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# **Critical Assessment of Human Capital Factors Impacting Organizational Resilience Dynamics in the New World Order of Accentuated VUCA Complexities**

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## **Abstract**

We live in a fractured world that is non-linear in business results continuity and low on trend predictability. Organizations must thrive in this New World Order, characterized by chaos, turbulence, unpredictability, disruption, and outlier events. Professionals are adept at managing complicated situations with a predictable logic unique to each event. However, the dynamics of the accentuated Volatile, Uncertain, Complex, and Ambiguous World present unprecedented complexities where there are no straightforward solutions. These complex human-centric problems often comprise intertwined challenges that need approaches very different from routine situations. The low statistical reliability of predictive trends and the non-linear nature of complexities render many established organizational competencies irrelevant in this New World Order.

This study seeks to ascertain what it takes to create human capital to adapt to any outlier situation and excel. Our objective is to establish factors that create adaptive performance that enable organizations to deliver superior performance during any accentuated VUCA event. This research aims to establish competencies that enable adaptive performance that organizations can utilize to augment employee value propositions.

This study of critical human capital factors that impact organizational Resilience was undertaken using a mixed research methodology. The critical human factors for establishing organizational Resilience emphasized in this research paper are exhaustive primary and secondary research outcomes. Exploratory Studies and Focus Group Discussions were held with 985 high-potential corporate leaders and managers in various MNEs across domains.

Subsequently, through a global survey, quantitative research and analysis were undertaken with another select cohort of 105 high-potential leaders and managers to validate the qualitative analysis and ascertain critical factors. Thus, the final critical analysis for establishing Human Capital Resilience Factors combines qualitative and quantitative research.

The outcome of this study emphasizes the need to look for or develop specific traits in the organizational members that will empower them to manage abnormal outlier events. It must also be noted that as the criticality of work increases, so does the need for these traits become crucial. These traits also become pivotal when organizations intend to establish Operational and Strategic Resilience. This research argues that the employee lifecycle's recruitment, on boarding, development, engagement, and retention stages must focus on these factors to augment employee value proposition in the New World Order of chaos, unpredictability, and turbulence for their actualized engagement at work.

**Keywords:**

New World Order, VUCA, Adaptive Human Capital, Organizational Resilience, Employee Value Proposition, Adaptive Performance.

**Introduction**

The New World Order beyond the conspiracy theory "that hypothesizes a secretly emerging totalitarian world government" (Vollick, 2021) can be described as a geopolitically divided and fractured world that triggers chaos, turbulence, unpredictability, and disruptions at an increasingly rapid pace. "We are living in abnormal times. The global liberal order is in an advanced state of meltdown. And as the world rapidly shifts from a uni-polar to a multi-polar reality, the international system itself is exposed to profound instability. If the situation is not handled with extreme care, the potential for a major collapse is real" (Robert Muggah, 2018). Thus, in this New World Order, Political and Economic systems are intertwined, and their interplay determines the overall stability or instability of the global system. "The most important choices today aren't between government and free enterprise; they're between political and economic systems that work and those that don't" (Fox, 2012). Given this scenario, it becomes imperative for Organizations to evolve as High-Reliability Organizations in this accentuated world of Volatility, Uncertainty, Complexity, and Ambiguity to ensure overall stakeholder trust.

"The concept of a VUCA world — one that is volatile, uncertain, complex, and ambiguous — was introduced by the U.S. military as the Cold War ended and as the United States looked out over the emergence of a multilateral, rather than a bilateral, global landscape. This meant being prepared to take on increasing challenges from asymmetrical opponents." (Paul Kinsinger, 2012)

"Volatility is associated with velocity and turbulence. J. Kotler and A. Caslione (2009)[17] explain the latter from the standpoint of turbulence in nature, where it is characterised by aggressive and unsustainable behaviour. In this context, it is necessary to monitor rapid changes in different business areas which boost business opportunities. This means that a reduction in the response time to changes is the only way for enterprises to survive in VUCA conditions.

Uncertainty, defined as a state of the system in relation to its operating conditions is reflected in scientific works by W. Walker, P. Harremoes and J. Rotmans (2003) [18]. They conclude that uncertainty is a gap between the expected state and the actual development of the system of economic organisation. R. Wellborn and V. Casten (2004) [19] note that it is erroneous to assume that one can predict future with a reasonable probability in a period of uncertainty. Yet, this does not mean that there exists the so-called absolute uncertainty of the ongoing processes, since globally there are steady trends displaying progress in science and technology, human development, changes in the economic environment, etc. Effective measuring and monitoring of such trends makes it possible to be competitive in today's world, provided there is flexibility in business and preparedness to cope with rapid changes.

E. Beinhocker (2006) [20] links the complexity of the modern world with the development of science and technologies, the increasing complexity of relations, defining it as «complexity economics» which is characterised by the fact that there is no division into micro or macroeconomics, and the behaviour of a system occurs due to a variety of relations at the micro-level. It is open to the external environment and is unstable in view of constant changes. Complexity economics includes a number of aspects relating to behavioural economics, the network theory, simulation modelling and the chaos theory. According to the theory of complex systems, system behaviour occurs from interactions between economic agents, therefore simulating behaviours at an individual level and application of complex decision-making rules (both rational and irrational) under the conditions of informational incompleteness are considered to be important for a complex system.

The modern world is a world of economic, social and political ambiguity. On the one hand, the relevant situations and events may have a destructive impact. On the other hand, they may serve as a stimulus for further change and development. Ambiguity requires consideration of a significant number of possible scenarios relating to different situations and events and their likely consequences because the interpretation of the same factors involves evaluation of available alternatives" (Popova, Shynkarenko, Kryvoruchko, & Zéman, 2018). Therefore, the New World Order of accentuated VUCA demands that organizations enable Strategic and Operations Resilience to manage disruptions, turbulence, and chaos.

The National Academy of Science, NAS (2012) defines "Resilience as the ability to anticipate, prepare for and adapt to changing conditions and withstand, respond to, and recover

rapidly from disruption." Thus Creating Resilient Organizations requires a proactive human cognitive and behavioural application in planning, absorption, recovery, and adaptation. This conviction is supported by our empirical observations of Resilience building projects outlined in this paper. OECD's publication "Resilience Strategies and Approaches to Contain Systemic Threats" in its crucial insight states that high-impact and low-probability events, which are hard to predict, make it arduous to address systemic risks (Igor, Benjamin, & William, 2019).

Organizations are interdependent complex systems operating across the value stream, comprising human value creation actors across the business value chain to meet and exceed stakeholder expectations and achieve organizational objectives. "A value stream is the sequence of activities necessary to deliver a product, service, or experience to a customer, internal or external. Value streams cut across and connect siloed business capabilities. They provide end-to-end visibility of the activity flow, from customer request to delivery" (Gartner, n.d.). We further state that the dynamics of the New World Order create complex interdependencies in the macro and microenvironments. Therefore, it becomes important to distinguish between complicated systems and complex systems to derive the capabilities that need to be developed in the Human Capital.

Complicated systems, according to Probst and Bassi, "are composed of many different interacting parts whose behavior follows a precise logic and repeats itself in a patterned way." In contrast, complex systems "are dominated by dynamics that are often beyond our control. In a complex system, the variables involved never work in exactly the same way each and every time. Complex systems, particularly of the socio-economic variety, exhibit unpredictable or uncontrollable behaviour" (Howell, 2018).

Our research establishes that the accentuated VUCA intertwined non-linear complex challenges and organizational dynamics do not follow a statistical trend, thus further augmenting the role of Human Capital in the value stream.

## **1. The Purpose and the Objective of the Study**

This study aims to facilitate adaptive performance through its principle objective of ascertaining the Human Capital Factors for this complex VUCA New World Order. Also, this scientific study in people management was essential to developing new knowledge in Organizational and Business Resilience to empower academicians and business leaders.

## **2. Literature Review & Gaps**

Organizational Resilience is an evolving topic in academic literature, hence the criticality of this study. Fifty-one research articles on VUCA World, fifty-six on Resilience, and nine blogs on the Complexities of the New World Order were reviewed. The gaps identified by the Authors are:

❖ "Future research could focus on developing more detailed approaches for assessing Resilience. Practical insights are needed regarding how organizations can activate Resilience." (Linnenluecke, 2017)

❖ "Many Organizations will find themselves unprepared for the impact of adverse events unless they build suitable capacities and appropriate decision-making. Knowledge of how Resilience is defined by which variable it is determined and how it can be assessed, maintained, and improved over time." (Linnenluecke, 2017)

The above gaps establish the purpose and objectives of this study.

### **3. Research Methodology**

This study used a mixed research methodology, with purposive sampling, as its basis. It comprised initial exploratory studies, qualitative confirmatory studies, and a final factor determination global quantitative study.

**3.1 The Sampling Frame & Design:** This study's purposive sampling method and frame comprise high-potential corporate professionals from organizations where the need for Business Resilience was identified. The selection happened through the top 15% performers in appraisal process ratings or through psychometric evaluation of a sten score of 7 and above with the Saville Assessment Instrument (2022 Saville Assessment, n.d.).

Confirming that no specific instrument or methodology was exclusively created for the study acknowledges the limitations and delimitations of the sampling design.

The quantitative survey was administered to highly credible and willing C-suite and senior leaders globally for their authentic input. Thus, the generalizability of opinions may impact the validity of the findings.

#### **3.2 Phase I: Exploratory Studies:**

**3.2.1 First Exploratory Study:** The study comprised a critical analysis of 93 positions to determine stressors that created the need for Resilience.

**3.2.2 Second Exploratory Study:** An Appreciation Inquiry was administered within manufacturing organizations through four focus group discussions with 64 participants to investigate stressors that hinder Resilience.

**3.2.3 Third Exploratory Study:** A thorough third study was conducted via focus group discussions with 12-15 participants and 67 senior-level management members.

**3.3 Phase II: Ascertain Human Capital Factors :** Appreciative Inquiry-based twenty-four Focus Group Discussions in ten organizations were conducted across manufacturing, information technology, and not-for-profit organizations with 424 participants.

**3.4 Phase III: Design Thinking Experiments for Resilience :** Prototyping Experiments were conducted with ten organizations as a final step in resilience design thinking. These experiments resulted in 106 prototypes and involved another 430 participants.

The data was cleaned of inconsistencies and classified similarly to define keywords for all possible resilience dimensions. The final Keywords were captured from the above three phases

of the study for further quantitative analysis. The top management of every organization involved confirmed the results. These keywords were then used to construct exhaustive Quantitative Research in Phase Four.

**3.5 Phase Four: The Quantitative Survey :** A survey of 85 questions comprising all dimensions of Resilience identified was administered for final statistical determination.

#### 4. Analysis

The findings of all four phases of Qualitative Research about Human Capital Factors are summarized in Table 1 below:

*Table 1: Human Capital Factors Qualitative Keywords Analysis*

Human Capital Factors	Frequency	Frequency Percentage
Investing in Development	303	34%
Engaged at Work	269	30%
Ownership & Accountability	167	19%
Belongingness to Organization	101	11%
Agile Thinking Talent	42	5%
Adaptive Performance	6	0.7%
6 keywords (n = 985)	888	100%

The keywords converted into questions on a Likert Scale are indicated in Table 2 and Table 3:

*Table 2: Quantitative C-Suit Study Part 1*

Rating	The business world is currently operating in an era full of disruptive events.		Ability to accurately predict and anticipate disruptions in advance.		Agile Thinking Talent Build Resilient Brands.		A Positively Engaged Human Capital ensures Organizational Resilience.	
	1	2	3	4	5	6	7	8
Strongly agree	0	0%	3	2%	56	44%	64	58%
Agree	118	89%	42	32%	57	45%	39	35%
Somewhat agree	0	0%	0	0%	0	0%	0	0%
Neither agree nor disagree	9	7%	43	32%	13	10%	7	6%
Somewhat disagree	0	0%	0	0%	0	0%	0	0%
Disagree	6	5%	43	32%	1	1%	1	1%
Strongly disagree	0	0%	2	2%	0	0%	0	0%



n = 105

Table 3: Quantitative C-Suit Study Part 2

Rating	Superior Employee Belongings builds Organizational Resilience.		Ownership and Accountability build Resilient Organizations		Investment in Holistic Talent Learning and Development build Resilient Organizations		Adaptive performance builds Organizational Resilience.	
	5		6		7		8	
Strongly agree	54	49%	69	54%	47	42%	55	50%
Agree	42	38%	49	38%	51	46%	50	45%
Somewhat agree	0	0%	0	0%	0	0%	0	0%
Neither agree nor disagree	12	11%	9	7%	10	9%	5	5%
Somewhat disagree	0	0%	0	0%	0	0%	0	0%
Disagree	3	3%	1	1%	3	3%	1	1%
Strongly disagree	0	0%	0	0%	0	0%	0	0%
n=105								

Table 4: Human Capital Factor Impact on Resilience

Rate the impact of the Quality of Human Capital to cope with disruptions to build Organizational Resilience. Other Factors remaining constant (n = 105)	79.65%
Overall Human Capital Factor Dimension Ranking (Total Dimensions = 7) (n = 105)	2

Additional areas of focus in exploratory responses with high-frequency findings are listed in Table 5.

Table 5: Additional Areas of Focus Exploratory Responses

What can organizations do to improve the Quality of Human Capital? (Employee Value Proposition)	Frequency
Learning & development, Training, Competency	55
Talent Management	19
Employee engagement	16
Empowerment	10
n = 105	

## 5. Conclusion

The dimension of Human Capital holds a high second rank, following only the dimension of Value Creation complimenting each other.

There is a significant consensus that we live in a disruptive world. The predictability of disruptions varies based on the ecosystem in which the organizations operate, depending upon the type of industry, size, and technology maturity used for forecasting.

This research emphasizes that vertical and horizontal development of members ensures engagement at work, focuses on developing ownership and accountability, enhances organizational belongingness, develops thinking abilities for the agility of response, and augments experiments to ensure adaptation to changing scenarios.

This research concludes that the Employee Value Proposition is ensured through capability development interventions, talent identification and development, high employee engagement, and decision-making empowerment.

## 6. Limitations

This study does not explore all Organizations' stressors in the face of disruption. We also appreciate that several unique stressors in the Macro and Micro environment would emerge and need to be explored.

## 7. Scope for Further Research

Other dimensions besides the human capital factors need to be explored, and their relationships tested through mathematical models. Ascertaining each dimension and facet's definitions will also clarify subsequent research. These aspects are part of our expansive, ongoing study.

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## “A Case Study of Sentiment Analysis in the Hospitality Industry”

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### **Abstract:**

This case study explores the application of sentiment analysis in the hospitality industry using a comprehensive dataset of customer reviews from hotels and resorts. The study demonstrates how sentiment analysis techniques can be utilized to extract valuable insights from textual data, understand customer sentiments, and inform strategic decision-making processes in the hospitality sector. Through the analysis of real-world data, this case study highlights the potential benefits and challenges of implementing sentiment analysis in the hospitality industry.

**Keywords-** Sentiment analysis, case study, machine learning, hospitality

### **Introduction:**

The hospitality industry relies heavily on customer satisfaction and reputation management to maintain competitiveness and drive business success. With the proliferation of online review platforms and social media, hotels and resorts collect vast amounts of textual data containing valuable insights into customer sentiments, preferences, and experiences. Sentiment analysis offers a powerful tool for analyzing this textual data to understand customer sentiment trends, identify areas for improvement, and enhance overall customer satisfaction. This case study presents a detailed analysis of sentiment analysis in the hospitality industry, utilizing a comprehensive dataset of customer reviews.

### **Dataset Description:**

The dataset used in this case study consists of customer reviews collected from various hotels and resorts over a period of one year. The dataset includes textual reviews along with corresponding star ratings provided by customers. Each review is labeled with a sentiment category (positive, negative, or neutral) based on the star rating given by the customer. Additionally, metadata such as the hotel name, location, and date of review are included in the dataset.

## Methodology:

1. **Data Preprocessing:** The textual data undergoes preprocessing steps such as tokenization, lowercasing, punctuation removal, and stop word removal to clean the text and prepare it for sentiment analysis.
2. **Sentiment Analysis:** Using machine learning techniques such as natural language processing (NLP) and classification algorithms, sentiment analysis is performed on the preprocessed text data. The goal is to classify each review into one of the sentiment categories (positive, negative, or neutral) based on the textual content.
3. **Feature Extraction:** Features such as word frequency, sentiment lexicons, and n-grams are extracted from the text data to represent the linguistic characteristics of each review.
4. **Model Training:** A supervised learning model, such as a support vector machine (SVM) or a logistic regression classifier, is trained on the labeled dataset to predict sentiment labels for new reviews.

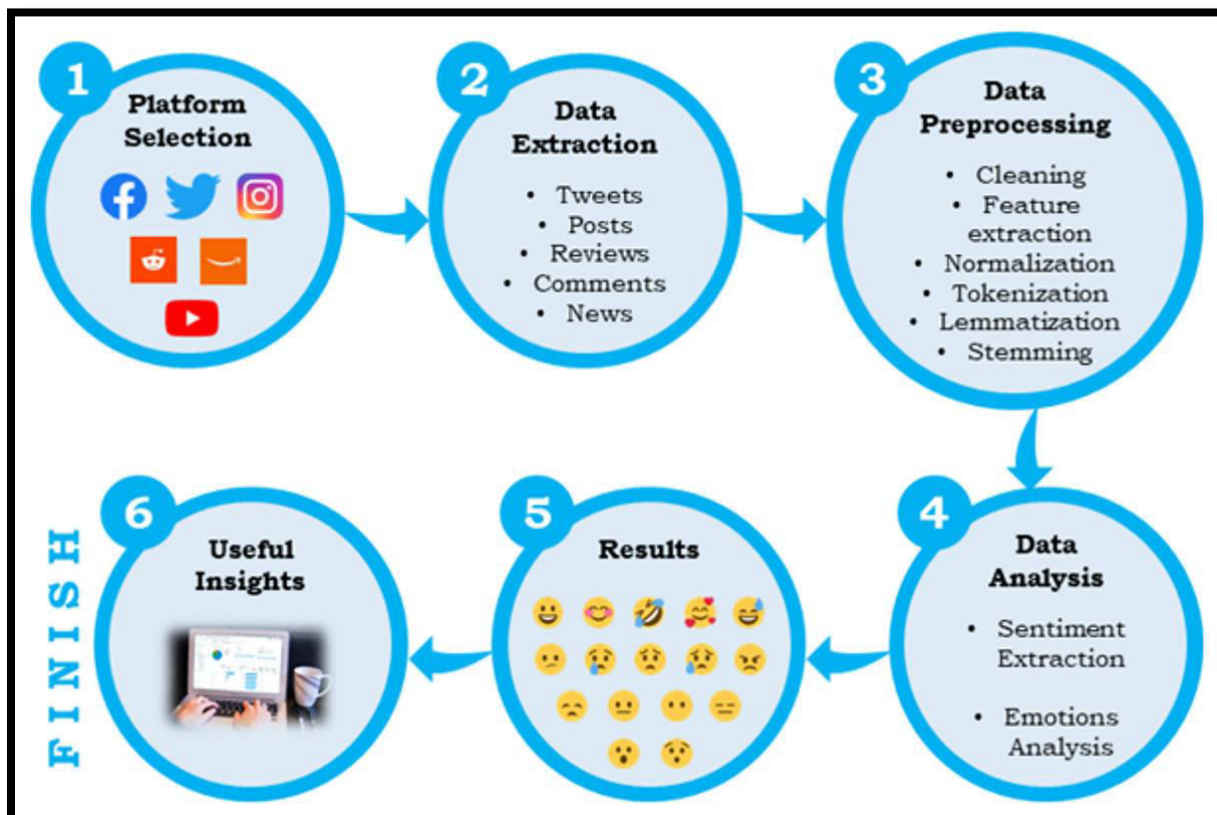


Fig.1 Life cycle of Sentiment analysis

**5. Evaluation:** The trained model is evaluated using metrics such as accuracy, precision, recall, and F1-score to assess its performance in classifying sentiment accurately.

