateral oophorectomy or bilateral oophorectomy is a cure for PMS, but this is rather invasive and rarely justified. Surgery is reserved for severe cases of PMS in which other medical treatments have failed to provide any benefit. Although rarely performed, it has been shown that surgery in the form of total abdominal hysterectomy and bilateral salpingo-oophorectomy with appropriate HRT is an extremely effective and well-accepted permanent cure for PMS. [9]

PATIENT EDUCATION

Because PMS may cause major morbidity for the adolescent, providing patient education regarding alternative therapies that may alleviate some symptoms is important. Behavioral counseling and stress management may help the patients regain control during times of high emotionalism. Relaxation techniques may also help. Areas of stress should be identified. Relaxation techniques such as yoga, biofeedback, and self-hypnosis may be beneficial. Regular exercise often decreases the symptoms of PMS. Patients should be counselled to avoid salt, caffeine, alcohol, and simple carbohydrates.

CONCLUSION:

The exact pathophysiology of PMS is unknown but ovulation has to occur for symptoms to develop. Therefore, ovarian hormones are thought to be responsible for causing PMS. In summary, hormonal therapy is one of the treatment options for premenstrual syndrome and can be effective in reducing the severity of symptoms. Additionally, lifestyle modifications and alternative treatments should also be considered in managing PMS.

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Abstract

Any location can serve as a destination, including a nation, area, province, district, city, park, museum, residential area, etc. The comprehensive process of destination management encompasses the various aspects of the destination that need to be managed. As the primary organizations in charge of a destination's growth, promotion, and strategic planning, destination management organizations (DMOs) are vital to the tourist sector. DMOs use long-term planning to pinpoint a destination's special qualities and leverage them. They create tourism-boosting plans while taking sustainability into account on the social, economic, and environmental fronts. DMOs frequently offer tourists information and support services, such as brochures, maps, and help with travel arrangements. DMOs work with a range of stakeholders, including citizens, corporations, community organizations, and municipal governments. Effective destination management requires cooperation from all stakeholders in order to overcome obstacles and accomplish shared objectives.

Although tourism can contribute to the prosperity of a place or region as a whole, it must be carefully organized. Delivering this to a destination requires a comprehensive approach, which destination management offers. Facilitating the management of all the essential components that comprise a destination, it is a coordinated procedure. A study is undertaken to explore the role played by destination management organizations impact the perception and allure of a location.

Keywords: *Destination management organizations, Destination, DMOs, Management, Tourism, Tourist, Location.*

Introduction

The global tourism industry is worth trillions of dollars. Every year, more than 1.2 billion people travel overseas to take in the various cultures and natural settings found around the globe. This activity is essential to economic development and serves as a major motivator and instrument for achieving more general objectives in the same vein. Any location can serve as a destination, including a nation, area, province, district, city, park, museum, residential area, etc. The comprehensive process of destination management encompasses the various aspects of the destination that need to be managed.

The UNWTO defines destination management as the careful and well-coordinated planning of every component that goes into creating a tourist destination. This can entail anything from drawing tourists to offering them amenities to use while they are in town. Additionally, local companies and local expertise can be incorporated into destination management to assist create immersive experiences and draw even more tourists to the area.

DMOs take part in a range of initiatives to support and advance environmentally friendly travel practices, such as:

- ✓ Informing visitors about the attractions and services available at the destination

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- ✓ Promotions of destinations with focused campaigns
- ✓ Collaborating with other groups on sustainability-related issues in order to accomplish shared objectives
- ✓ Addressing tourism-related concerns raised by locals

Review of Literature

A major contributing factor to destination competitiveness is being effectively organised, in the form of a well-resourced and well-managed destination marketing organisation (DMO) that has strong collaborative relationships with government, media, local businesses, travel intermediaries and host community. (Steven Pike, 2020)

At present, the main function of DMOs is to increase tourist visitation to a destination area. But this is a major challenge given that the DMOs neither shape the product nor control its manufacturing, pricing and delivery and, ultimately, cannot influence tourist satisfaction with the overall experience at the destination. Their role is confined to marketing a tourism destination with their hands 'tied behind their backs'. (Youcheng Wang and Abraham Pizam, 2011)

The first destination marketing organisations predate the tourism destination marketing academic literature by over a century. For example, Switzerland's first regional tourism organisation (RTO) was established at Saint Moritz in 1864. (Laesser, 2000)

From the demand side, travelers have a variety of choices of available destinations; from the supply side, destination marketing organizations at different levels are trying their best to compete for attention from a highly competitive marketplace (Heath and Wall, 1992).