### Code Implementation:

#1. Sentiment Distribution across Customer Reviews (Figure 1):

```
import matplotlib.pyplot as plt

# Sample data (replace with your actual data)
sentiment_labels = ['Positive', 'Negative', 'Neutral']
sentiment_counts = [100, 50, 75] # Number of reviews for each sentiment label

# Create a bar plot
plt.bar(sentiment_labels, sentiment_counts, color=['green', 'red', 'blue'])
plt.xlabel('Sentiment')
plt.ylabel('Number of Reviews')
plt.title('Sentiment Distribution across Customer Reviews')
plt.show()
```

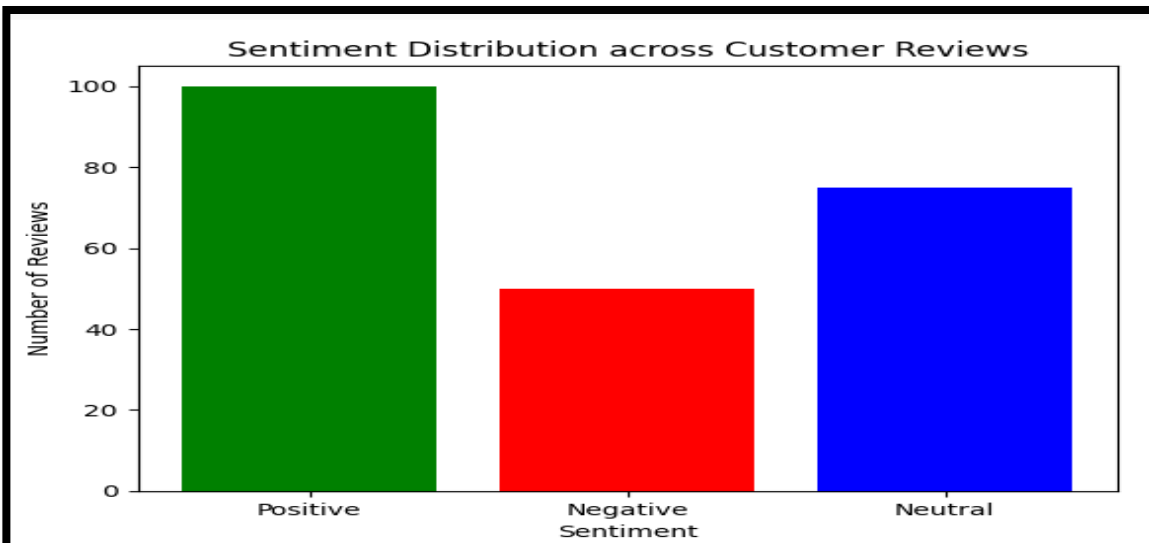


Fig.2 Sentiment Distribution across Customer Reviews

#2. Keyword Analysis: Most Frequent Terms in Positive and Negative Reviews (Figure 2):

```
from wordcloud import WordCloud
from wordcloud import WordCloud
```

```

# Sample data (replace with your actual online data)
positive_reviews_text = "This hotel was amazing. Great service and beautiful rooms."
negative_reviews_text = "Terrible experience. Rude staff and dirty rooms."

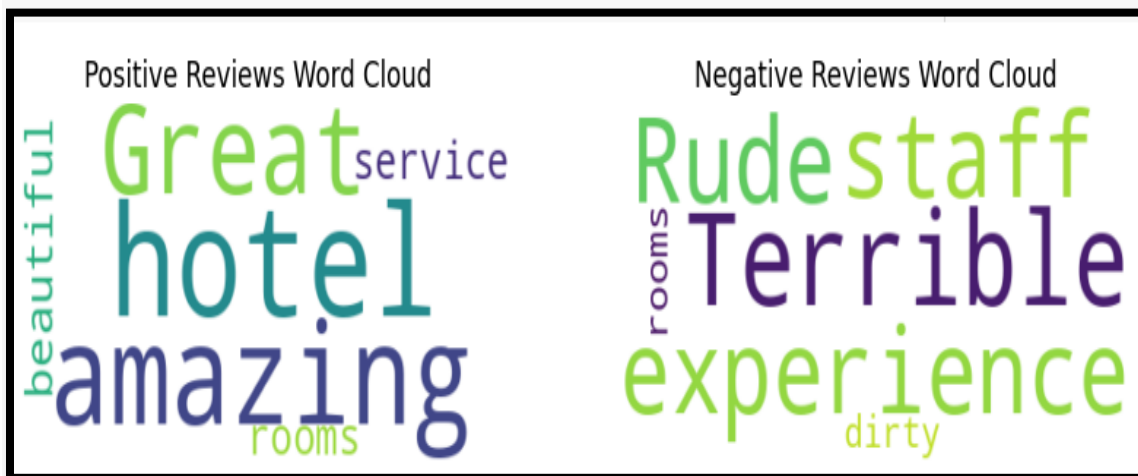
# Generate word clouds
wordcloud_positive = WordCloud(background_color='white').generate(positive_reviews_text)
wordcloud_negative = WordCloud(background_color='white').generate(negative_reviews_text)

# Plot word clouds
plt.figure(figsize=(10, 5))
plt.subplot(1, 2, 1)
plt.imshow(wordcloud_positive, interpolation='bilinear')
plt.title('Positive Reviews Word Cloud')
plt.axis('off')

plt.subplot(1, 2, 2)
plt.imshow(wordcloud_negative, interpolation='bilinear')
plt.title('Negative Reviews Word Cloud')
plt.axis('off')

plt.show()

```



**Fig.3** Keyword Analysis: Most Frequent Terms in Positive and Negative Reviews

#3. Temporal Analysis of Sentiment Trends Over Time (Figure 3):

```
# Sample data (replace with your actual online data)
```

```
dates = ['Jan', 'Feb', 'Mar', 'Apr', 'May'] # Sample months
```

```
sentiment_scores = [3.5, 3.8, 4.2, 4.0, 3.7] # Sample average sentiment scores for each month
```

```
# Create a line plot
```

```
plt.plot(dates, sentiment_scores, marker='o')
```

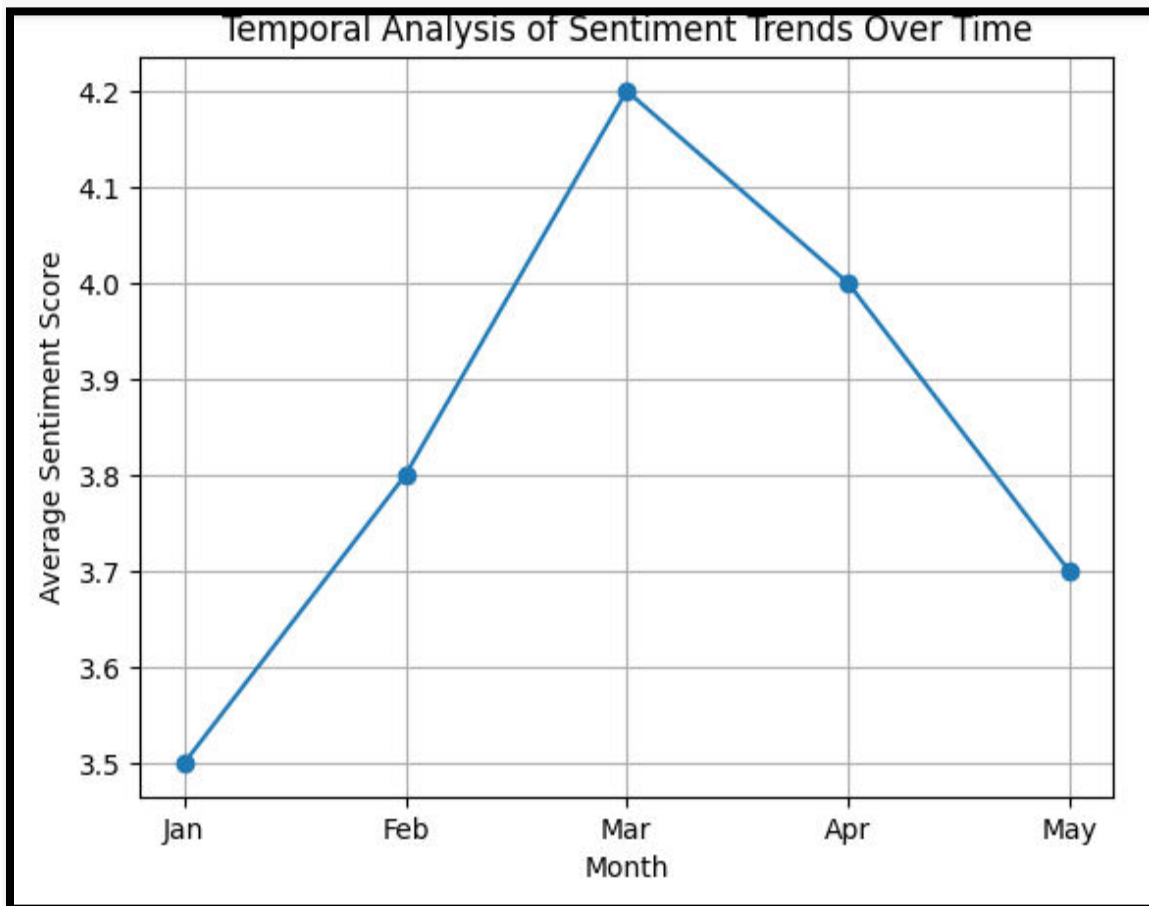
```
plt.xlabel('Month')
```

```
plt.ylabel('Average Sentiment Score')
```

```
plt.title('Temporal Analysis of Sentiment Trends Over Time')
```

```
plt.grid(True)
```

```
plt.show()
```



**Fig.4** Temporal Analysis of Sentiment Trends Over Time



#### #4. Location-Based Sentiment Analysis: Geographic Heatmap of Customer Sentiment (Figure 4):

```
import plotly.express as px

# Sample data (replace with your actual online data)
# Assume you have a DataFrame with columns 'Location', 'Latitude', 'Longitude', and 'Sentiment Score'
# Replace df with your actual online DataFrame
import pandas as pd

data = {
    'Location': ['New Delhi', 'Mumbai', 'Bengaluru'],
    'Latitude': [28.6139, 19.0760, 12.9716],
    'Longitude': [77.2090, 72.8777, 77.5946],
    'Sentiment Score': [4.5, 3.8, 4.2]}

df = pd.DataFrame(data)

# Create a scatter mapbox plot
fig = px.scatter_mapbox(df, lat="Latitude", lon="Longitude", color="Sentiment Score",
                        color_continuous_scale=px.colors.sequential.RdBu, size_max=15, zoom=3)
fig.update_layout(mapbox_style="open-street-map")
fig.update_layout(title='Location-Based Sentiment Analysis: Geographic Heatmap of
Customer Sentiment')

fig.show()
```

#### Location-Based Sentiment Analysis: Geographic Heatmap of Customer Sentiment



**Fig.5 Location Based Sentiment Analysis – Geographic Heatmap of Customer**

## Sentiment (New Delhi)

Location-Based Sentiment Analysis: Geographic Heatmap of Customer Sentiment



**Fig.6 Location Based Sentiment Analysis – Geographic Heatmap of Customer Sentiment (Mumbai)**

Location-Based Sentiment Analysis: Geographic Heatmap of Customer Sentiment



**Fig 7. Location Based Sentiment Analysis – Geographic Heatmap of Customer Sentiment (Bengaluru)**

## Results and Analysis:

➤ **Sentiment Distribution:** The analysis reveals the distribution of sentiment categories among customer reviews, indicating the proportion of positive, negative, and neutral sentiments expressed by customers.

- **Keyword Analysis:** Keyword extraction techniques are used to identify the most frequently mentioned words and phrases in positive and negative reviews. This provides insights into the aspects of the hotel experience that contribute to positive or negative sentiment.
- **Temporal Analysis:** Temporal analysis of sentiment trends over time allows for the identification of seasonal patterns, trends, and fluctuations in customer sentiment. This information can be used to optimize operations and marketing strategies accordingly.
- **Location-Based Analysis:** Sentiment analysis is performed at the location level to compare customer sentiments across different hotels and resorts. This helps identify high-performing locations and areas for improvement.
- **Sentiment Correlation:** Correlation analysis is conducted to examine the relationship between sentiment scores and other variables such as star ratings, hotel amenities, and customer demographics. This provides insights into factors influencing customer satisfaction and sentiment.

### **Discussion:**

The results of the sentiment analysis provide valuable insights into customer sentiment trends, preferences, and experiences in the hospitality industry. By leveraging sentiment analysis techniques, hotels and resorts can:

- ✓ Identify areas for improvement in service delivery, facilities, and amenities.
- ✓ Tailor marketing strategies and promotional campaigns to address customer preferences and concerns.
- ✓ Enhance reputation management and online presence by responding promptly to customer feedback and addressing negative sentiment.
- ✓ Improve overall customer satisfaction and loyalty, leading to increased revenue and business growth.

### **Conclusion:**

Sentiment analysis serves as a valuable tool for extracting insights from textual data in the hospitality industry. By analyzing customer reviews and feedback, hotels and resorts can gain valuable insights into customer sentiment trends, preferences, and experiences, enabling them to make data-driven decisions and enhance overall customer satisfaction. This case study highlights the potential benefits of implementing sentiment analysis in the hospitality industry and provides a framework for leveraging sentiment analysis techniques to drive business success.

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## **A Study on Responsible Behaviour of Companies towards Crisis Management for Business and long term Stakeholders Sustainability**

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### **Abstract**

Businesses face crisis due to business environment in which they operate. However, Crisis may end up in failures, if not managed appropriately by firms (Coombs, 2007) while it may act as an opportunity as long as business leaders perceive it in a right way (Brockner & James, 2008). Whether Business will drown down or float up, it all depends on level of competencies of companies to react and respond to crisis events in a responsible manner. Companies with Preventive measures and timely response to crisis can have the hurrah moments in company's annual balance sheets and reasons to smiles for its stakeholders. Therefore, company's Crisis Management Strategies decide the future of the business firms and its stakeholders.

This paper attempts to identify companies' responsible behaviour towards managing / responding Crisis events. Study covers the analysis of 50 sampled chemical / petrochemical and pharmaceutical industry operating in the state of Gujarat. Study tries to discover No of sampled companies that had faced any crisis situation before F. Y. 2019, types of crisis events faced, challenges and consequences confronted, types of stakeholders affected due to crisis situation. Study also attempts to explore relationship and differences in companies responsible behaviour towards managing / responding Crisis events across the various demographical variables of the study.

**Keywords:** - Crisis Response Management, Responsible Behaviour, Sustainability of Business & Society.

## 1.0 Introduction

Crisis Management as a field has gained momentum in recent years due to reoccurring of crisis events in an Organizational life. According to the Institute for Crisis Management, (2010) approx. 90,000 news accounts of business crisis in the U.S. alone were reported between 2000 and 2009. Crisis Management has emerged as a long standing issue in business management (Bundy et.al. 2016; Liu & Froese, 2020) and any ignorance or mismanagement in managing crisis may affect the sustainability of business in the long run in turn may affect societal sustainability (Sinha, 2011). Scholars tried to define Organizational Crisis in many ways, viz., Crandall & Mensah (2008) defined ‘Crisis’ as an unexpected event that has severe implications on environment, business and its stakeholders resulting in stress, requires intervention, and mandates proper planning to ensure survival and sustainability in business (Doern, 2014). In same line of context, Coombs (2006) also explained “Crisis events as acute in nature having negative consequences on stakeholders”.

Generally, crisis, though occasional, are caused through natural or man-made / technological events leaving devastating and spill over impact on business and society. According to Sawada et. al., (2011), natural events can be categorized into three subgroups - 1) hydro-meteorological events includes floods, storms, and droughts; 2) geophysical events includes earthquakes, tsunamis and volcanic eruptions; 3) biological disasters such as epidemics and insect infections. We have vividly experienced a chain of wrecking natural disaster events, unprecedented and uncontrollable in nature, leading to alarming crisis ending up in massive economic, environmental and human loss.

Crisis also results from Man-made or technological disasters often caused due to human error, unethical decisions or irresponsible business behaviour. Such events can be an outcome of 1). Industrial, nuclear or transport accidents resulting into chemical spills, fire, collapse of industrial infrastructure, radiation etc... e.g. Bhopal Union Carbide gas leakage plant incident,1984; Nuclear accident events like Ukarine Chernobyl in 1986 due to flawed reactor design and operated with inadequately trained personnel. 2). Unethical /Irresponsible behaviour pushed through greed, negligence or malfeasance ending up not only in collapse of the firm but also cascaded into global financial meltdown e.g. Enron Accounting fraud case, 2001; WorldCom Accounting case, 2002; Lehman Brothers Investment Bank, 2008; Satyam Scandal case, 2008; Volkswagen Diesel Gate, 2015. 3). Structural or Product failures ensuing in Market and Business losses e.g. Johnson and Johnson - Tylenol capsules poisoned with cyanide case; Toyota’s recall fiasco case in 2010 where company has recalled a total of 8.8 million vehicles for safety defects causing multiple deaths. All such events, catastrophic in nature, have huge potential to cost lives, impact livelihoods, endanger long-term wellbeing and cause environmental damage. Businesses around the world gets greatly affected as globalized supply chains have made firms even more exposed and vulnerable to disasters (Smith & Pettley, 2009).

Hence, above stated crisis events warrants an exploration of Crisis Management Strategies adopted by Business and Society. This is because such events end up into big turmoil leading to collapse of some businesses while some take long years to recover. Given the depth and breadth of losses that occurs due to crisis, there is therefore a strong “business case” for paying more attention to Crisis Management function as survival and sustainability of an organization is in peril. Therefore, this research paper studies responsible behaviour of Chemical / Petrochemical and Pharmaceutical companies (considered as hazardous plants in Gujarat) towards crisis situation so as to avoid the events of winding up giving rise to unsustainable business and society.