Varghese and Paul (2014) highlight the need for the implication of Destination Management Organizations to bring in a body of control that oversees the destination and, at the same time, achieves visitor satisfaction. "A DMO will be the nerve center of the destination that holds crucial information pertaining to the market; it brings about a total management system and helps in coordinating and controlling the flow of tourists, tackles present trends and challenges and is that platform on which all stakeholders come in contact with the potential tourists."

Objectives

The study is undertaken

- To understand the importance of DMOs in tourism industry
- To explore the relation between DMOs and destinations
- To identify the limitations of DMOs in establishing itself in a destination

Importance of destination management organizations in tourism industry

Marketing and Promotion: DMOs work with different target markets to promote their destinations. To increase awareness and draw tourists, this entails public relations, social media campaigns, advertising, and other promotional initiatives.

Research and Analysis: To comprehend consumer trends, traveler preferences, and the effects of tourism on the location, DMOs carry out research. Their decision-making regarding marketing tactics and resource allocation is aided by this knowledge.

Partnership with Stakeholders: DMOs collaborate closely with a wide range of stakeholders, including citizens, businesses, community organizations, and local government. Working together is crucial for regulating the effects of tourism on the location and developing sustainable tourism.

Product Development: DMOs are responsible for expanding and changing the range of tourism products that their destination offers. To improve the entire visitor experience, this can involve developing new attractions, making infrastructural improvements, and working with neighborhood companies.

Event Management: To draw tourists and strengthen the local economy, DMOs frequently plan or assist with festivals, conferences, and other events. The destination's allure is enhanced by these events.

Crisis Management: In the event of natural catastrophes, pandemics, or other unanticipated problems that affect tourism, DMOs may be involved in crisis management and recovery operations.

Visitor Services: DMOs frequently offer resources including maps, brochures, and guides, as well as information and support to tourists. They might run websites and visitor centers to assist travelers with trip planning.

Key features of DMOs

Successful DMOs mix tourism promotion with maintaining the destination's distinctive qualities and sustainability. They are essential in forming a destination's overall tourism strategy and advancing the social and economic advancement of the area.

Adoption of Technology: Using technology to improve tourist services, destination management, and marketing. Using social media, online reservation platforms, and other digital technologies are examples of this.

Implementing quality assurance procedures is one way to make sure that tourist attraction and services live up to expectations and give guests a satisfying experience.

Training and Education: To improve the general quality of tourism services, local businesses, tourism professionals, and community people should be given access to training and educational programs.

Sustainability Initiatives: To reduce the detrimental effects of tourism on the environment, local communities, and culture, DMOs are placing a greater emphasis on encouraging sustainable tourist practices.

Advocacy and Policy Influence: DMOs push for laws that promote tourist growth and deal with issues that the sector faces. They might collaborate with local authorities to influence laws and the construction of infrastructure.

Challenges and limitations faced by DMOs in tourism industry

Shifting Customer Behavior: DMOs may find it challenging to predict and adjust to the swift shifts in consumer tastes and behavior brought about by social media and other technologies.

Political and Economic Instability: Natural disasters, political upheaval, and unstable economies can all have a big effect on tourism and make it difficult for DMOs to draw tourists.

Community Engagement and Management: It can be difficult to strike a balance between the objectives of tourism development and the interests of the local community. Cultural conflicts, and adverse effects on locals are possible outcomes.

Infrastructure Development: An area's ability to flourish and the quality of the traveler experience can be impacted by inadequate or antiquated transportation, lodging, and attraction systems.

Data Management and Analysis: DMOs may find it difficult to collect and evaluate data in order to make well-informed decisions, particularly if they lack the required resources and experience.