## **2.0 Crisis Management & Business Sustainability**

With the increase in number of Crisis events, the field of Crisis Management and Sustainability has gained importance. Though both have maintained separate research paths but both are closely linked; their goals are not mutually exclusive but complimenting each other (Crandell & Mensah, 2008). According to Pearson and Clair (1998), the field of crisis management seeks to minimize the occurrence of crisis events and mitigate the ones that do occur. Few authors (Simola, 2014; Coombs, 2014; Bundy et.al. 2016) emphasized Crisis Management as a process designed to prevent or lessen the damage that a crisis can impose on an organization and its stakeholders. Coombs (2012) presented three-stage Crisis Management model where first stage is Pre-stage that includes Signal Detection, Prevention and Crisis Preparation, second stage is Crisis itself that deals with crisis recognition and crisis containment and third stage is Post Crisis Stage in which Organization evaluates their response and impact of crisis with a focus to be prepared for potential crisis.

While there is huge literature established in the field of Crisis Management but very few authors (Crandell & Mensah, 2008; Coombs 2010; Taneja et.al. 2010; Barham, 2017) discuss its linkage with sustainability. Coombs, (2010) explains the connection between Sustainability and Crisis Management where stakeholders’ expectations remain as the binding thread. Crandell & Mensah, (2008) studied a framework for understanding crisis within the context of sustainable development emphasizing that any acute crisis event may restrict sustainable development in the long run for e.g. an oil spill crisis events in the past like BP Deepwater horizon case, 2010 has negatively affected sustainability of different environmental stakeholders like sea food industry.

## **2.1 Impact of Crisis on Business in General**

Crisis may be harmful for any type of business as they threaten business goals, erode trust, applies pressures on management by providing limited time to respond, and may even lead to failures (Hermann, 1963; Penrose, 2000; Lerbinger, 2012). New start-ups, small firms usually may be more vulnerable during crisis events due to limited resources, weak market position, low level of preparedness, lack of experiences in managing such crisis situation (Runyan, 2006; Herbane, 2013). Business firms may get exposed to different macro and micro economic shocks during crisis events. Such shocks are generally due to changes in demand, supply

chain, labour markets, and regulations etc...both at domestic or global level (Westergård-Nielsen & Neamtu, Discussion paper, June, 2012). Crisis events experienced in the past (Asian Financial Crisis, 1998; Global Financial Crisis, 2008) has apparently affected business and its stakeholders' activities. Depending on the severity of crisis and market situation, a firm may decide to go for inventory cuts, production cuts, cost cuts, salary cuts, job cuts, layoff or closing down certain production lines, if they find that their product demand curve is constantly going down and experiencing decline in sales (Westergård-Nielsen & Neamtu, Discussion paper, June, 2012). Thus, it is important that crisis has to be understood well and managed properly, if not may result into bankruptcy or permanently closing down of firms as experienced during Asian Financial crisis in 1997-98 or Global Financial Crisis in 2008-09. Each time when confronted with any crisis, firm needs to discover unique ways to react and respond to it.

### **3.1 Problem Statement**

This paper examines two aspects- 1). What types of crisis events and its consequences were faced by the firms during the study period (FY 2017 to 2019)? and 2) How responsible companies are in preventing and managing crisis so to avoid the events of winding up giving rise to unsustainable business and society.

### **3.2 Rationale of study**

Businesses are confronted with crisis now and then. In spite of increasing frequency of crisis in organizations, Crisis management has not received much attention by an Organization (Sinha, 2011). The Center for Crisis Management at the University of Southern California, confirms that only 5–25% of the Fortune 500 companies are prepared to face crisis while the remaining 75% are unprepared (Mitroff & Alpaslan, 2003; Sinha, 2011). This indicates alarming condition compelling companies to take measures that would provide them long term sustainability. Presently, many of the Business Leaders are grappling to find out ways and means to mitigate and respond to crisis events. Not all business leaders will experience the events at par with the same magnitude, but there is need to build capabilities to respond to such unusual threats (James et.al. 2011) to ensure sustainability.

### **3.3 Research Objectives**

The objective of the study is to analyze Responsible Behaviour of Chemical / Petrochemical and Pharmaceutical companies operating in the state of Gujarat towards Crisis Management for sustainable society and business. Study detects whether participating companies had faced any crisis in the past or in present (before F.Y. 2019), types of crisis faced, types of stakeholders directly or indirectly affected, immediate or long term consequences observed due to crisis, and response behaviour of the companies to manage crisis.

Further study also examines association and differences between various demographical variables and companies Responsible Behaviour towards Crisis Management. Demographical

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variables of the study were segregated into two Viz. Types of Industry (chemical/petrochemicals and pharmaceuticals), Sector Ownership (Government /Non-government), Legal status (Listed /Unlisted), Age of the firm (Age up to 25 years and Age more than 25 years), Size of the firm (medium /small sized and large sized), Revenue of the firm (avg. revenue up to 3000 crs and avg. revenue more than 3000crs), PAT of the firm (avg. PAT up to 100crs and avg. PAT more than 100crs), and Reserves of the firm (avg. reserves up to 1000crs and avg. reserves more than 1000crs)

### **3.4 Research Hypothesis**

Following hypotheses have been framed to empirically test the existence of various association and differences between dependent and independent variables.

H1: - There is significant association between various demographical variables of the study and Responsible Behaviour of companies towards Crisis Management

H2: -There are significant differences between various demographical variables of the study and Responsible Behaviour of companies towards Crisis Management

### **3.5 Methodology**

The research design used in the present study is descriptive as well as exploratory in nature. For data collection, stratification of organizations was established on the basis of BSE/NSE listed and unlisted companies. Further, sample size was determined by pooled data to do in-depth analysis where response was elicited from 58 companies operating in state of Gujarat specially from the Golden Corridor region (from Ahmedabad to Vapi), however, only 50 companies' data was found complete in all aspects. Thus, this study includes analysis of 50 companies.

To collect first-hand information, questionnaire tool was used and responses were elicited from Unit heads, Environment Health & Safety (EHS) heads, Production and HR head etc...belonging to Chemical, Petrochemical and Pharmaceutical Industries. However, secondary data was collected from various websites, company annual reports, government reports, books, journals and newspaper dailies. Appropriateness and strength of the instrument was examined on statistical parameters for reliability and validity before administering it.

### **4.1 Data composition**

Data pertaining to demographic characteristics of 50 sampled companies engaged in chemical, petrochemical and pharmaceutical businesses are shown as below (refer table 1).

**Table 1**  
**Demographic Distribution of sample companies**

	Types of Industry		Sector Ownership		Legal status		Age of the firm		Size of firm	
	Chemical/ Petrochem	Pharma	Govt.	Non- Govt.	Listed	Unlisted	Up to 25 yrs (New)	More than 25 yrs (Old)	Med / small	Larg e
f	36	14	06	44	25	25	07	43	10	40
%	72	28	12	88	50	50	14	86	20	80

**Table 2**  
**Financial Performance of sample companies**  
**(Amt. in Rs.)**

	Avg. Revenue of the firm		Avg. PAT of the firm		Avg. Reserves of the firm	
	Upto 3000 crs	More than 3000 crs	Upto 100 crs	More than 100 crs	Upto 1000 crs	More than 1000 crs
f	35	15	27	54	25	50
%	70	30	23	46	25	50

Study consists of total 50 companies (n=50) out of which 72% (n=36) belong to Chemicals/Petrochemicals sector and remaining 28% (n=14) belongs to pharmaceuticals sector. On the basis of sector ownership, 12% (n=6) companies were Government owned while remaining 88% (n=44) were Non – Government owned. Samples were equal in distribution on the basis of Legal status of the Companies i.e. 50% (n=25) Listed and 50% (n=25) Unlisted Companies. Further, 14% (n=7) of the sample companies have experience up to 25 years (considered as new companies) whereas 86% (n=43) of samples have more than 25 years of experience (considered as old companies) in managing these businesses. Based on size of the firm, study includes 80% (n=40) of sample companies as Large sized firms whereas remaining 20% (n=10) as Medium and small sized firms.

Table 2, shows financial performance of sampled companies for the study period i.e., three financial years viz. 2017, 2018 and 2019. Data revealed that 70% (n=35) had average revenue / sales up to 3000 crores, while 30% (n=15) had more than 3000 crores; 54% (n=27) had average PAT up to 100 crs while 46% (n=23) had average PAT more than 100 crores; 50% (n=25)

sampled companies had average Reserves up to 1000 crores while 50% (n=25) had average Reserves more than 1000 crores.

## 4.2 Analysis & Interpretations

Initially, Respondent companies were asked whether any crisis events were faced by them in the past or during the study period, types of crisis situations faced by them, types of stakeholders affected and immediate / long term consequences observed due to such Crisis events. Below Table no. 3, 4, 5 and 6 depicts the data of the same.

**Table 3**

**No. of companies that had faced Crisis events in past or are facing presently (n=50)**

No. of companies that had faced Crisis events	Frequency (n)	Percent (%)
No	29	58
Yes	21	42

After confirming no. of companies that faced crisis events, respondent companies were asked about the types of crisis faced by them. This question was asked to those companies (n=21) who had undergone or were facing crisis events.

**Table 4**

**Types of crisis events faced by the respondent companies (n=21)**

Types of crisis faced by the companies	Frequency (n)	Percent (%)
Financial crisis	13	62
Technological crisis	07	33
Malevolence crisis	01	05
Natural crisis through calamities	07	33
Crisis due to Deception	04	19
Crisis due to workplace violence	04	19

**Table 5**

**Immediate or long term consequences observed after crisis events by the respondent companies (n=21)**

Immediate or long term consequences	Frequency (n)	Percent (%)
Financial loss	14	66
Loss of reputation	06	29
Loss of Market share	05	24
Downfall in share price	02	10
Employee trauma	03	14
Closing of Units	01	05
Unemployment	02	10

**Table 6**

**Types of stakeholders got affected due to crisis events (n=21)**

Types of stakeholders got affected	Frequency (n)	Percent (%)
Primary stakeholders only	16	76
Both Primary and Secondary stakeholders	05	24

**Responsible Behaviour of Respondent companies towards Crisis Management practices**

Companies response towards their Crisis Management practices was elicited in the form of Likert rating scale (5 – Strongly agree to 1 - Strongly disagree) having 9 items.

**Table 7**

**Mean & SD on Companies Responsible Behaviour towards Crisis Management practices (n=50)**

Crisis Management scale	Mean	SD
Company has designed organization structure to prevent the occurrence and reduce the impact of crisis	4.12	0.872
Company is capable and has crisis response system to solve and grow from crisis	4.12	0.849

Company periodically checks through a mock drill to manage crisis situation	4.02	0.937
Pressures to meet stakeholders expectations encourages members to involve in unethical practices leading to crisis events (Reverse coding)	2.78	1.200
Roles and responsibilities of team and community liasoners are well defined and communicated	3.96	0.755
Company's crisis response strategies involves activation of functional communication and actions	3.94	0.740
Pre-designated signals and alerts are used to communicate the presence of a crisis	3.74	0.965
Company uses well defined process for assessing the severity of the incident and its impact on the community	4.00	0.990
Company follows well defined process for testing the effectiveness of response taken.	4.06	0.890

Mean & SD of individual items on a scale (other than item 4) was found between 3.74 to 4.12. Reverse coding has been done for item no.4 - Pressures to meet stakeholders' expectations encourages members to involve in unethical practices leading to crisis events. The mean of reverse coded item ( $\bar{x}$ =2.78,  $s$ =1.200) was found between agreement to moderate scale.

**Table 8**  
**Descriptive statistics (composite) & Normality test (n =50)**

Construct/ Component	No	Mean	Mdn	SD	Skewness		Kurtosis		$(\alpha)$	Norm- lity Shap- iro Test
					with SE (0.337)	Value	with SE (0.662)	Value		
Crisis Mgmt.	09	3.90	3.89	0.629	-1.115	-3.31	2.532	3.82	0.857	0.005

Table 8, shows that the scale was found reliable with Cronbach alpha ( $\alpha$ ) value 0.857 which means 85.7% internal consistency exist amongst items. The overall Mean, Median and SD value were found as  $\bar{x}$ =3.90 and Mdn = 3.89 with  $s$ =0.629. The value of skewness (-1.115) and the value of kurtosis (2.532) individually were not found within the range of +1. Critical ratio (z value) of both kurtosis (3.82) and skewness (-3.31) were also not found within the range of  $\pm 1.96$ , thus the outcome with respect to dispersion specifies that data were non-normally distributed. Similarly, Normality test conducted using Shapiro Wilk test confirms that data were

non-normally distributed, as test value ( $p = 0.005$ ) was less than significant value 0.05, rejecting null hypothesis.

Further Cross tab & chi-square test was conducted to know significant association between responsible behaviour of companies towards Crisis Management and various demographic variables

**Table 9**  
**Cross tabulations & chi-square test results (n=50)**

Demographic Variables	Responsible behaviour towards Crisis Mgmt.						Significance
	Low Agreement		High Agreement		Sample		
	Count(E. C)	%	Count(E. C)	%	Count	%	
<b>Types of Industry</b>							
Chemical/ Petrochemicals	08 (7.2)	22	28 (28.8)	78	36	10	$\chi^2_{(1)} = 0.397$ , $p = 0.704$ (ns), $\Phi = 0.089$ Fail to Reject H0
Pharmaceutical	02 (2.8)	14	12 (11.2)	86	14	10	
Total	10	20	40	80	50	10	
<b>Sector Ownership</b>							
Government	00 (1.2)	00	06 (4.8)	100	06	10	$\chi^2_{(1)} = 1.705$ , $p = 0.327$ (ns), $\Phi = 0.185$ Fail to Reject H0
Non-Government	10(8.8)	23	34 (35.2)	77	44	10	
Total	10	20	40	80	50	10	
<b>Legal status of the firm</b>							
Unlisted	07 (5.0)	28	18(20.0)	72	25	10	$\chi^2_{(1)} = 2.000$ , $p = 0.157$ (ns), $\Phi = 0.200$ Fail to Reject H0
Listed	03 (5.0)	12	22 (20.0)	88	25	10	
Total	10	20	40	80	50	10	
<b>Age / Experience of the firm</b>							
Up to 25 years	00 (1.4)	00	07 (5.6)	100	07	10	$\chi^2_{(1)} = 2.035$ , 0

More than 25 yrs.	10 (8.6)	23	13 (34.4)	77	43	10	p= 0.319 (ns),
						0	Phi = 0.202
Total	10	20	40	80	50	10	Fail to Reject H0
						0	
Size of the firm							
Medium / Small	03 (2.0)	30	07 (8.0)	70	10	10	$\chi^2_{(1)}=0.781,$
						0	p= 0.397 (ns)
Large	07 (8.0)	18	33 (32.0)	82	40	10	Phi = 0.125
						0	Fail to Reject H0
Total	10	20	40	80	50	10	
						0	
Avg. Revenue of the firm							
Up to 3000 cars	09 (7.0)	26	26 (28.0)	74	35	10	$\chi^2_{(1)} = 2.381,$
						0	p=0.246 (ns),
More than 3000cr	01 (3.0)	07	14 (12.0)	93	15	10	Phi = 0.218
						0	Fail to Reject H0
Total	10	20	40	80	50	10	
						0	
Avg. PAT of the firm							
Up to 100 crs	08 (5.4)	30	19 (21.6)	70	27	10	$\chi^2_{(1)} = 3.402,$
						0	p= 0.085(ns),
More than 100 crs	02 (4.6)	09	21 (18.4)	91	23	10	Phi = 0.261
						0	Fail to Reject H0
Total	10	20	40	80	50	10	
						0	
Avg. Reserves of the firm							
Up to 1000 crs	07 (5.0)	28	18 (20.0)	72	25	10	$\chi^2_{(1)} = 2.000,$
						0	p= 0.157 (ns),
More than 1000 crs	03 (5.0)	12	22 (20.0)	88	25	10	Phi = 0.200
						0	Fail to Reject H0
Total	10	20	40	80	50	10	
						0	

ns – non significant

## Mann Whitney U Test

As data was found non-normal, Mann-Whitney U test at 5%  $\alpha$  level was conducted to compare Responsible Behaviour of companies towards Crisis Response Management (DV) on the basis of various demographic variables of the study.

**Table 10**

**Mann-Whitney Test on Responsible Behaviour of companies towards Crisis Response Management: Grouping Variables**

Variables	Mann-Whitney U	Wilcoxon W	Z	r	Sig. (2-tailed)
Types of Industry	244.000	910.000	-0.173	0.024	0.862 (ns) Failed to Reject H0
Sector Ownership	61.500	1051.500	-2.111	0.299	0.035*, Reject H0
Legal status of firm	172.500	497.500	-2.724	0.385	0.006**, Reject H0
Age of the firm	148.500	176.500	-0.056	0.007	0.955 (ns) Failed to Reject H0
Size of the firm	146.000	201.000	-1.314	0.185	0.189 (ns) Failed to Reject H0
Avg. Revenue of firm	190.000	820.000	-1.539	0.217	0.452 (ns) Failed to Reject H0
Avg. PAT of the firm	161.000	539.000	-2.919	0.412	0.004**, Reject H0
Avg. Reserve of firm	172.500	497.500	-2.724	0.385	0.006**, Reject H0

ns- Not significant, \* $p < .05$ , \*\* $p < 0.01$

## 5.0 Findings of the study

Survey revealed that 42% of respondent companies had faced crisis events in the past. Majority of which faced financial crisis (62%), technological crisis (33%), and Natural crisis through calamities (33%), wherein primary stakeholders of business (76%), were greatly affected due to crisis events. Immediate or long term consequences due to crisis events were majorly found in the form of financial losses (66%), loss of reputation (29%) and loss of market share (24%). Further, Descriptive statistics shows that the mean of each items on Responsible Behaviour of companies towards Crisis Management scale was found between 3.74 (Pre-designated signals and alerts are used to communicate the presence of a crisis) to 4.12 (Companies has designed organization structure to prevent the occurrence and reduce the impact of crisis and Companies is capable and had good crisis response system to solve and grow from crisis events).



Reverse coded item (Pressures to meet stakeholders' expectations encourages members to involve in unethical practices leading to crisis events) was responded near to moderate level. The non-normally distributed scale on 'Corporate Responsible behaviour towards Crisis Management was found reliable having ( $\alpha$ ) value 0.857.

The high agreement on Responsible Behaviour of companies towards crisis management was found more in pharma companies (86%) than in chemical / petrochemical (78%); more in government companies (100%) than non-government companies (77%); more in listed companies (88%) than in unlisted (72%); more in new companies (100%) than in old companies (77%); more in large sized companies (82%) than medium / small sized companies (70%); high in companies earning avg. revenue more than 3000 crs (93%) than companies earning avg. revenue up to 3000 crs. (74%); high in companies earning avg. PAT more than 100 crs. (91%) than companies earning avg. PAT up to than 100 crs. (70%); high in companies having avg. reserves more than 1000 crs. (88%) than companies having avg. revenue up to 3000 crs (72%). No Significant association was observed between various demographical variables of the study and Responsible behaviour of companies towards crisis management however, significant differences were found between Sector Ownership, legal status, avg. PAT and avg. reserves of the firm and Responsible Behaviour of companies towards Crisis Management.

## **6.0 Conclusion of the Study**

Companies faced financial crisis the most followed by technological and natural crisis through calamities in equal percentage that led financial loses the most and loss of reputation and market share respectively leading to affecting primary stakeholders the most. Crisis in the companies were seen in profit, planet and people in that order. Companies' responsible behaviour to tackle crisis management shows highest attention towards financial risk management and calamities led crisis. They give less attention to communicating crisis situation to stakeholders.

All the companies gave high attention to crisis management system in place, however the difference between the companies was observed with respect industry, ownership, legal status, age and size of the company, companies earning avg. revenue up to 3000 crs or more than 3000 crs., companies earning avg. PAT up to 100 crs or more than 100 crs. and companies having avg. reserves up to 1000 crs or more than 1000 crs. Study concludes No Significant association between various demographical variables of the study and Responsible behaviour of companies towards crisis management however, significant differences were noted with respect to various factors like Sector Ownership, legal status, avg. PAT of the firm and avg. reserves of the firm.

## 7.0 Limitations and future research

The study is limited to only 50 respondent companies as not many companies participated due to the sensitivity of data and their hesitation to share information. Another limitations was from demographic point of view, since we have small sample size, the data were segregated only into two divisions. However, for an in-depth study, a large sample size can be taken for better division of companies. But this study will help firms to bring holistic framework which will guide them to survive in any type of crisis situation.

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## **The Role of AI in HEI's: Opportunities and Considerations**

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### **ABSTRACT**

Recently, Artificial Intelligence (AI) has arisen as a paradigm shifter in in several areas, including education Industry. AI embraces and revolutionizes the teaching & learning process, steering in an epoch of incomparable approachability and efficiency for edification across the country. As a zealous supporter in the unexploited prospective of the human mind and its significant capability for progression, I unswervingly recommend the incorporation of artificial intelligence (AI) with the education Industry. Implementation of AI as a combined instrument can lay the foundations for making edification reachable to everyone, endowing learners to utilize their intellectual skills and crack a perkier prospect for themselves. Ensuing are a few ways I trust AI can transform education.

Artificial intelligence (AI) is a wide axiom that incorporates machine learning, profound knowledge, and natural language dispensation. It is governed by potent computers and massive data that are handled by algorithms. AI is being employed to discourse concerns in a multiple sectors, including cyber security, medical management, farming, industries, Digital banking, and Cyber Crimes & attacks, as it continues to pervade humanity. AI is augmenting our capability to systematize iterative work, streamlining procedures, distinguishing and classifying metaphors, designs, and voice, make prophecies, and even take decisions by capitalizing computer system & using computational powers to process data and acquire efficiency.

Artificial intelligence (AI) has developed as a game-changer in many sectors, and its impact on higher education is inevitable. AI has numerous possibilities for augmenting the standard and approachability of education, with the capability to modernize managerial, training, and teaching & learning processes. Conversely, there are aspects that we need to consider to guarantee accountable and moral implementation of AI in education Industry.

**Keywords:** Artificial Intelligence, Education, Digital, HEIs, Chabots

### **Introduction:**

The drive of HEIs around the realm is to coach and educate students in innovative techniques of rational and critical thinking and to prepare these students to understand and get expertise required to shift to the corporate world. The latest developments in AI devour the prospective to reform almost all traits of our education system. This is particularly accurate for learners about to enter an AI driven Industry. There are a many of prospects for expending AI in education, but also there are a many of problems concerned with integrity, data safety, and confidentiality, fairness, teacher training and willingness, and infrastructural precincts. We should recognize the significance of proficiency, progress and empirical wisdom to concoct students for the corporate world. AI-driven online platforms and tools offer students with access to courses that emphasis on professional development.

### **Opportunities:**

- AI is laying foundation for additional ingress, and backing for students, professors, and admins in HEIs by: rapid and rigorous data analysis, Smarter and more supportive computer-generated Chabot's and support. Recognizing and averting plagiarism and deception.
- AI proposes an exclusive prospect for professors to encourage creativeness and innovation. By integrating AI-fuelled tools in jobs demanding thinking and idea generation, professors can encourage pupils to contemplate analytically and ingeniously and generate excellent course outcomes.
- AI can revolutionize education system to the different level by providing students with the required expertise for the future. As AI can foresee upcoming high-demand expertise, facilitating colleges to adapt their program consequently and confirm that students are prepared to be successful in the corporate world.
- Also in the area research, AI can play a transformational role. AI's provides proficiency in pattern recognition, predictive analytics, and data processing permits for the quick detection and finding a solution of intricate research problem, thus enhancing the quality of research work with speed. AI's key advantage originates from faster data analysis, allowing researchers to work with huge data with extra proficiently.
- Another way of expending AI in colleges is through chatbots. These chatbots gives modified and interactive learning involvements to students, providing 24/7 backing while

refining approachability. By engendering exclusive discussions with each student, AI-fuelled Chabot's can support professors manage many students at a time.

- From students developing innovative technical expertise to professors enlightening future innovators & researchers pursuing revolutionizing scientific discoveries, AI is rapidly becoming predominant in HEIs and functional in novel and embryonic means.
- Fast-tracking AI-Fuelled Scientific Research- AI is developing as a feasible answer to significantly quicken the research procedure, saving researcher's time, dropping costs for colleges, and eventually fetching the impression of faster innovative research outcomes.
- AI can assist in Tailored Culture for education practices grounded on individual requirements. A study found that 93% of educators trust that AI has the power to augment student outcomes over tailored erudition systems.
- No one likes lengthy and time consuming documentation and paperwork which is an integral part of any education system. AI pounces in as the clerical champion, powering and automating repetitive chores and freeing up valued time for professors. In fact, a report suggested that AI can help professors save up to 30% of their time and assist in proficient administrative tasks
- Learning knows no limitations, and neither does AI. AI can aid bridge the gap in global edification, enabling excellent and quality education more reachable globally to students.

### **Considerations:**

- One of the important considerations in using AI in HEIs is to disparagingly contemplate the ethical consequences of it. By taking steps to guarantee impartiality, transparency, secrecy, security, inaccuracy, reliability, and lasting effects, AI can be deliberately shaped to support ethics and principles.
- The incorporation of AI into HEIs presents instructive challenges that necessitate considerable deliberation and premeditated application to confirm effective learning results.
- HEIs should confirm transparency in how AI structures are used and what results they make. This transparency will nurture trust and culpability amongst stakeholders.
- AI structures must be used as tools to counterpart and backing human decision, not substitute it. Professors should preserve oversight of AI-fuelled results and arbitrate as and when needed.
- AI must not substitute the treasured human interface and mentorship that are indispensable for holistic progress of students.
- Excessive reliance on AI can shrink prospects for students to improve critical thinking skills, which are vital for lifelong wisdom and triumph.
- The efficacious employment of AI in HEIs entails Budgetary Planning, Cost considerations, Technological Infrastructure Upgrades, and continuous backing from educationalists and admin staff.

**Learning Outcomes:**

All kinds of AI, such as machine learning, generative AI, and computer vision are promptly fetching predominant capacities of HEIs nowadays. These tools assist and advance teaching and learning process, generate greater instructive understandings, rationalize procedures, and quicken scientific research. Defining the correct expertise desirable to backup these novel and stimulating AI-fuelled projects & research throughout the campus can be thought-provoking for IT experts. For example an IT company can provide assistance in AI in HEIs and can help institutes find the exact mixture of AI tools desirable for triumph. The requirement for graduates with AI expertise is predictable to speedily breed in couple of years. A 2023 survey of educationalists and IT experts found that more than 70% percent interviewees detected growing requirement for candidates with AI skills. Henceforth there has been a companywide change to generate additional AI contributions to boost current syllabi, & upsurge the complete approachability of the AI training in a broader diversity of graduates.

**Conclusion:**

The application of AI to HEIs has exhilarating potential for enlightening managerial, training, and education procedures. Few instances of the probable benefits comprise tailored erudition, intellectual training, data analytics, and streamlined administrative processes. Nevertheless, ethical, principled and moral considerations, inspiring human-machine association, assuring fairness and approachability, and embracing a philosophy of unceasing culture of learning are all essential for accountable AI application. HEIs might practice AI powered tools ensuring to advance edification and give students more power in the digital epoch by implementing it with purpose and mindfulness consciousness. The incorporation of AI in HEIs signifies a change headed for a more comprehensive, tailored, and competent education system. By connecting the supremacy of AI, we can upraise learning to innovative altitudes, guaranteeing that every student has the prospect to achieve their full potential. With accountable employment, AI's unified synthesis with education promises a positive, more favourable future for students through the country.

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**Study the use of TouchKatalog® - A modern retail technology,  
in Men's ethnic wear physical stores and its impact on the  
consumer's buying decision process.**

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**ABSTRACT**

In today's digital era, the e-tailer (ecommerce retailer) mammoths like amazon, flipkart, etc. are clocking huge revenue in the ecommerce market in India; still majority of the shopping is done in physical retail stores. The pure play physical retails stores are still the soul of Indian Retail economy and they need to be adapting to Modern Retail which is blend of virtual and physical experience. This study investigates the utilization of TouchKatalog® - a modern retail technology in Men's ethnic wear physical stores and its influence on the consumer's buying decision process. With the rise of technology in retail, including interactive displays and mobile payment options, traditional physical stores are evolving to enhance the overall shopping experience. However, the specific effect of TouchKatalog® on consumer behavior within the context of men's ethnic wear physical retailing remains unexplored.

The research will have quantitative techniques to gather comprehensive insights. Quantitative surveys conducted among a diverse sample of consumers measure their purchasing behaviors influenced by intervention of TouchKatalog®.

The study explores how TouchKatalog® influence various stages of the consumer's buying decision process, including information search, evaluation of alternatives and purchase intention. The findings of this research will contribute to both academic literature and practical insights for ethnic wear retailers. By understanding the role TouchKatalog® - a modern retail technology in shaping consumer buying decisions, physical retailers can tailor their strategies to better meet the evolving needs and preferences of their target audience.



**Key words –**

TouchKatalog, Modern Retail, Physical store, Consumer buying decision, Ethnic Wear

**INTRODUCTION-**

(Rigby, 2011b) published the article in HBR stating the Store of the future would be the combination of Digital capabilities along with the Physical capabilities of the existing traditional physical stores. He also published a chart on How Fast Is Your Industry Moving Online and mentioned if the score is between 30 and 35, digital capabilities should be a strategic priority for the industry. The apparel industry's score was 34 and hence definitely needed modern retail technologies for their sustenance.

	BOOKS	APPAREL AND ACCESSORIES	GROCERIES
<b>PRICE</b>			
PRICES OFTEN LOWER ONLINE (DELIVERED)	5	3	1
DIGITIZED PRODUCTS CREATE LOWER COSTS	5	1	1
VALUE OF PRICE COMPARISONS	5	3	2
<b>SELECTION</b>			
VALUE OF BROAD ASSORTMENTS	5	4	3
VALUE OF CUSTOMIZATION	2	3	1
SEARCHES IN STORES OFTEN FUTILE	4	3	2
<b>CONVENIENCE</b>			
RESEARCH AND INFORMATION INTENSITY	5	3	2
WEB TOOLS TRUMP STORE EXPERIENCE	4	2	2
EASE OF DELIVERY AND RETURNS	5	3	1
<b>TRUST</b>			
RELIABILITY OF PRODUCT DESCRIPTIONS	5	2	2
FRUSTRATION IN STORES	4	4	2
TRUST IN ONLINE RETAILERS	5	3	1
<b>TOTAL</b>	<b>54</b>	<b>34</b>	<b>20</b>

(Rigby, 2011a)

According to (Rigby, 2011b) The Traditional Brick and mortar store's problem are

- The stores don't have rich product information.
- There is no easy comparison of products
- The salesman works on commission basis to sell more
- The overall shopping is very time consuming.
- The customer is not fully satisfied.

(Rigby, 2011b) The Traditional physical stores should evolve themselves to Modern Retail stores – which can only satisfy customers who want everything. They want the advantages of digital (virtual) - such as nearly unlimited selection, price transparency at the tick of a mouse, and tailored recommendations from specialists. They also want the advantages of physical stores- such as face-to-face interaction with store personnel, products available for trying on or trying out, and the social experience of shopping as an event. Different customers will value parts of the shopping experience differently, but all are likely to want perfect integration of the digital and the physical.

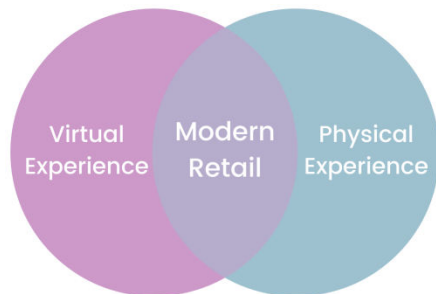
In short, Modern Retail is a blend of Virtual experience and Physical experience!

Advantages of Virtual Experience (Rigby, 2011b) are

- a. Rich product information
- b. Broadest selection
- c. Price comparison and special deals
- d. Convenience of anything, anytime, anywhere access
- e.

Advantages of Physical Experience (Rigby, 2011b) are

- a. Edited assortment
- b. Shopping as an event and an experience
- c. Ability to test, try on, or experience products
- d. Personal help from caring associates
- e. Instant access to products
- f. Instant gratification of all senses



(Zawar, 2014)

## **OBJECTIVES OF THE STUDY**

The objective of this research is to determine how TouchKatalog® - A modern retail technology impacts on consumer decision making

## REVIEW OF LITERATURE

(Rigby et al., 2012) recommends that successful retailers will be those who ‘find ways to delight shoppers both in store and online.’ The main purpose of incorporating digital technologies in stores is to relate better to consumers, not to just bombard the senses (Srinivasan & Srivastava, 2010). According to (Dittman et al., 2017) Retail Next, 94% of retail sales are still occurring at brick-and-mortar stores and not over the internet. Ron Johnson (Morse & Johnson, 2011) – the father of Apple Retail stores also pointed out in an interview that traditional retailers need to adapt to modern retail strategy which is a blend of digital and physical experience. The father of modern marketing Philip Kotler (Kotler, 2017) in his article mentioned that in order to survive, the traditional physical stores have to make stores interesting to visit by making them as showrooms and not just another physical store. (Adhi et al., 2019) published that Physical Retail stores have a real future and to achieve that the Technology could give them significant enhancement by mapping the evolving consumer journey to reshape the shopping experience. According to (Aubrey & Judge, 2012) Modern retailing is about ‘nurturing a symbiotic relationship between digital and physical channels so that they work together side-by-side, supporting each other’ (Aubrey & Judge, 2012) claim innovative technology enables retailers to enhance product information, increase consumer engagement and enhance customer experience. (Schmitt & Zarantonello, 2013) cite a need to research ‘the process by which specific cues in experiential touch-points create specific consumer experiences, and the process by which experiences impact consumer behavior.’ One of the big questions is how technology affects customer experience in the retail domain (Verhoef et al., 2009).

TouchKatalog® (RevolutionTeX Solutions Pvt Ltd, 2016) is an interactive in-store technology (Bodhani, 2012) where a customer can browse all the products present into the store on a life-size touchscreen. (Aubrey & Judge, 2012) It shows all information related to the products and (Burdett et al., 2013) helps in comparison of the products. Once the customer makes a wish list of the products he wants to try out physically (Aubrey & Judge, 2012), he calls for an assistance to get those products in trial room and after trying out the products physically they make a final decision to purchase the product.

## METHODOLOGY

**Research design** – Descriptive research

**Sample** –

- a. A random convenient sampling was used
- b. The sample populations of this study were the male shoppers over the age of 18 who visited a Men’s Ethnic Wear shop in Mumbai.
- c. Since the number of visitors visiting this store would be a finite and hence according to (Krejcie & Morgan, 1970), for a finite population of 10,00,000, the sample size should be 384.
- d. The total shoppers responded were 400 over a period of 50 days.

## Data collection –

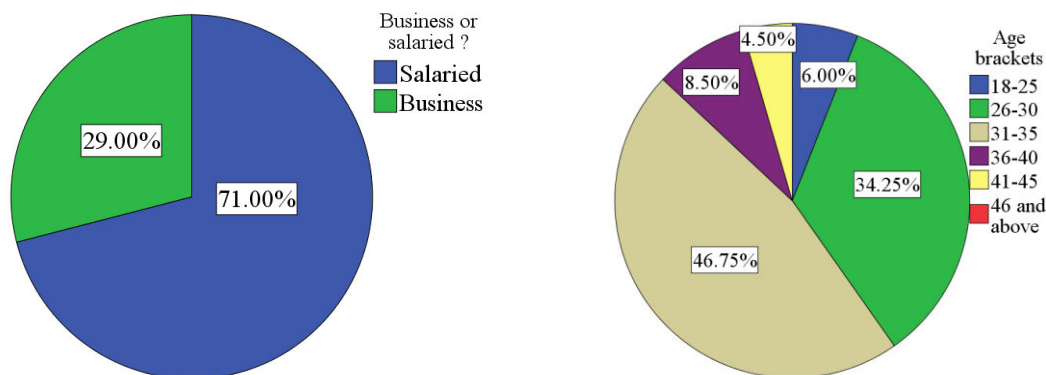
The shopper firstly used TouchKatalog® to browse the products present into the store and the products in their wish list were given to them for trying out in the trials rooms. After they made a final decision for the purchase and their shopping was complete, our analyst interviewed the shoppers and gathered data in the Microsoft Forms on a tablet.

## Questionnaire -

All respondents were asked the same set of questions (Dabholkar et al., 2003) after they were done shopping in the store with the help of TouchKatalog®.

## ANALYSIS

### 1. Shoppers types and their demographics



- 71% of the total shoppers are salaried and 29% are business owners
- The majority of the shoppers – 46.75% are from the age bracket 31 to 35, followed by 34.25% who are between 26 to 30 years of age.

### 2. Purpose of TouchKatalog

Purpose of using TouchKatalog	Frequency	Percent	Valid Percent	Cumulative Percent
Checking price	168	42.0	42.0	42.0
Comparing products	129	32.3	32.3	74.3
Product information	103	25.8	25.8	100.0
Total	400	100.0	100.0	

42% of the shoppers used TouchKatalog for checking price of the products followed by 32.3% for comparing products and rest used it to get the product information

### 3. Cross tabulation of purpose of using TouchKatalog and shoppers types

Purpose of TouchKatalog	Occupation		Total
	Salaried	Business	
Checking price	52	116	168
Comparing products	129	0	129
Product information	103	0	103
	284	116	400

Price point is the important purpose for shoppers who are businessman and for salaried product comparison is important followed by information of it.