Funding and Resources: DMOs may find it difficult to properly market and promote their location if they have insufficient financial resources. Reliance on public funds could be erratic and vulnerable to reductions in spending.

Global rivalry: It can be difficult for DMOs to stand out in the fierce rivalry among travel destinations. Smaller locations could find it difficult to compete with more well-known, bigger ones.

Successful DMOs can overcome obstacles in spite of these difficulties by implementing creative plans, remaining flexible, and continuing to place a high priority on sustainable tourism practices. Effective destination management relies heavily on strategic planning, community involvement, and regular assessments.

Suggestions

- Create efficient systems for gathering feedback from visitors and the neighborhood. Utilize input to resolve problems, modify marketing tactics, and provide services that are always better.
- Invest in data analytics to learn about the trends, preferences, and behavior of tourists. Make data-driven decisions about resource allocation, infrastructure development, and marketing tactics.
- Encourage cooperation between neighborhood companies, governmental organizations, and community members. To improve marketing efforts, form alliances with airlines, travel agencies, and other tourism-related businesses.
- Incorporate local communities into the decision-making process to guarantee that the development of tourism is in line with their requirements and principles. Develop initiatives that help the community's citizens and foster goodwill between visitors and the locals.
- To uphold excellent standards, offer continuing training programs to nearby companies and service providers. Encourage a feeling of pride and responsibility in the local population by educating them about the advantages and difficulties of tourism.

Conclusion

DMOs have a complex impact on how prospective tourists view a location and find it enticing. It greatly enhances a destination's appeal through strategic marketing, branding, community involvement, and an emphasis on improving the entire visitor experience. DMOs have a complicated effect on how potential visitors perceive and find an attraction. Through smart branding, marketing, community involvement, and an emphasis on enhancing the entire guest experience, DMOs significantly increase a destination's attractiveness.

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Abstract:

Schizophrenia is a complex and debilitating mental disorder characterized by a range of symptoms that affect thinking, emotions, and behaviour. This abstract provides an overview of the key aspects of schizophrenia, including its prevalence, etiology, and clinical manifestations. The disorder typically emerges in early adulthood and significantly impacts an individual's ability to function in daily life. Genetic and environmental factors contribute to the development of schizophrenia, and neurobiological abnormalities, such as alterations in neurotransmitter systems, are implicated in its pathophysiology. Common symptoms include hallucinations, delusions, disorganized thinking, and impaired social functioning. The course of schizophrenia is variable, with periods of remission and relapse. Treatment approaches often involve a combination of antipsychotic medications, psychotherapy, and social support. Despite advances in understanding and managing the disorder, challenges persist in providing comprehensive care and addressing the stigma associated with schizophrenia. Ongoing research aims to enhance our understanding of the underlying mechanisms and improve therapeutic interventions for individuals affected by this complex mental illness.

Keywords: Mental disorder, genetic factors, hallucination, delusion, neurons

INTRODUCTION:

Schizophrenia stands as one of the most enigmatic and challenging mental health disorders, affecting approximately 1% of the global population. This complex condition profoundly impacts an individual's cognitive, emotional, and social functioning, often leading to disruptions in personal relationships, occupational pursuits, and overall quality of life. Characterized by a diverse array of symptoms, including hallucinations, delusions, disorganized thinking, and impaired executive function, schizophrenia poses a significant burden on both those directly affected and society at large. The onset of schizophrenia typically occurs during the critical period of late adolescence to early adulthood, a time when individuals are navigating important life transitions. Its multifactorial etiology involves a complex interplay of genetic predispositions, neurobiological factors, and environmental influences, making it a subject of extensive research and clinical scrutiny. Despite advancements in our understanding of the disorder, the precise mechanisms underlying its development and progression remain elusive. This introduction aims to provide a glimpse into the intricate landscape of schizophrenia, touching upon its prevalence, risk factors, and the diverse array of challenges faced by individuals living with the disorder. As we delve deeper into the realms of neurobiology, genetics, and psychosocial aspects, we embark on a journey to unravel the complexities of schizophrenia, seeking to enhance our comprehension of this multifaceted mental health condition. Through increased awareness and a nuanced understanding, we strive to pave the way for improved diagnosis, treatment, and support for individuals grappling with the profound impact of schizophrenia on their lives [1,2].

ETIOLOGY:

The etiology of schizophrenia is complex and multifaceted, involving a combination of genetic, neurobiological, and environmental factors. Researchers continue to explore these intricate interactions

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to gain a more comprehensive understanding of how this mental disorder develops. While the exact cause remains elusive, several key elements contribute to the etiology of schizophrenia:

1. Genetic Factors:

- **Heritability:** There is a substantial genetic component to schizophrenia, as individuals with a first-degree relative (parent or sibling) affected by the disorder have a higher risk. However, no single gene has been identified as a sole cause.
- **Polygenic Nature:** Schizophrenia is considered polygenic, meaning that multiple genes contribute to its risk. Various gene variations may increase susceptibility, and interactions between these genes and environmental factors play a role [3].

2. Neurobiological Factors:

- **Dopamine Dysregulation:** The dopamine hypothesis suggests that an imbalance in dopamine transmission in the brain, particularly in the mesolimbic pathway, is implicated in schizophrenia. Antipsychotic medications that block dopamine receptors often alleviate symptoms.
- **Glutamate Dysfunction:** Aberrant glutamate neurotransmission, specifically involving the N-methyl-D-aspartate (NMDA) receptor, is also linked to schizophrenia. This has led to the development of new treatment avenues targeting the glutamatergic system [4].

3. Structural and Functional Brain Abnormalities:

- **Enlarged Ventricles:** Brain imaging studies have identified structural abnormalities in individuals with schizophrenia, including enlarged ventricles and reduced volume in certain brain regions.
- **Neurodevelopmental Factors:** Disturbances in neurodevelopment, possibly influenced by genetic and environmental factors, may contribute to structural and functional brain abnormalities seen in schizophrenia.

4. Prenatal and Perinatal Factors:

- **Maternal Infections and Malnutrition:** Exposure to certain infections or malnutrition during pregnancy may increase the risk of schizophrenia in the offspring.
- **Complications During Birth:** Adverse events during birth, such as oxygen deprivation, have been associated with a slightly higher risk of schizophrenia.

5. Psychosocial and Environmental Factors:

- **Stress and Trauma:** High levels of stress, especially during critical periods of development, may contribute to the onset or exacerbation of schizophrenia in genetically predisposed individuals.
- **Urban Upbringing:** Growing up in urban environments has been linked to a higher risk of schizophrenia, possibly due to increased stressors or other environmental factors [5,6].

Understanding the interplay between these factors is crucial for advancing both the prevention and treatment of schizophrenia. Ongoing research aims to unravel the complexities of this disorder and identify targeted interventions for individuals affected by its profound impact on mental health.

CLINICAL MANIFESTATION:

Schizophrenia is characterized by a diverse range of symptoms that affect multiple domains of an individual's mental functioning. The clinical presentation of schizophrenia can vary widely among

affected individuals, and the onset of symptoms typically occurs during late adolescence or early adulthood. The symptoms are often categorized into positive, negative, and cognitive domains:

1. Positive Symptoms:
 - Hallucinations: Perceptions of stimuli that are not present, commonly auditory in nature. Individuals may hear voices, experience visual hallucinations, or perceive other sensory stimuli.
 - Delusions: Fixed, false beliefs that are resistant to reasoning or contrary evidence. Delusions may involve paranoid thoughts, grandiosity, or unusual beliefs about the self or the world.
 - Thought Disorders: Disorganized thinking, reflected in speech patterns. This may include incoherence, derailment (thoughts going off track), or tangentiality (irrelevant responses).
2. Negative Symptoms:
 - Affective Flattening: Reduced emotional expression, manifesting as a restricted range of emotions, diminished facial expressions, and a lack of responsiveness.
 - Anhedonia: Decreased ability to experience pleasure or interest in activities that were once enjoyable.
 - Avolition: Impaired ability to initiate and sustain purposeful activities, often leading to social withdrawal and neglect of personal hygiene.
3. Cognitive Symptoms:
 - Impaired Memory and Attention: Individuals with schizophrenia may experience difficulties in memory retention and concentration.
 - Executive Dysfunction: Challenges in decision-making, planning, and problem-solving.
 - Disorganized Thoughts: Disruptions in the thought process, affecting logical reasoning and goal-directed behavior.
4. Impaired Reality Testing:
 - Impaired Insight: Individuals with schizophrenia may lack awareness of the nature and severity of their symptoms, leading to poor insight into their condition.
 - Impaired Judgment: Difficulty in making sound decisions and evaluating the consequences of one's actions.
5. Motor Symptoms:
 - Catatonia: Altered motor behavior that can range from immobility to excessive and purposeless movement [7].