### 4. Cross tabulation of age group and purpose

Age Group	Main usage of TouchKatalog			Total
	Checking price	Comparing products	Product information	
18-25	5	0	19	24
26-30	5	52	80	137
31-35	108	77	2	187
36-40	32	0	2	34
41-45	18	0	0	18
	168	129	103	400

108 shoppers from age 31 to 35 are having price point as important while product information is priority for 80 shoppers of the age group 26 to 30

### 5. Comparison of means

Statement	Mean		
	Salaried	Business	Total
TouchKatalog helped me comparing products and their prices	5.00	4.59	4.88
TouchKatalog helped me finding right products in store	3.86	4.72	4.11
TouchKatalog provided me useful information about the products	3.69	4.59	3.96

TouchKatalog helped me filtering products based on my taste and budget	4.00	4.34	4.10
TouchKatalog helped me create product wish list for physical trial	3.65	4.87	4.01
TouchKatalog helped to purchase a product	5.00	4.50	4.86
Satisfied with my purchase after using TouchKatalog	5.00	4.90	4.97

The shoppers who own business have relatively higher mean towards usage of TouchKatalog for finding right product, getting right information, filtration and wish list as compared to those who are salaried.

### Analyzing The impact of TouchKatalog® - a modern retail technology on consumer's buying decision process.

Customer satisfaction is connected to the customer's experiences (Pantano & Di Pietro, 2012) all the way through the consumer's buying decision process. To measure the impact of TouchKatalog® technology on the consumer's buying decision process (Verhoef et al., 2009), customers were asked to specify the level of their agreement with a statement about the buying decision making process with response stages shown in Table. We ran Descriptive Statistics in excel with 95% Confidence level.

Step	Statement	Mean
1. Information search	TouchKatalog helped me finding right products in store	4.110
	TouchKatalog provided me useful information about the products	3.955
	TouchKatalog helped me filtering products based on my taste and budget	4.100
	TouchKatalog helped me comparing products and their prices	4.883
2. Evaluation of alternatives	TouchKatalog helped me create product wish list for physical trial	4.005
3. Purchase decision	TouchKatalog helped to purchase a product	4.855
4. Post Purchase	Satisfied with my purchase after using TouchKatalog	4.970

Looking at the calculated mean values of each statement we conclude (Pantano & Di Pietro, 2012) that the results confirm that TouchKatalog® technology can support customers in their

buying decision process. It helps to a great extent in terms of finding right product easily and getting information.

## **FINDINGS**

In general, Men's Ethnic wear customers who have used TouchKatalog®, found it beneficial. TouchKatalog® technology supports Ethnic wear customers in decision-making, especially in search, comparison, filtration and evaluating alternatives. Moreover, the customers were able to make a purchase decision and were satisfied with it. It helps customers' overall satisfaction of the purchase. TouchKatalog® should be used widely in Men's Ethnic wear stores.

While this study provides useful findings, because the sample was limited to only Men customers in Mumbai, similar research should be carried out in other cities. Furthermore, this research is limited to the only Men's apparel and further studies could include Women's apparel and other markets like shoes, electronics, etc.

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# **A Study of Best Practices for Reducing Food Waste in the Indian FSC: A Sustainable Approach**

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## **Abstract:**

India produces large quantities of pulses, grains, milk, fruits and vegetables, fish and meat. But according to FAO estimates, nearly 40% of the food produced in India is lost or wasted. This shows lack of the management in the FSC. Due to the perishable nature of the fresh fruits and vegetables, reduce post-harvest losses and keep produce fresh till it reaches consumers are the main challenges. Food wastage in India's FSC is a significant issue ranging from economic losses to environmental degradation. There is an urgent need to identify the causes of FLW along the FSC network and corrective/preventive solutions to reduce FLW. This paper aims to study into the best practices for reducing food wastage across various stages from initial harvest through distribution to the consumer. Through comprehensive approach of existing strategies, technologies, and policies, this paper highlights recommendations to have a more sustainable and efficient food system in India.

**Keywords:** Food wastage, FLW, FSC, Waste reduction, Sustainable

## **1. Introduction**

### **1.1 Overview of Food Waste in India:**

India, with its huge population and diverse agricultural landscape, faces many challenge concerning food wastage. According to estimates by the Food and Agriculture Organization (FAO) of the United Nations, India wastes approximately 40% of its food production annually. This wastage occurs across the entire FSC, from farm to fork. The economic, social, and environmental losses of this wastage are more. There is an urgency of implementing effective measures to address the issue.

### **1.2 Importance of Reducing Food Waste:**

Reducing food wastage is crucial for several reasons. It represents a significant loss of resources, water, energy, labour etc. resulting in financial losses for farmers, businesses, and the

economy as a whole. Also from an environmental perspective, food wastage contributes to greenhouse gas emissions, water scarcity, various challenges of climate change and environmental degradation.

### **1.3 Scope and Objectives:**

This paper aims to study the best practices for reducing food wastage in the FSC of India. By studying the various stages of the FSC, identifying key causes of wastage, initiatives and strategies to reduce wastage, this report seeks to provide recommendations for stakeholders.

## **2. Research Methodology**

- a) Research Design: Exploratory
- b) Sources of Data: Secondary data
- c) Journals and magazines, Reports, Books, Press releases, Research papers, Presentations, Information on websites
- d) Types of Data: Qualitative

## **3. Review of Literature**

This literature review aims to provide a broad overview of the existing research on food wastage in the FSC of India and focusing on key factors contributing to wastage, Several studies have identified various factors contributing to food wastage across different stages of the FSC in India.(FAO (2011))

India produces large quantities of pulses, oilseeds, sugarcane, milk, poultry, meat and fish. Reducing FLW is important for India, as the country is facing some major issues like hunger, malnutrition and poverty. Any food saved through FLW will have direct impact on reducing hunger, malnutrition, poverty and the pressure on natural resources. Pre- harvest losses do not come under FLW, but these losses (due to weeds, insect pests, various diseases etc.) play major role in post-harvest qualitative and quantitative food losses.(Paul, 2012)

Storage and transportation are the most important causes of post-harvest losses for all types of food in India. Around 30-40% of fruits and vegetables are lost due to non-availability of cold storage facilities, transportation in open and unrefrigerated trucks, manual loading and unloading activities, rough handling of products.(NAAS (2019))

The literature underscores the importance of multi-stakeholder collaboration in addressing food wastage effectively. Government schemes and policies aimed at incentivizing investments in cold chain infrastructure and value addition are outlined in MOFPI report.(MINISTRY OF FOOD PROCESSING INDUSTRIES,2019).In conclusion, the literature review provides valuable insights into the complex issue of food wastage in the FSC of India. By understanding the key factors contributing to wastage, exploring strategies for mitigation, and recognizing the roles of various stakeholders, policymakers, businesses, and society can work together to create a

more sustainable and efficient food system that minimizes wastage, enhances food security, and mitigates environmental impact.

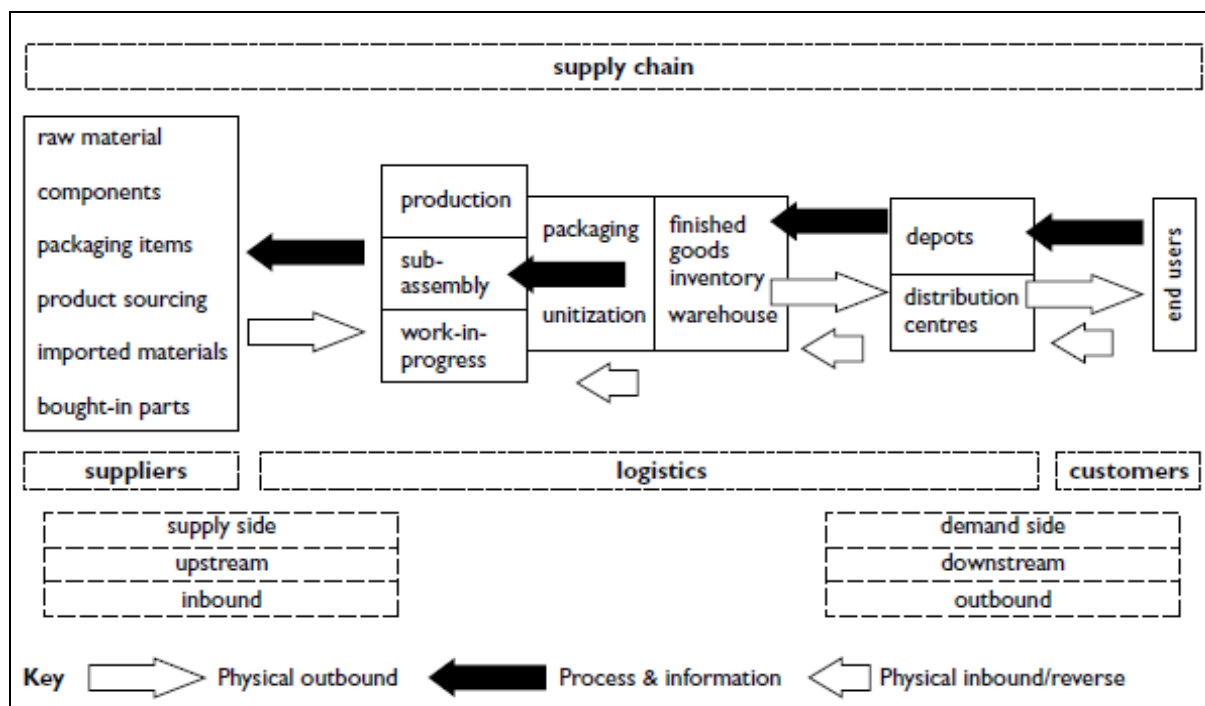
## 4. Understanding the FSC

### 4.1 Concepts of Supply Chain, Logistics and Distribution:(Rushton, Croucher, & Baker)

Figure 1: The Supply Chain Flow

(Source: The Handbook of Logistics and Distribution Management by Rushton, Croucher, Baker, 6<sup>th</sup> Edition, 2017)

The supply chain covers the broader area, from the supply of raw materials to the delivery



of products to the final customer.

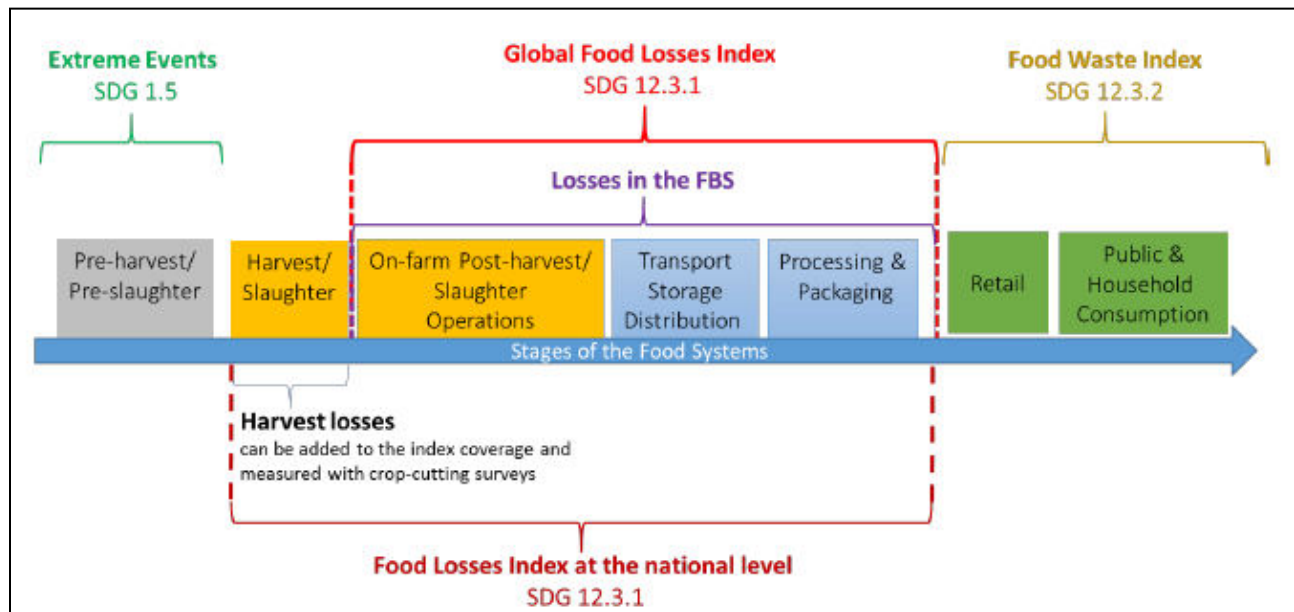
**Supply Chain = Suppliers + Logistics + Customer**

Whereas Logistics can be defined as follows:

**Logistics = Materials Management + Distribution**

The FSC consists of the following segments: (i) pre-harvest / pre-slaughter (ii) harvest/ slaughter/catch (iii) post-harvest/slaughter/catch operations (iv) transport, storage and distribution (v) processing and packaging (vi) retail and (vii) consumption by households and food services.

Figure 2: The FSC



(Source: FAO, 2018)

## 4.2 The FSC in India

### 4.2.1 Production and Harvesting:

The first stage of the FSC involves agricultural production and harvesting. In India, agriculture is dominated by small farmers who often lack access to modern farming practices, technology, and infrastructure. This results in inefficiencies in production and harvesting, leading to losses due to factors such as pests, diseases, weather fluctuations, and inadequate storage facilities.

### 4.2.2 Processing and Packaging:

Following harvesting, agricultural produce undergoes processing and packaging before entering the market. However, outdated processing techniques, inadequate infrastructure, and limited access to cold storage facilities contribute to significant losses during this stage.

### 4.2.3 Distribution and Logistics:

The distribution and logistics phase of the supply chain involves transporting food from production centres to consumers. In India, inadequate transportation infrastructure, lack of cold storage often results in spoilage and wastage during transit.

### 4.2.4 Retail and Consumer Consumption:

At the retail level, food wastage occurs due to factors such as overstocking, improper storage, and aesthetic standards imposed by retailers. Consumer behaviour also contribute significantly to food wastage

#### **4.2.5 Post-Consumer Waste Management:**

Even after reaching consumers, food wastage continues to be a significant concern. Inadequate waste management systems, including lack of segregation, composting, and recycling facilities, result in environmental degradation and climate change.

### **5. Causes of Food Wastage in the Indian FSC**

Several factors contribute to food wastage across the supply chain. Understanding the root causes of food wastage is essential to address the issue effectively.(Gabriel, 2022)

#### **5.1 Infrastructure, Storage and Transportation Constraints:**

Inadequate infrastructure, insufficient and inefficient cold storage facilities (poor storage conditions, temperature fluctuations during cold storage). The government has invested into lot of facilities like storage and cold chain systems but much greater push is required. Lack of access to proper storage facilities results in spoilage and deterioration of perishable goods, particularly fruits and vegetables, leading to substantial losses for farmers and distributors.

#### **5.2 Inefficient Supply Chain Management:**

The lack of communication and coordination among various stakeholders in the supply chain leads to inefficiencies. Improper selection of channel intermediaries, delay in delivery or improper delivery may cause higher losses of perishable produce.

#### **5.3 Weak logistic approach**

Forecasting, material planning and inventory activities are interconnected. Inefficient logistic system leads to more losses especially in case of over production of perishable produce.

- a) Poor forecasting
- b) Lack of material planning
- c) Poor inventory
- d) Lack of IT systems

Lack of IT systems may delay in material movement. It also affects the movement of return back material which leads to more losses for perishable produce.

#### **5.4 Consumer Behaviour:**

Consumer behaviours such as over-purchasing, preferences for aesthetically pleasing produce, improper storage, and reluctance to consume leftovers contribute to significant levels of

food wastage.

### **5.5 Policy and Regulatory Gaps:**

Inadequate policy frameworks and regulatory mechanisms further aggravate food wastage. Limited investment in agricultural infrastructure, lack of incentives for adopting sustainable practices, and weak enforcement of food safety standards contribute to inefficiencies and wastage across the supply chain.

## **6. Best Practices for Reducing Food Wastage**

Addressing food wastage requires a holistic approach involving interventions at different stages of the FSC. Several best practices and strategies have emerged globally and within India to reduce food wastage effectively:(Gabriel, 2022)

### **6.1 Improved Harvesting and Storage Techniques:**

Investing in modern farming practices can minimize post-harvest losses. Promoting the adoption of proper storage techniques, drying technologies can extend the shelf life of perishable goods and reduce spoilage.

### **6.2 Enhanced Supply Chain Management:**

Improving coordination, communication and collaboration among stakeholders in the supply chain is essential for minimizing wastage. Implementing technologies and data analytics can enable real-time monitoring of inventory, demand forecasting, and optimization of transportation routes, thereby reducing inefficiencies and losses.

### **6.3 Adoption of Technology and Innovation:**

Innovations such as solar-powered cold storage units, the application of digital technology empower farmers, traders to make informed decisions, optimize resource utilization, and minimize wastage throughout the supply chain.

### **6.4 Consumer Awareness:**

Raising awareness among consumers through educational campaigns (planning your meals / portion control), proper storage techniques and community engagement programs like food banks can empower consumers to make responsible choices, minimize over-purchasing, and utilize leftovers effectively.

### **6.5 Policy Interventions and Regulatory Frameworks:**

Government intervention through policy reforms, incentives, and regulations is essential for creating an enabling environment for waste reduction. Measures such as subsidies for cold

storage infrastructure, tax incentives for adopting sustainable practices, and stringent enforcement of food safety standards can help stakeholders to minimize wastage and adopt more sustainable practices. The "Pradhan Mantri Kisan SAMPADA Yojana" aims to modernize the food processing sector. (MOFPI, 2017)The "Kisan Rail" initiative launched by the Indian Railways provides dedicated refrigerated train services for transporting perishable goods, facilitating faster and cost-effective transportation of produce from farm to market.(Railway-Ministry, 2021)

## **7. Challenges and Opportunities**

While several initiatives and best practices exist for reducing food wastage in India, various challenges must be addressed to scale up and replicate successful interventions.

### **7.1 Economic Constraints:**

Limited access to finance, high investment costs, and lack of incentives pose significant barriers to adopting advanced technologies and infrastructure upgrades, particularly for smallholder farmers and micro-enterprises.

### **7.2 Technological Barriers:**

Limited digital literacy, connectivity issues, and affordability constraints hinder the adoption of technology-driven solutions, particularly in rural and remote areas where infrastructure and resources are scarce.

### **7.3 Behavioural Challenges:**

Changing consumer preferences and behaviours requires concerted efforts in raising awareness, education, and cultural shifts towards valuing food, minimizing wastage, and embracing sustainable consumption practices.