The course of schizophrenia is often chronic, with periods of exacerbation and remission. Individuals may experience functional impairment in various aspects of life, including work, education, and interpersonal relationships. The severity and combination of symptoms can vary, leading to different subtypes of schizophrenia.

Effective management typically involves a combination of antipsychotic medications, psychotherapy, and psychosocial interventions. Early detection and intervention are crucial for improving long-term outcomes and minimizing the impact of the disorder on an individual's life.

DIAGNOSIS:

The diagnosis of schizophrenia involves a comprehensive assessment by mental health professionals, considering the presence and duration of specific symptoms, as well as ruling out other potential causes for the observed clinical presentation. The diagnostic criteria are typically outlined in widely accepted classification systems, such as the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) published by the American Psychiatric Association. The following criteria are commonly used for diagnosing schizophrenia:

DSM-5 Diagnostic Criteria for Schizophrenia:**1. Characteristic Symptoms:**

- Presence of two or more of the following symptoms for a significant portion of time during a one-month period (or less if successfully treated):
 - Delusions
 - Hallucinations
 - Disorganized speech (e.g., frequent derailment or incoherence)
 - Grossly disorganized or catatonic behavior
 - Negative symptoms (e.g., diminished emotional expression or avolition)

2. Social/Occupational Dysfunction:

- Significant impairment in social, occupational, or self-care functioning, as evidenced by a marked decline from a previous level of functioning.

3. Duration:

- Continuous signs of the disturbance persist for at least six months. This includes at least one month of active-phase symptoms (i.e., the presence of delusions, hallucinations, or disorganized speech) and may include periods of prodromal or residual symptoms.

4. Exclusion of Other Disorders:

- The disturbance is not better explained by other mental health disorders, substance use, medical conditions, or psychosocial stressors.

5. Schizoaffective and Mood Disorder Exclusion:

- Symptoms are not solely accounted for by a mood disorder with psychotic features or schizoaffective disorder.

6. Subtypes:

- The DSM-5 eliminated the subtypes of schizophrenia (paranoid, disorganized, catatonic, undifferentiated, and residual) due to concerns about reliability and validity. Instead, it emphasizes dimensional assessments of symptom severity.

The diagnosis of schizophrenia is a clinical judgment made by a trained mental health professional based on a thorough evaluation of the individual's symptoms, history, and overall functioning. The process may involve interviews, observation, and collaboration with other healthcare providers to rule out medical or substance-induced causes for the symptoms [8,9].

MANAGEMENT:

The management of schizophrenia is typically multifaceted and involves a combination of pharmacological, psychosocial, and supportive interventions. The primary goals of treatment are to alleviate symptoms, prevent relapses, improve overall functioning, and enhance the individual's quality of life. The specific approach may vary based on the severity of symptoms, the individual's preferences, and the presence of co-occurring conditions. Here are key components of the management of schizophrenia:

1. Pharmacological Treatment:

- **Antipsychotic Medications:** Antipsychotic drugs are the mainstay of pharmacological treatment for schizophrenia. They work by modulating neurotransmitter activity, particularly dopamine. First-generation (typical) and second-generation (atypical) antipsychotics are available. The choice of medication depends on the individual's response, side effects, and medical history.
- **Long-Acting Injectable Antipsychotics:** In some cases, long-acting injectable formulations of antipsychotics may be recommended to ensure medication adherence and prevent relapses.