### **7.4 Policy Implementation Challenges:**

Inadequate enforcement mechanisms, bureaucratic hurdles, and political considerations pose challenges in implementing and enforcing policy interventions effectively, hindering progress towards reducing food wastage.

## **8. Recommendations for Action**

To address the challenges, the following recommendations are proposed:

### **8.1 Strengthening Infrastructure and Storage Facilities:**

Investing in the development of cold chains, warehousing facilities, and transportation infrastructure to reduce post-harvest losses and improve market access for farmers.

**8.2 Implementing Efficient Supply Chain Management Systems:**

Promoting the adoption of digital technologies, data analytics, supply chain optimization tools to enhance coordination, transparency, and efficiency across the supply chain.

**8.3 Promoting Technology Adoption and Innovation:**

Providing incentives, subsidies, and technical assistance to encourage the adoption of sustainable farming practices, agri-tech solutions, and innovative processing technologies.

**8.4 Enhancing Consumer Awareness and Education:**

Launching comprehensive awareness campaigns, educational programs, and behavioural change initiatives to promote responsible consumption, minimize wastage, and foster a culture of sustainability.

**8.5 Enforcing Effective Policy Measures:**

Strengthening regulatory frameworks, streamlining bureaucratic processes, and ensuring strict enforcement of food safety standards, waste management regulations, and incentives for waste reduction.

**9. Limitations**

The main limitation of the study is, it is based only on secondary data. Due to constraints such as time, resources, and access to databases not enough primary research and onsite field study for observing and testing processes have been collected.

**10. Conclusion**

In conclusion, by implementing a combination of technological, behavioural, and policy interventions, India can move towards a more sustainable, efficient food system that minimizes wastage, enhances food security, and mitigates environmental impact. India has lot of challenges to reduce FLW from farm to fork. This study has been concluded by a few recommendations. To reduce FLW, it is necessary to look at the causes in detail. Also need to follow if any best practices are available. The Indian Government has certain schemes, initiatives and investment plans to improve the FSC which are to be used effectively. It is an urgent need for an investment by both public and private sectors to reduce FLW. Only with these efforts, it is possible to achieve targets mentioned in SDG by 2030. Further research is needed to evaluate the effectiveness of interventions and to identify new opportunities for innovation and collaboration in addressing this critical challenge.



**ANNEXTURE****ACRONYM AND ABBREVIATIONS:**

FAO	- Food and Agriculture Organization of the United Nations
FLI	- Food Loss Index
FLW	- Food Loss and Waste
FSC	- Food Supply Chain
FWI	- Food Waste Index
MOFPI	- Ministry of Food Processing Industries
NAAS	- National Academy of Agricultural Sciences
SDG	- Sustainable Development Goals
UN	- United Nations
UNEP	- United Nations Environment Programme

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## **An Analytical Study on sustainable financing and material ESG Factors with reference to selected ESG MF schemes in India**

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### **Abstract:**

Investors provide finances to the business by investing in varied stock and mutual funds. Today, the industry is focusing on sustainable environment. Huge investment is pumped in for the same. The paper “An Analytical Study on Sustainable Financing and Material ESG Factors with reference to Selected ESG MF schemes in India” tries to study the thought process behind the selection of a stock under ESG mutual fund scheme and also going further it will make an attempt to see if there is any rationale in the returns generated by such stocks with relevance to ESG actions. Now here a newly developed concept is being studied which will give another facet of sustainability which is material and non-material ESG practices.

The scope of the study is to understand and observe the difference between material and non-material ESG factors of investment instruments under sustainable investing philosophy. The research focuses on analyzing the components of portfolio under 9 ESG themed mutual funds schemes in India.

**Keywords:** ESG themed Mutual Funds, Material ESG, ESG factors, ESG schemes

### **Introduction:**

In today's world people with concern for human wellbeing are getting vocal about repercussions of each action a business enterprise takes that leads to intentional or unintentional effects on the planet. An increasing good number of investors who wish to provide finance to the businesses but in a different manner is observed. Earlier the motive of any investor was to generate maximum returns, which continue to stay so which is justifiable also. However, in the context of these new wave of trending investment psychology such as responsible investing, sustainability, ESG (Environmental, Social and Governance) some investors want businesses to not only go generate commercial profits but also to add value to the society. Hence, they are

looking for investment alternatives which give them scope to support and finance such businesses which fit their expectations.

### **Sustainable Financing:**

The new outlook to investment, keeping in view sustainability has opened up doors of an altogether new system, a process, a strategy and a new set of challenges. Questions are getting raised such as what is Sustainable Financing? What are the criteria to decide a particular investment as sustainable or responsible or ESG themed? How to associate ESG rankings and correlate company valuations alongside the ESG activities? Additionally, there remains a challenge on the authenticity of the data based on which all above decisions are to be taken as the same information comes from the companies only. No legitimate disclosure norms or regulations are prevailing in the Indian markets which will entitle the validity of the ESG actions or do not render a stock into category of sustainable investing.

This paper tries to study the thought process behind the selection of a stock under ESG mutual fund scheme and also going further it will make an attempt to see if there is any rationale in the returns generated by such stocks with relevance to ESG actions. Now here a newly developed concept is being studied which will give another facet of sustainability which is material and non-material ESG practices.

For the sake of understanding let's have a look at what is sustainable investing. When we say sustainable investments, we mean companies who have good scoring on three major fronts which are Environmental, Social and Governance viz Corporate Governance (ESG). There are certain popularly accepted parameters which are considered while rating a company on ESG ranking. In the EU's policy context, sustainable finance is understood as finance to support economic growth while reducing pressures on the environment to help reach the climate- and environmental objectives of the European Green Deal, taking into account social and governance aspects. Sustainable finance also encompasses transparency when it comes to risks related to ESG factors that may have an impact on the financial system, and the mitigation of such risks through the appropriate governance of financial and corporate actors.

In India as sustainable finance is picking up pace, not only in equity but government is taking proactive steps with the issue of green bonds, representing an innovative financing mechanism for environmentally beneficial projects. The investment will concentrate on areas like renewable energy, energy efficiency and sustainable agriculture, water management, reducing greenhouse gas emission, these instruments will have fixed or floating interest rates. India, ranking as the sixth-largest issuer of green, social, sustainable, sustainability-linked, and transition bonds (GSS+) in the Asia Pacific Region, holds this position according to unpublished data from Climate Bonds. By the close of 2022, Climate Bonds recorded GSS+ bonds from 43 sovereigns, totaling \$323.7 billion.

The outcomes of amounts invested through such instruments can visibly be seen as these are investments with a cause let us say! However, the same inference cannot be taken from equity financing through ESG themed mutual funds. As most of such schemes are found to holding their portfolio in large cap stocks accounting for quality stocks per se and selection criteria is not clearly funding of sustainable plus commercial activities.

Rather the criteria are promoting the stocks on the ESG rankings which are based on information disclosed by such companies. Now what may happen in reality is that these companies may be undertaking such commercial activities which are rather anti-ESG however to soften the blow, such companies may undertake some kind of eco-friendly initiative. Such activities may get highlighted under their CSR and help them get a ranking. These measures are also called non-material ESG initiative like adopting a certain village and planting trees or raising a voice for a noble cause like saving a girl child etc.

Now these could be companies with better returns for investors with no real efforts towards sustainability. There is a need to identify how investors perceive sustainable investing. The key challenge remains the existence on connecting link between inflow of money and its effective utilization and role of regulators and financial markets amongst them.

As a mutual funds distributor with personal experience, it can be said that investors of such instruments are concerned about the returns not the means to generate such returns. As long as institutional investors are fueling the desire to become responsible investor and funds the noble and global issues the finance supply will take place. Is it possible to ignite the same thought in the minds of common investor and patronize them to not only actively and thoughtfully promote sustainable finance? Even if investors start showering love towards sustainable theme, what is the future of such schemes? Future here means how much returns such investments will generate and in order to generate such returns will these businesses be capable of bringing and sustaining such products in the market? At the end of the day returns are linked to sales and sales are linked to product utility.

### **Review of Literature:**

Dr. S Saravanan, Dr. R Satish (2024) ESG Parameters an indicator for Financial performance: An empirical study on stocks listed in NIFTY, in their analysis observed that there is association between ESG score of Nifty 100 ESG Index stocks performance and their ESG scores. This study was based on the study of variables like EBIDTA, ROCE, P/BV and ESG score. It concluded that FIIs also give high value of investment to companies with better ESG score and hope these companies will generate good returns. However, the study is of aggregate

numbers viz Nifty 100 ESG Index funds. Averages may not give a clear idea and individual valuation of stocks and their return may be different.

Byung Hyun Ahn, Panos N. Patatoukas, George S. Skiadopoulos, (2024) Material ESG Alpha: A Fundamentals-Based Perspective, this paper gives a narrative on correlation between large, established and high profitability firms are better are generating a good ESG ranking and hence can generate alpha for investors as the author analyzes these firms are high proximity of bringing material ESG changes and addressing more sustainability issues. The thought that can be inferred from a highly statistical analysis is that these firms' profitability should be measured not only in monetary terms but in terms of sustainable benefits. As they are more prone to cost effectively implement material ESG factors. The analysis of material ESG factors has a base of SASB (Sustainability Accounting Standards Board) components viz a viz technical data of ESG score changes is also taken into consideration here and it concludes that it will be difficult to link stock performance with YoY ESG score alteration as many fundamental factors also affect stock valuations. In the Indian context we can analyze is such situation that only a select of 9 schemes have ESG theme and if we analyze the common stocks and weightage given to these stocks it may give us some meaningful results.

Samrat Rayland Irsan Hardi (2024) Refining ESG Disclosure's Role in Corporate Economic, Environmental, and Social Sustainability Performance the paper talks about the relationship between ESG disclosure and sustainability performance. It throws light on the Sustainability Performance Transformation Index (SPTI) that evaluates corporate performance in terms of people, the environment, and the economy. It takes SPT Index as variable and statistically analyzes the relationship with company size, Industry type and company's geographical location. The study concludes that there is positive impact of ESG disclosures and transparency on SPTI rankings. There is need for investor engagement for creating more ESG friendly atmosphere the base of which should be focused on disclosures and transparency.

## **Research Methodology**

The scope of the study is to understand and observe the difference between material and non-material ESG factors of investment instruments under sustainable investing philosophy. The research will focus on analyzing the components of portfolio under 9 ESG themed mutual funds schemes in India.

The objective of the study –

1. To identify level of similarity in the constituents of 9 ESG mutual funds in India.
2. To analyze relative weightage assigned to each common stock in the portfolio.
3. To study of various material ESG factors addressed by companies in ESG schemes.

4. To observe the flow of funds towards sustainable debt financing and sustainable equity financing

### Secondary Data –

Data from mutual funds website, company websites, various articles, ESG dedicated journals and newspaper is used for the analysis.

### Limitation –

The limitation of the study is that here universe of equity ESG investing is restricted to 9 ESG themed mutual funds schemes. And data is derived from secondary sources.

### Data Interpretation and Analysis

The data collected from the portfolio disclosure of each AMC as on 26<sup>th</sup> February 2024.

Table No. 1: Table showing AUM and no. of stocks under each scheme.

Scheme Name	AUM (Rs. In crores)	No. of stocks	Scheme age	CAGR
Aditya Birla Sun Life ESG Integration Strategy Fund	699	42	3 Years 4 months	12.30%
Axis ESG Integration Strategy Fund	1,369.76	84	4 Years	16.44%
ICICI Prudential ESG Exclusionary Strategy Fund	1442.43	44	3 Years 5 months	18.84%
Invesco India ESG Equity Fund	540.93	38	3 Years	15.28%
Kotak ESG Exclusionary Strategy Fund	986	45	3 years 3 months	14.49%
Mirae Asset Nifty 100 ESG Sector Leaders Fund of Fund	111.12	72	3 years 4 months	15.05%
Quant ESG Equity Fund	234.2	21	3 years 4 months	16.59%
Quantum ESG Best In Class Strategy Fund	77.96	51	4 years 6 months	18.49%
SBI Magnum Equity ESG Fund	5481.75	35	20 years plus	16.59%

## Top Holdings of 9 ESG schemes –

Table No.2 Aditya Birla Sun Life ESG Integration Strategy Fund

Stock Name	% holding
ICICI Bank Limited	9.17%
Infosys Limited	7.84%
HDFC Bank Limited	7.27%
LTIMindtree Ltd	5.87%
ABB India Limited	3.56%
Bajaj Finance Limited	3.54%
Mahindra & Mahindra Limited	3.52%
Titan Company Limited	3.40%
TVS Motor Company Limited	3.19%
HCL Technologies Limited	3.12%

Table No.3 Axis ESG Integration Strategy Fund

Company	Holdings (%)
Torrent Power Ltd.	6.11
Infosys Ltd.	4.89
Tata Consultancy Services Ltd.	4.2
ICICI Bank Ltd.	3.65
Trent Ltd.	3.12
Tech Mahindra Ltd.	2.65
Tata Motors Ltd.	2.78

Table No.4 ICICI Prudential ESG Exclusionary Strategy Fund

Company	Holdings (%)
Sun Pharmaceutical Industries Ltd.	8.27%
Bharti Airtel Ltd.	7.19%
HDFC Bank Ltd.	5.94%
ICICI Bank Ltd.	5.90%
Infosys Ltd.	5.22%
Inox Wind Ltd.	4.61%
HCL Technologies Limited	3.58%
Maruti Suzuki India Ltd.	3.30%



Table No.5 Invesco India ESG Equity Fund

Company	Holdings (%)
HDFC Bank Ltd.	5.31%
Home First Finance Company India Ltd.	2.23%
Honeywell Automation India Ltd.	2.64%
ICICI Bank Ltd.	5.64%
Indusind Bank Ltd.	3.45%
Infosys Ltd.	7.25%
Axis Bank Ltd.	3.97%
Bharti Airtel Ltd.	3.59%
Cholamandalam Investment & Finance Co. Ltd.	1.74%
Eicher Motors Ltd.	2.43%

Table No.6 Kotak ESG Exclusionary Strategy Fund

Company	Holdings (%)
Zomato Ltd.	3.02%
Ultratech Cement Ltd.	4.01%
Sun Pharmaceutical Industries Ltd.	3.04%
Maruti Suzuki India Ltd.	3.43%
Larsen & Toubro Ltd.	5.11%
Infosys Ltd.	6.79%
ICICI Bank Ltd.	3.47%
Hero Motocorp Ltd.	3.59%
HDFC Bank Ltd.	6.05%
GAIL (India) Ltd.	3.42%

Table No.7 Quant ESG Equity Fund

Company	Holdings (%)
Bharat Electronics Ltd.	4.38%
Wipro Ltd. : Futures Near	4.52%
Mphasis Ltd. : Futures Near	4.56%
Infosys Ltd. : Futures Near	6.18%
Reliance Industries Ltd.	9.74%
RBL Bank Ltd.	7.69%

Life Insurance Corporation Of India	5.68%
Jio Financial Services Ltd.	8.29%
Jindal Steel & Power Ltd.	5.14%
Britannia Industries Ltd.	8.59%

Table No.8 Quantum ESG Best In Class Strategy Fund

Company	Holdings (%)
Tata Communications Ltd.	2.95%
Tata Consumer Products Ltd.	3.52%
ICICI Bank Ltd.	2.68%
HDFC Bank Ltd.	4.03%
Axis Bank Ltd.	2.39%
Maruti Suzuki India Ltd.	3.07%
Indian Hotels Company Limited	4.87%
Tata Consultancy Services Ltd.	3.04%
Infosys Ltd.	3.06%
TVS Motor Company Ltd.	5.02%

Table No.9 SBI Magnum Equity ESG Fund

Company	Holdings (%)
Infosys Ltd.	8.25
ICICI Bank Ltd.	7.17
HDFC Bank Ltd.	6.75
Axis Bank Ltd.	6.16
Larsen & Toubro Ltd.	5.09
Tata Consultancy Services Ltd.	4.34
Ultratech Cement Ltd.	4.13
TVS Motor Company Ltd.	3.91
State Bank of India	3.82
ABB India Ltd.	3.61

Table No.10 Mirae Asset Nifty 100 ESG Sector Leaders Fund of Fund

Company	Holdings (%)
AXIS BANK LTD.	3.230034
BHARTI AIRTEL LTD.	3.228163
HDFC BANK LTD.	8.520751
HINDUSTAN UNILEVER LTD.	2.415029
ICICI BANK LTD.	7.860523
INFOSYS LTD.	6.461883
KOTAK MAHINDRA BANK LTD.	2.926117
LARSEN & TOUBRO LTD.	4.483633
RELIANCE INDUSTRIES LTD.	10.52071
TATA CONSULTANCY SERVICES LTD.	4.213697

From the above tables it has been observed that some of the common holdings in the major portfolio are Infosys Ltd. ICICI Bank ltd. ABB India Ltd, TCS, Wipro Ltd. HDFC Bank Ltd. Other than above stocks there are some common stocks like Reliance Industries, Jubilant Foodworks Ltd, Britannia Industries, Tata Communications etc amongst these schemes which are not in top holdings however they are common in above schemes it to the list of ESG universe.

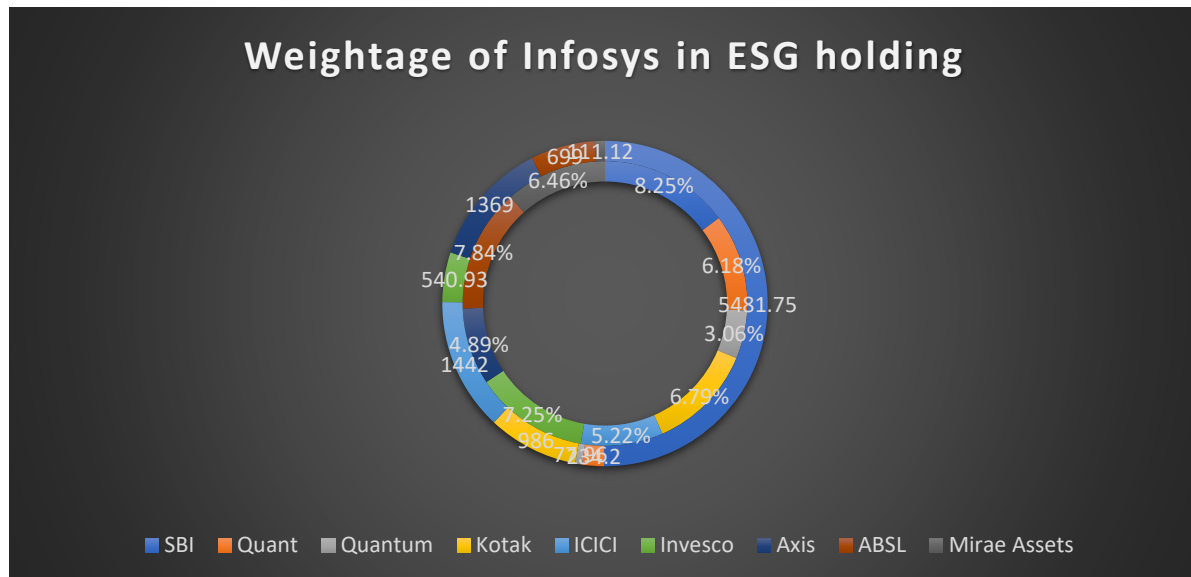
While analyzing the question what makes Infosys the darling of the ESG theme schemes material ESG given the maximum weightage with proportion to AUM, we observed the organization has addressed material ESG issues such as Enabling digital talent at scale which we can say gives equal scope for pay without gender bias. It covers diversity and inclusion and takes concrete actions on climate change, data privacy. In their ESG materiality index they strongly believe that employee wellness, energizing local communities, waste and water management impact sustainable business performance.