2. Psychosocial Interventions:

- **Individual Psychotherapy:** Cognitive-behavioral therapy (CBT) and other psychotherapeutic approaches can help individuals manage symptoms, improve coping skills, and address negative thought patterns.
 - **Family Therapy:** Involving family members in therapy can enhance support, communication, and understanding, which are crucial for the well-being of the individual with schizophrenia.
 - **Social Skills Training:** Targeted interventions to improve interpersonal and communication skills can enhance the individual's ability to navigate social situations.
3. **Rehabilitation Services:**
- **Vocational Rehabilitation:** Programs that assist individuals in developing and maintaining employment skills, fostering independence, and integrating into the workforce.
 - **Community Support Services:** Access to community-based resources, support groups, and recreational activities can aid in social integration and overall well-being.
4. **Crisis Intervention:**
- **Crisis Management Plans:** Developing personalized crisis management plans can help individuals, families, and healthcare providers respond effectively during periods of acute symptom exacerbation.
5. **Integrated Care:**
- **Comprehensive Treatment Teams:** Collaborative care involving psychiatrists, psychologists, social workers, nurses, and other mental health professionals ensures a holistic approach to treatment.
 - **Medical Management:** Monitoring and managing any potential side effects of medications, as well as addressing co-occurring medical conditions [10].

CONCLUSION:

In conclusion, schizophrenia remains a complex and challenging mental health disorder, characterized by a spectrum of symptoms that significantly impact an individual's cognitive, emotional, and social well-being. As our understanding of the etiological factors, neurobiological underpinnings, and clinical presentation of schizophrenia continues to evolve, so does the multifaceted approach to its management. The diagnosis of schizophrenia requires a careful and comprehensive evaluation, considering a diverse array of symptoms and ruling out other potential causes. Ongoing research and advocacy efforts aim not only to refine treatment strategies but also to dispel misconceptions and promote a more compassionate and inclusive understanding of schizophrenia. In the journey toward improved outcomes for individuals with schizophrenia, collaboration among healthcare professionals, researchers, families, and communities is paramount. By fostering understanding, providing comprehensive support, and embracing innovative approaches, we strive to enhance the lives of those affected by schizophrenia and move closer to a future marked by increased awareness, reduced stigma, and improved quality of care.

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ABSTRACT

Love and sacrifice play a central role in the novel Chemmeen. Love is full of emotion and sacrifice. The novel focused on the sacrifice of Karuthamma and her deep love for Pareekutty. This paper seeks to delve into the intricate love relationship between Pareekutty, the son of a Muslim trader and Karuthamma, the daughter of a Hindu fisherman. The myth of the fisherman community is that if the married fisher woman was adulterous when her husband was in the sea. Because his wife misplaced her chastity. The myth is purity. Because of the rules of the fishing community, their daughter has to marry in their own community. So Karuthamma sacrificed her love for Pareekutty. Because of this caste system, pure love will be isolated. Their love could not reap the rewards of success. Karuthamma had married an orphan named Palani. By the stroke of destiny, Karuthamma and Pareekutty meet each other. Then there was their nostalgic rebirth of love. The myth of the community truly happened in their life. Finally, the novel ends with Karuthamma and Pareekutty's deaths and at a distance lies the washed-up corpse of Palani.

Keywords: *love, sacrifice, caste, myth, chastity.*

INTRODUCTION

Chemmeen was written by Thakazhi Sivasankara Pillai in 1956. It is a passionate love story set in the backdrop of the coastal areas of Kerala. Chemmeen is a well-known Malayalam novel. The title Chemmeen means "The Prawn" in English, is widely regarded as one of the most vital work of Malayalam literature. It has also taken as a film. Chemmeen delves deeply into love, sacrifice and traditional rules of the fishing community. The novel primarily explores the issues of love and sacrifice. Their love is depicted as sincere and powerful, transcending the boundaries of societal norms and religious differences. The novel portrays the sacrifices made by the characters for the sake of their family status and communities. The decision of karuthamma. regularly clash with private desires, main to heartbreak choices and outcomes.