(Source <https://www.infosys.com/content/dam/infosys-web/en/about/corporate-responsibility/esg-vision-2030/esg-priorities.html>)

Table No.11 Weightage of Infosys across 9 ESG schemes with reference to AUM.

AMC	% of Infosys	AUM (Rs. In crores)
SBI	8.25%	5481.75
Quant	6.18%	234.2
Quantum	3.06%	77.96
Kotak	6.79%	986

ICICI	5.22%	1442
Invesco	7.25%	540.93
Axis	4.89%	1369
ABSL	7.84%	699
Mirae Assets	6.46%	111.12



Another stock with high exposure in ESG theme is ICICI Bank, which has considerably tackled material ESG issues like Compliance with regulations and other laws, Data privacy and cybersecurity, Corporate governance and business ethics, Stability of risk management and risk outcomes. The method adopted by the organization is assigning level of importance from High to low from context of external stakeholders and internal stakeholders and ranking the issues. Top issues include Exposure of the Bank to Climate Related Risks in its Loan Portfolio, The Bank has taken steps to embed ESG and climate risk assessment into its credit assessment and has established a Climate Risk Management Framework.

More such examples can be discussed at length; however, the scope of this paper is to analyze material ESG issues addressed by stocks in ESG portfolio. The universe is huge, and each organization has own ways to be the sustainable organization and fulfil investor's expectations. An important task is to analyze how these actions are impacting the valuation of the company or is there any relevance between returns generated and material ESG issues addressed. Now as per table no.1 we can observe except for SBI Magnum Equity ESG Fund rest of the schemes are 3 to 4 years old and CAGR (Compounded Annual Growth Rate) of each scheme is in the range of 12% to 18%. This essentially proves that all these activities are having a positive impact on the valuations of the company.

## Observations and Finding

With reference to the objectives set for the above paper following are the observations –

- A few stocks which are common in all schemes like Infosys, Wipro Ltd. Reliance Industries, ICIC Bank, HDFC Bank do hold majority of investments as weightage given to these stocks are proportionately higher. It can be observed that 5 to 9 % of stock holdings are similar for all these schemes.
- 3 % of the stocks hold majority weightage (8 to 10%) AUM in each scheme.
- Climate actions, Corporate governance, inclusion, data privacy are some of major material ESG factors addressed by leading players in the ESG field.
- With reference to AUM growth, it has been observed that some schemes like Aditya Birla Sun Life ESG Integration Strategy Fund, ICICI Prudential ESG Exclusionary Strategy Fund, Invesco India ESG Equity Fund observed outflow of funds whereas other AMCs saw increase in Aum over the years.
- Also, it is observed that CAGR of all schemes falls within the range of 12% to 18% which gives scope for further research whether that similarity in holding pattern could be one of the reasons for such a performance? Or there is no correlation between holding pattern and CAGR of schemes.

It can be concluded that few stocks are ESG leaders on the scoreboards and there is need for continuous evaluation and observation of material ESG factors undertaken by ESG leader financial performance. Also there is need to identify measures to calculate impact on sustainability.

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7. <https://www.advisorkhoj.com/mutual-funds-research/Axis-ESG-Integration-Strategy-Fund-Regular-Plan-Growth-Option>
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## Conceptual model of sensory effect on buying decision towards passenger cars

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### Abstract

In the discipline of consumer behavior, understanding the intricate interplay between sensory experiences and purchasing decisions is important. This paper proposes a conceptual model that talks about the sensory stimuli influencing consumers' choices when it comes to passenger cars buyers. By examining the impact of visual aesthetics, tactile sensations, auditory cues, and olfactory impressions, the model aims to explain the underlying mechanisms that drive the buying decisions. The proposed theoretical framework puts forward that the sensory stimuli evoke responses through sensory experiences, which subsequently shape consumers' buying decision of the car. However, the sensory experiences are not to be considered in isolation. The attributes such as the underlying perception of the car, price point, comfort, brand appeal, gender, income, age, etc. would play a pivotal role in the decision making after the reception of sensory cues. However, it is essential to acknowledge that this model remains theoretical at present. Its validity will be empirically tested in future research. We plan to collect data from actual car buyers, applying relevant statistical techniques to validate the proposed model. By bridging the gap between sensory perception and consumer behavior, this model contributes to the broader field of marketing and provides significantly implicative inputs to the car industry that would have impact on the sensory aspects of branding and marketing at large.

**Keywords:** Sensory branding, Sensory experience, car industry and passenger cars

## **Introduction**

Sensory experience is the source of sensory effect that this paper wants to study. The field of marketing is very much familiar with the concept of experiential marketing (Smilansky, 2009), and sensory marketing which is the “marketing that engages the consumers' senses and affects their perception, judgment and behavior” (Krishna, 2012) which later evolved to a multi-sensory brand approach (Hultén, 2011; Krishna, 2012). Whereas sensory branding is the thoughtful design of sensory stimuli to create experiences and brand identity that would have positive influence on the buyer’s decision making. These techniques of sensory branding and sensory marketing are leveraged to create the experiences that involve more than one senses, and are called as sensory experiences. An experience is nothing but a perception which is the process of getting to know about objects and relationship to gain information of everything around us (Cherry, 2023).

We get to know about the things around us through our senses (Erenkol, 2015) and the information gained through the senses is used to process decision-making. Sensory stimuli serve as the media of information that is to be used for the cognitive & emotive processes.

Marketers strategically put the sensory cues throughout the car-buying journey to positively influence their customers because sensory experience often plays a major role in attracting a customer towards a brand (Lindstrom, 2010; Schmitt, 1999). The print ads, flyers, and billboards highlighting the stylish images of the cars target the visual aesthetics. The video ads that are runs on the different channels of distribution including television or social media like YouTube or Facebook use the auditory stimuli in addition to visual ones. The real magic happens when the customer sees the actual product or visits the dealership. Being akin to a retail store setup, the dealership leverages the full potential of sensory interactions with visual aesthetics, tactile sensations, auditory cues, and olfactory impressions. Here’s when the sum of one plus one becomes five and not two as a combination of more than one sense has exponential impact than a single sense acting in silo (Lindstrom, 2010).

## **Theory:**

### **Sensory branding in car industry**

Due to the innate nature of car as a product, out of five human senses, only four are engaged in case of the car-buying journey. Sight is the most dominant of all the senses and visual cues are encountered more than any other cue (Biswas et al., 2014; Hultén, 2013). Visual appeal is crucial when evaluating cars. It affects our initial impression and perception of quality. Apart from the other channels before reaching the dealership, sight has two main aspects: Exterior design: Sleek lines, elegant curves, and eye-catching colours are strategically designed to contribute to a positive visual experience. Interior design: Well-designed dashboards,



thoughtfully placed internal lighting, and aesthetically pleasing materials are put in to enhance the overall appeal.

Audio cues influence customers' mood, evaluation and their behavioural & emotional responses (Alpert et al., 2005; Bartholmé & Melewar, 2016; Han & Ryu, 2009). The auditory cues in a car are suggestive of build quality, status, power and performance. Listening to the fulfilling sound of the engine, shutting of the doors, infotainment system and other auditory indicators help enhance the experience and understanding of the product. Smells have the strongest connections with human memory and people have different memories and emotions with different smells (Bell et al., 2006). The ambient scents are found to create a positive consumer experience in stores (Doucé & Janssens, 2013; Vinitzky & Mazursky, 2011). Every industry tried to make a long-term impact on their customers and the car industry is not an exception. They too use specific scents with their internal materials like leather or fabric to influence perceived quality. The scents associated with freshness, luxury, and excitement are used to trigger positive emotions.

Along with smell, touch is another thing that can be only experienced in the dealership or with an actual product and not through any promotional channel like newspapers, billboards, or digital media. The haptic cues are found to yield strong positive results in the buying process (Peck & Childers, 2003). The feel of materials (e.g., leather, soft-touch plastics) affects perceived comfort and luxury. The responsiveness of controls and buttons, texture of the steering and door-handles all such touch-points put an impression in the minds of the customers.

### **Sensory effect on buying decision in passenger cars**

All these senses are triggered together when a customer gets their hands on the car of any friend or family, or more so at a dealership taking a test-drive. The combined effect of all these senses acting together creates a multiplier effect as pointed out by Lindstrom (2010) vis-à-vis them acting in silos, on the buying decision. Out of all the five stages of buying decision process, the customers can usually skip a few stages, but in case of buying a car where the involvement is high the customer can't skip any step (Kotler & Armstrong, 2017). Here, out of all these five stages i.e. need recognition, information search, evaluation of alternatives, purchase decision, and post-purchase behaviour, the sensory effect would not be relevant for all these stages by the fundamental nature of this framework. The sensory effect would be most active in the last three stages i.e. evaluation of alternatives, purchase decision, and post-purchase behaviour.

### **The conceptual model**

All the sensory stimuli evoke responses through sensory experiences, which subsequently shape consumers' buying decision of the car. Though the sensory experiences have a bearing on the stages of buying process, they are not directly responsible for the buyer's decision-making. It

is perfectly explained by the fact that you do not buy a car because you liked its colour and styling. The purchase would be a very well thought decision which will include more factors including the styling or colour. Sensory experiences neither work in silos nor do they work effectively individually. There is always a dynamic interplay happening among the sensory elements and between the sensory and non-sensory elements during this process. All this is very well integrated. Once the sensory experience takes place, the mediating factors kick in before the buying decision is made. The buyers being human in nature would always have a much personalised worldview of the things that they experience. That worldview would weigh the sensory inputs towards one end of the spectrum that fits the bill of that person's understanding and preferences. Of course, the sensory experiences would also contribute to the formation of that worldview, but the whole decision would never be determined by the sensory experiences alone. There are factors like price, age, gender that would have moderating influence in significantly shaping the buyer's decision.

Fig. 1 shows the conceptual model of sensory effect on buying decision towards passenger cars. The model accommodates a dedicated acknowledgement to all the other factors that play a mediating role through the process between the sensory experiences to buying decision including sensory perceptions.

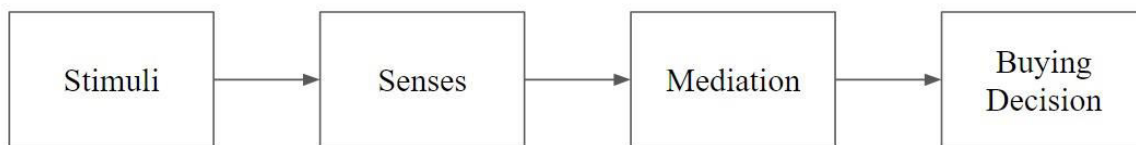


Figure 1. Conceptual model of sensory effect on buying decision towards passenger cars

**Stimuli:** The model starts with the external factors that trigger a response from an individual. These could be in the form of an advertisement or the new car smell or that roar of a car engine. The brand and marketing experts purposefully design these. These sensory stimuli are targeted towards the human senses carrying meaningful messages to be conveyed during the process of evaluation and consumption.

**Senses:** Then come the senses. In case of the industry in consideration, only four senses would be engaged and would receive the stimuli i.e. visual, tactile, auditory, and olfactory. These stimuli would trigger the process of sensory perception. This would again be different for different individuals based on their world-view and pre conceived notions about different stimuli. Nevertheless, given the nature of sensory stimuli, the recipients are expected to develop similar positive perceptions about the product.

**Mediation:** Third in line are the cognitive processes that happen after the sensory perception, which would be combined together with other factors that act as mediators. These processes would weigh the different aspects of the products along with the sensory effect. These mediators can be divided into two main categories. First, one would be the demographic factors like Age, Gender, Income level, Education level, etc. The second category would be the factors related to the offering i.e. Price, Safety, Comfort, Styling, Power, Fuel Type, Milage, Transmission (automatic or manual, 4x4 or 2x4), Aftermarket cost and service, Seating capacity, Pre conceived brand image, Country of origin, Digital and interactive features, Alternatives by competing companies, etc. Basis on the individual preferences of the decision makers, influencers, gatekeepers and blockers in the whole process, these factors would be ranked and weighted for final decision-making. There are continuous interplays between these mediating factors and the sensory experiences before the customer concludes.

**Buying Decision:** The summit of all the interplays between these factors, driven by sensory experience, would culminate into the buying decision, which is the goal of everything that the marketers do. This lays down the conceptual model that can guide the interpretation of the buying process of passenger cars, which involves a significant share of sensory experiences. By bridging the gap between sensory perception and consumer behavior, this model contributes to the broader field of marketing and provides significantly implicative inputs to the car industry that would have impact on the sensory aspects of branding and marketing at large.

## **Limitations**

It is essential to acknowledge that this model remains theoretical at present. Its validity will be empirically tested in future research. The current model is purely based on the secondary data and commonly known facts. Barring the collective effect of all the senses together, each of the four senses involved in a car-buying journey have differential effects individually. The proportionate impact of their effect would be subjective to each customer as per their individual orientation. The model enlists the possible mediators that would play a role in decision making after the stage of sensory experience. However, the magnitude of impact of these mediators would not be equal and needs to be measured.

## **Scope for Future Research**

Though a lot of research is going on in this area, there is a lack of focus on the car industry. We aim to spark more research in this area within the following gaps as identified. The model is currently a conceptual model and can be empirically tested by collecting data from actual car buyers and applying relevant statistical techniques to validate the proposed model. Not all the four senses would have an impact to the same extent as each other. The differential effect of all

of them in car buying process is yet to be determined. The future research should study how gender influences car preference, and how other demographics play a role in moderating the role of sensory experience in the car buying decision. The model can be expanded to include the process of perception, and other cognitive, emotive and affective aspects of the buying process.

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## **Role of Drone in Agriculture for Sustainable Development: An Indian Perspective.**

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### **Abstract:**

Climate change and environmental pollution are significant global issues in today's world, greatly affecting agricultural productivity. The current conditions are unfavourable for Indian agriculture, which plays a crucial role in the country's economy. Agriculture used to be limited to plant cultivation, but it has since expanded to encompass agricultural processing and marketing. As the population grows, finding effective ways to boost output becomes increasingly important. To adapt to these circumstances, agricultural practices must undergo advanced adjustments. Embracing technology in agriculture can be a beneficial trend, giving a long-term solution to meet the demands of an expanding population with sustainability. The implementation of drones has potential to transform the means of livelihood for labourers and enhances the quality of life for millions of farmers across India.

### **Introduction:**

The global population is expected to reach 9.7 billion by 2050, increasing food demand (FAO, 2017). New technology is needed to boost food productivity. The drone promotes social, economic, and environmental sustainability in agriculture Katekar, V., & Cheruku, J. K. (2022). Drones are useful for soil analysis, planting, crop disease surveillance, irrigation management, crop health assessment, livestock monitoring, crop damage assessment, precision crop spraying etc. Global research shows that drones save time, labor, water, and chemical costs. In several industries, drone technology has advantages and opportunities. Drones and other cutting-edge agricultural technologies may confront various obstacles. Environmental degradation and climate change are major global concerns that negatively impact agricultural productivity. Conventional farming methods, deforestation, and fossil fuel use worsen global warming and associated problems. Sustainable agriculture reduces greenhouse gas emissions, environmental deterioration and mitigating climate change. The agriculture business must enhance its efficiency, it can use innovative technologies to expand food production and meet India's growing population. It is crucial to identify methodological challenges and investigate alternate solutions using advanced technology.

Currently, irrigation, chemical spraying, crop monitoring, pest management, and others are unsustainable farming techniques.

**Keywords:** Drone, agriculture, sustainability, applications, challenges.

### **Research Objectives:**

1. To study the various applications of drone in agriculture for sustainable development.
2. To study the relation of adoption of drone and sustainable agriculture.
3. To study the various challenges associated with drone in agriculture.

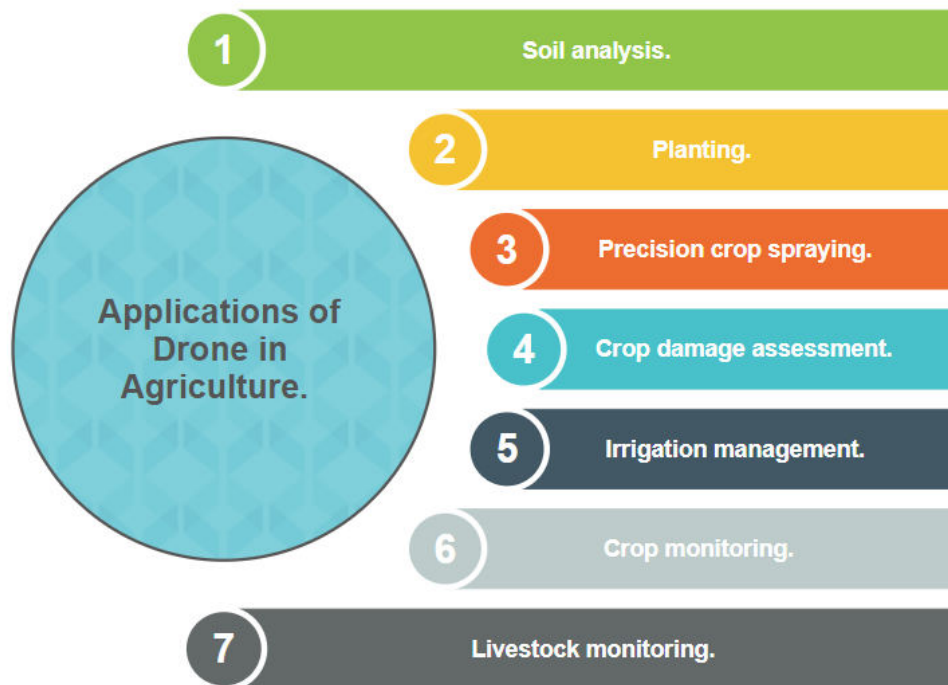
### **Research Methodology:**

The current research paper is based on the secondary data collected from variety of previous research literature.