LOVE AND SACRIFICE

The novel Chemmeen begins with the love relationship between the daughter of a Hindu fisherman, Karuthamma and the Muslim fish trader son Pareekutty. Chembankunju's most effective intention is to own a ship and a net. He eventually succeeds in buying both with the assist of Pareekutty. He is a dishonest fisherman. Karuthamma's sister tells about the love affair between karuthamma and Pareekutty. Karuthamma's mother Chakki knows about the love affair and warns her daughter about the limitations of strict social subculture. Karuthamma hears the endorse of her mother. She listens to her mother's advice and tries to be away from Pareekutty.

Karuthamma is a character that is trying to fit into the fishing community by making the right choice. Throughout the story is shown that Karuthamma and Pareekutty grow a forbidden love relationship. The way Pareekutty stares at her symbolizes that he wants her to be his wife. For that reason, Karuthamma feels in a certain way because he likes her, but society does not allow their relationship. According to the moral rules, their love relationship cannot proceed because she as a

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Hindu cannot relate to a Muslim. Her mind thinks about Pareekutty does not belong to their community. "He is not one of us. A Muslim. And he probably doesn't realise any of this" (p. 9). Due to their religious, social variations, and the rules of the fisherman community, their love is screwed up.

Chakki insist her husband that their daughter had attained the age of marriage. They worry about their social prestige that if their daughter goes out with a Muslim boy. Their family reputation could be ruined. They will not give their daughter to the Muslim community. Her mother deeply insist the notion that he belongs to another community. She denies her Love for the societal constrains. Karuthamma sacrifice her love now not for their Parents but for Pareekutty. If she loves him, something difficult things happening in the life of Pareekutty.

Karuthamma's sacrifice is the turning point in the novel. This article actually focused on the sacrifice of Karuthamma. The loss of love causes great pain in her life. No one in the world lives without love. Love is truly indescribable. Because it just brings everyone together and gives them satisfaction in life. In the human world, however, love is destroyed by social structure, race and religion. In a romance-focused novel, their lives have been ruined by the faith of their community.

Karuthamma sacrificed her love for Pareekutty and marries Palani, an orphan discovered by Chembankunju in the course of one of his fishing expeditions. Karuthamma accompanies her husband to his village. Her mother Panchami fall sick. And then Chembankunju married another widow woman and Panchami was not happy with her stepmother's behavior and her father. She goes to her sister's house. Meanwhile, Karuthamma has endeavoured to be an awesome wife and mother. Pareekutty lost all his wealth due to his love. He believe Chembankunju and give money to buy a boat. But later, Chembankunju did not keep his promise because of his greedy. Pareekutty lost his money and looks bankrupt.

Palani faces troubles that some fishermen speak wrong about his spouse karuthamma. He comes home and complains to Karuthamma, "You are a fallen woman. So they have declared I am unfit to go to sea" (p.179). But scandal approximately her antique love for Pareekutty spreads in the village. Karuthamma goes to her village. By a twist of destiny, Karuthamma and Pareekutty meet one night time and their antique love is wide awake. Karuthamma managed her emotions. But as a vision of his love, she forgets the living world and deeply thinks more about her lover Pareekutty.

Palani's friends ostracize him and refuse to take him fishing with them. Palani is going for fishing on his own. Palani and baiting a big shark is stuck in a big whirlpool at sea. The fisherman believed the folklore and trusted his wife. At that point, he calls his wife's name, Karuthamma. The sound of Palani is louder than the sound of the sea. He is not saved by the sea goddess. Because his wife lost her chastity. Next morning, Karuthamma and Parekutty, also lifeless, are found washed up on the shore. In the distance lie the washed-up corpse of Palani's baited shark.

CONCLUSION

This article focused on the love relationship between karuthamma and Pareekutty. Karuthamma gave up her love for Pareekutty and her fishing community. Because Pareekutty belongs to the Muslim community so Chembankunju did no longer give his daughter to the Muslim community. She hardly sacrifice her love for her circle of relatives reputation. After that Karuthamma had married an orphan Palani. She has endeavoured to be an awesome wife and mother. She had a responsible as a daughter and wife however she had sacrificed as a lover. Because of the caste and customs within the society. The love is rejected with the aid of societal constrains. She is a devoted wife. She meet her lover. She forgot the world and think about the nostalgic of her love. In the novel, there is a reborn of their love and it will give the death to the lover and Palani.

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