### **Review of literature:**

1. Ayamga et al, (2021) describes increased use of drone technology in agriculture. It can deliver real-time farm data to help farmers choose inputs.
2. Patel R, R. (2021) – The author explains drone as a transforming tool in farming in many ways. This strategy is harder to grasp, but it yields speedy results.
3. Katekar, V., et. al (2022) explains that addressing the challenges faced by famers is crucial for adoption of drone technology in farming.
4. Mrunalini K & Deb CK (2021) focuses on the application of the drones.
5. Yinka-Banjo, C., & Ajayi, O. (2019) describes the various applications of drones and their advantages to the farmers.
6. Yadachi, S., Nagajjanavar, K., & Thejasvi, P. (2023) focuses on the role of drones in sustainable development of agriculture.
7. Mogili, U. R., & Deepak, B. B. V. L. (2018) describes the drone as an important revolutionary change in the face of agriculture which has diversified applications.
8. Pathak, H., et. al (2020) explained the potential problems, application of drones in agriculture.
9. Zuo, A Macrina, yet. Al (2021) G, al. el (2020), da Silveira, F., et. al (2021) describes the challenges associated with the adoption of drone technology.

## Applications of drones in agriculture:



Source – Author’s self-conceptualizing.

### Soil Analysis –

In order to enhance crop yield, it is important to assess the soil's condition, type, and the inclusion of micro and macro-nutrients prior to choosing an appropriate crop for cultivation (Katekar, V., & Cheruku, J. K. (2022). Conducting soil analysis prior to crop cultivation and throughout the growth process is crucial for informed decision-making, as it facilitates the selection of appropriate inputs and their respective quantities (Mrunalini & Deb, 2021). According to the World Economic Forum (2022), drones have the potential to be utilized in the analysis of soil for irrigation, agricultural planning, and nitrogen levels. According to Sylvester (2018), drones have the capability to gather data, which can assist in making precise decisions regarding the cultivation of crops that are suitable for the soil conditions, as well as determining the appropriate amounts of nutrition and water to be used periodically.

### Planting –

Planting crops has always required a lot of labor and money. Farmers use drones to efficiently and correctly cover large expanses of land in a short period, simplifying crop planting. Modern drone farming technology can cut planting costs by 85%. The drones ability to do multiple tasks at once reduces planting costs, Yinka-Banjo, C., & Ajayi, O. (2019). Drone



planting methods sequentially apply seeds and nutrients to agricultural fields. Drone technology improves crop management uniformity and efficiency while saving money. This crop sowing method has cut planting expenses by 85% and eliminated labor-intensive procedures, Katekar, V., & Cheruku, J. K. (2022).

### **Precision agricultural spraying –**

It involves the utilization of drones to minimize human exposure to potentially hazardous pesticides. The efficiency of Agri-drones surpasses that of cars and airplanes in executing this operation. Drones equipped with RGB sensors and multispectral sensors provide the capability to accurately detect and address areas of concern. According to experts, the use of drones for aerial spraying results in a fivefold increase in speed compared to alternative approaches.

### **Crop damage assessment –**

The evaluation of crop damage involves the utilization of agricultural drones equipped with multispectral sensors and RGB sensors to identify areas within the field that have been affected by weeds, illnesses, and pests. Based on this data, the precise quantities of pesticides needed to combat these infestations are established, which aids in minimizing the expenses incurred by the farmer.

### **Irrigation management:**

Countries prone to drought struggle to provide enough water to crops. Current irrigation systems distribute water uniformly throughout a field. To maximize the use of current water resources, water must be delivered to the right places. Water is crucial for crop growth. Insufficient or excessive water may hamper plant growth. Farmers occasionally make irrigation mistakes. Thermal digital cameras on the drone help farmers make accurate irrigation management decisions. The unmanned aerial vehicle can monitor soil moisture stress and waterlogged areas in agricultural fields (Mrunalini & Deb, 2021).

### **Crop health monitoring:**

Drones can monitor crop conditions seasonally, enabling timely action. Multispectral indices can be derived using visible, NIR, and thermal infrared sensors' reflection patterns at different wavelengths. These indicators measure water and nutrient stress, insect-pest attack, and crop diseases. Drone sensors may detect diseases or deficits before symptoms appear. They aid early illness detection. Regular crop monitoring is needed to assess crop damage and pest attack and take measures. enables farmers to prevent swiftly. Correct and frequent crop monitoring can show the crop's genuine state, enabling early problem discovery, (Mrunalini & Deb 2021). In the opinion of Mogili and Deepak (2018), drone-mounted multi-spectral cameras are better for crop monitoring. Based on crop visuals from a single flight, this camera can easily locate pest-infected areas. GPS coordinates help the drone spray chemicals precisely.

**Drone technology and sustainability in agriculture:**

Sustainable agriculture meets human food and fiber needs, improves environmental quality, efficiently uses non-renewable resources, integrates natural biological cycles, sustains farm operations, and improves livestock quality over time.

The implementation of drones in sustainable agriculture facilitates the acquisition of continuous real-time information, crop production parameters, and other valuable insights pertaining to agricultural field management. Drones have the potential to enhance agricultural productivity by mitigating environmental degradation, facilitating efficient crop health monitoring, providing valuable insights into soil health, enabling irrigation planning, and optimizing resource utilization. Drone technology is a groundbreaking innovation that has the potential to revolutionize the farming industry by enhancing the three dimensions of sustainability in agriculture.

**Environmental Dimension-**

The utilization of drones contributes to the attainment of resource optimization through the enhancement of input utilization efficiency. The implementation of minimal chemical usage and the optimal utilization of water resources can effectively mitigate pollution and the destruction of the surrounding ecosystem (Thota P, 2021). Utilizing drones for crop sowing or planting might diminish the reliance on tractors and contribute to labour, cost, and fuel savings, hence promoting sustainable farming practices. Minimising the use of petroleum fuel will contribute to the attainment of the environmental aspect of sustainability. (Shukla P, 2021).

**Economic Dimension:**

According to (Thota P, 2021) efficiently and accurately utilizing input resources will decrease the need and enhance crop yield, leading to a subsequent increase in farmers' revenue. The economic dimension of sustainability is enhanced by a decrease in labor requirements and production costs.

**Social Dimension:**

Drones make agricultural tasks faster, safer, and less laborious. Time savings, increased safety, reduced labor requirements, and social respect will assist achieve social sustainability in agriculture (Thota P, 2021).

**Challenges in adoption of drones in agriculture:****Technical challenges:**

1. Internet connectivity is essential for the proper operation of unmanned aerial vehicles (UAVs). This connectivity is needed to update firmware, verify regulatory flying zones at the deployment site, and schedule flights using base maps. 2020 (Pathak H)
2. Endurance time - The flight time of a UAV carrying payloads on a single battery. Farmers cannot cover the entire land with traditional drones due of their limited flying time. 2020 (Gago et al.)
3. To address the shortage of multifunctional Agro-UAVs, research and development activities should be prioritized to build drones that can assist in all stages of harvesting. Multifunctional drones can cut equipment purchase, operating, and maintenance expenses. Additionally, varied technologies that evaluate data and take automated and fast actions are needed. Zuo et al. (2021)
4. Limited payload weight is the main barrier to UAV deployment. This difficulty is especially evident when adopting UAVs for fertilizer spraying (Marcrina G, 2021).

### **Economic challenges:**

1. High maintenance costs - Early technology development leads to higher costs (da Silveira, 2021).
2. Component costs are high due to the evolving drone industry (da Silveira, 2021).
3. Skilled labor cost - Capital-intensive hiring due to skilled worker shortage (de Silveira, 2021).
4. High investment costs unaffordable for drone acquisition (Pathak, H 2020).

### **Conclusion:**

Growing food demand and population needs require an agricultural revolution. Farmers in India must adopt innovative technologies to enhance agricultural profits due to rising costs and workforce shortages. Diverse drone uses are driving rapid innovation along with sustainable practice. Drones have the potential to increase agricultural output by reducing environmental degradation, permitting efficient crop health monitoring, providing useful insights into soil health, enabling irrigation planning, and maximizing resource allocation. Adoption of drones will help farmers make decisions and do field jobs faster than humans.

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## **A study on Envisioning the Export of Sericulture Industry in India - A Spatiotemporal Analysis**

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### **Abstract**

Indian sericulture industry employees 9.2 million people in the semi urban and rural areas across the country. Sericulture industry is the economy producer compare to other agricultural products with this the country is 2<sup>nd</sup> largest exporter of mulberry, Eri, muga and Tasar silk because of the great traditional background and a strong domestic market. India's climatic conditions is one greatest benefit for the high production. A major contributors states are Karnataka, Andra Pradesh, Assam, Tamil Nadu and Jharkhand in the nations sericultural output, these states occupy 97% of mulberry production a pure form of silk. The current global scenario opens enormous opportunities for the silk export in the sericulture industry. In 2022-2023 silk and silk products of India stood at ₹ 22,859 million (US\$276.84 million). China is the 1<sup>st</sup> producer of silk in the world and its contributions stands at 2023.21million (US \$ 24.5 million) in 2023 but in 2022 China is the top export of silk of USD \$ 276 million and India's top imported in 2022 is USD \$221 million. According to the Annual Report published by the Central silk board (CBS) for the year 2021-2022 raw silk production is 34,903 metric tonnes, own production is 33770 metrics tonnes, Raw silk imports are 1804 metric tonnes and silk exports are worth USD 277 million. India Sericulture villages are 52360 total sericulture families in India is 947631 employment is about 7.52 people. The study analysis's the market dynamics and the exports data and export destination of silk products also the competitive advantages with challenges that Indian sericulture exporters are faced by, sericulture is the only crop highest's economy generating.

**Key words:** Sericulture, Sustainable practice, export of silk, geographic information system

### **Introduction**

#### **History**

The sericulture industry holds a significant position in India's agricultural landscape-contributing to economic growth and traditional heritage of the country. Silk has a rich history spanning centuries, well known as "Queen of textiles" due to their unmatched grandeur, natural sheen, dues, softness, touch, durability and color. Parties of sericulture in India are from ancient days. The history takes us back to the Buddhist periods were the sericulture started off. Silk or

cocoons is knowing a “Pundarik” Sanskrit literature from the “laws of Manu”, “Ramayana” states this, Chinese princess married a king in Tibet- she got the silk worm eggs and some mulberry seeds on the sendoff to in laws places, this Tibet sericulture came to India. Way back Mugal emperor was the mulberry silk producers in the mugual periods. According to medieval historians’ sericulture was widely growth in the Karnataka, west Bengal, Kashmir and other states of India. East India company prioritized the sericulture silk production more in the country as to export it to the Great Britain.



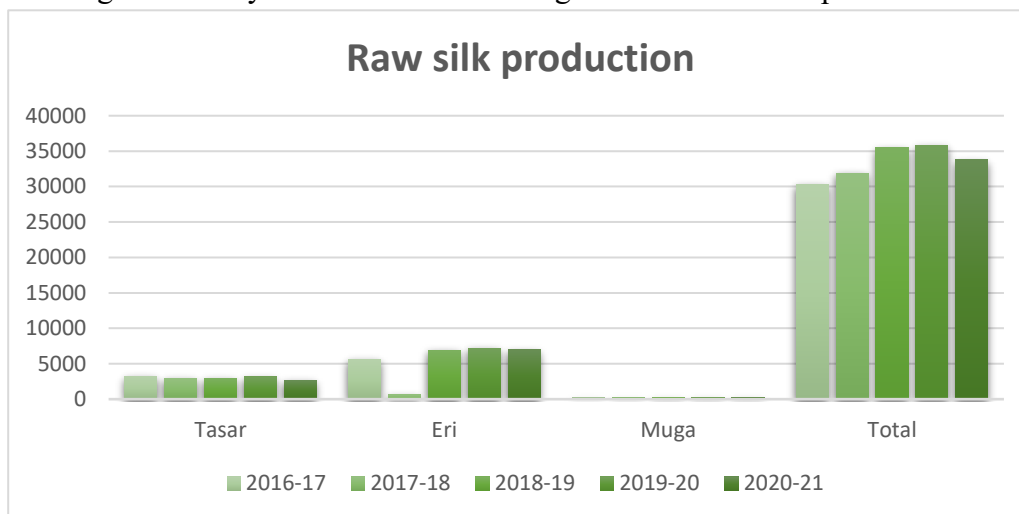
### **Current Scenario**

India’s cultural and traditional domestic markets have always had a diverse silk garment with a design of geographical specifications for the attractions and more sales in the industry as attacked the economically weaker section of the people including the women. The cultivators of sericulture would never face wastage problems, from the cocoons the threads are taken out for the production of silk the waste from silk cocoons are used to manufacture the jute sheet for the buildings in the countries like ice lands were its too cold, people to avoid coldness use these silk cloths and sheet to keep themselves hot, coming to the worms of cocoons are used to

manufacture dogs foods and fish food this way the farmer would get income for every minute materials of sericulture. This is the only more economy producing cultivation compare to other agriculture cultivation. India stands in the 2<sup>nd</sup> positions in production of silk about 34903 MT also the largest consumer in the world geography.

## Emerging Scenario

India's silk industry has achieved a degree of proficiency with the commendable employment opportunities for the semi urban and rural areas. The employment opportunities in not only for India also the 22 countries in the world map producing the silk. The reengineering new mapping style. The government can step a cooperative societies and cooperative union at very villages so that the farmers get the clear picture and understanding about the cultivation and continuous training. This would create more demand for the Indian silk products and helps in absorbing the other competitors. Currently the India's silk production is 30348 MT in 2016-17 and 33770 MT in 2020-2021 an extent of output change is 3422 MT over a period of 5 years, this increase of production is to meet the demand patterns by Channing the quality and structures of working. This study address on the challenges and issues faced post cocoons sections.



## Domestic market of Sericulture industry

The sericulture activity of India is well known for its testament of the countries richest cultural and economic powers. As imported 1804 MT worth 570.56 Crore in the 2020-21 and exported worth 1.43 crore through we are the 2<sup>nd</sup> largest producer, the domestic market for the silk is 35573 MT and production of raw silk is 33770 MT which led to more import of the silk to the country. One of the reasons for more consumption is due to the traditional background of the Dravidians and It also catching up with international trends and growth. The Government estimates that Indian textile industry would grown up by 10% annually to meet the 190 billion at end of the 2024-2025. The government is coming up with the mega cluster under the “National Handloom Development Programme” (NHDP) to promote the production of the sericulture



sector also many conferences and “Mega Textile Park” are set up in every state for the more insights (Indian Brand Equity Foundation). Due to this comparing with the rest 4 years data- year 2020-2021 has imported less of raw silk



### **Export market of Sericulture industry**

India's contributes 40.44 % to the world silk production and also 25.3% has increased in export of the year 2022. According to the geographical land space and calculations the 95% of the silk and silk products are manufactured from the Asian countries with the 22 countries on the world map. India exports to more than 30 countries in the world, top countries are USA, China, UAE, Italy, Germany, Australia, Malaysia, Canada, Nepal, France and Spain. USA is the top importer of the silk of 24.7% out of these 33.73% is silk carpet and 27.32% of natural silk yarn. The second importer of silk from India is UAE about 19.8% the 24.8% is the silk carpet and 52.80% is the natural silk yard. Products wise export earning of the commodities are in the below table 4. India enjoys its unique global position of silk in terms of production and exports with various commodities of same product shows a fair in the promote and export of the silk and silk products across the world.

### **Silk Expo**

The Government has initiated the “Silk Mark Expo” programmers for the authorized users across India to create an awareness, credibility and popularity. This is a platform brings the consumers and manufactures under one platform for the purchase and sell of the pure silk products are set up in every district and is well known as silk market. This even creates a sustainable development in the sericulture industry

## **Sustainable development of sericulture in the world**

1. End of the poverty: This industry provides the employment to all the members in the family, an ability of converting the family labor into a useful income generating occupations for the farmers, this is a tool to alleviate the poverty
2. Zero hunger: Silk and sericulture industry as recognized as a labor incentive due to the continuous Research and development the product is enhanced with their quality and income generation. The ISC (Council for India School Certificate Examinations) making a continuous effort to develop the sericulture industry
3. Sustainable income: many studies in China, Thailand and India as proven that this is an women-oriented sector were 60% of women are employed. this could bring gender quality with sustainable income generation at house holds
4. Colorations and partnerships: this industry creates a global colorations and partnerships. The prime advantage of this is that the consumptions are more in the developed countries, enable the flow of equity from rich to poor. The inflow of cash can develop the partnership between the manufactures under the government or agencies surveillances. The international sericulture commission plays a crucial role in building this partnership and collaborations

## **Strength of sericulture industry**

The industry has very simple technologies were the layman or illiterate can easily understand and inbuild a quick succession of yielding incomes in every 2 to 3 months. Sericulture would not demand for the sophisticated machinery, it involved with very simple appliances. Plantation of mulberry silk can be done in any type of the soil even forest soil, hills and slopes, even in the conditions of rain fed sericulture are suitable. In developing countries like India, sericulture is an Argo based industry play vital role in the economy improvement of the nation.

1. Vast production capacity
2. Efficient raw materials production capacity
3. Abundant skilled and cost oriented labors
4. Enterprener acumen
5. Massive export opportunities
6. Huge domestic markets
7. Adaptable silk production processes

## **Problems faced by Indian sericulture industry**

Sericulture ideally suitable for the rural development and improvisation of the country economy. The industry has a hindrance of low or cheap and alternative silk (China) also the usage of outdated technologies and unscientific “handlooms”, “reeling”, “rearing”. The poor knowledge about the farm diseases and egg formation among the farmers.

1. Fluctuations in the price movement
2. Lack of well-established markets

3. Travelling distance to the market
4. Lack of storage facilities
5. Insufficient technical training
6. Limited awareness about market trends
7. Inadequate infrastructural development for rearing

## Conclusion

India's silk industry is at a demand and a major player in the global markets, the growth prospects of this industry seem to be fair and reaching the near percentages of targets. Favorable climatic conditions and the huge labor power can eradicate the poverty also the enrollment of women can improvise the production capacity to export more. Indian silk industry can reach the greater heights

## Suggestions

1. Establishing the market centers at every village can be the strategic initiative by the government to improvise the access
2. The government or relevant agencies to provide market information to farmers so that they can take informed decisions
3. Infarfctional development should be done for the storage
4. Youn generations can be motivated to work in the sericulture industry by highlighting the income generation opportunism and the potential markets
5. With Japanese's technology the central silk board has evolved a bivoltine silk worms' races, such initiatives should be taken up
6. Women needs to be employed more and gender equality to be created in the nations for more production
7. ISC (Council for India School Certificate Examinations) program awareness to be created by the Higher Education Commission of India

**Table-1 Countries raw silk production**

Sl.NO	Countries	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021
1	Bangladesh	41	41	41	41	41
2	Brazil	600	650	469	377	373
3	Bulgaria	10	10	10	10	9
4	China	142000	120000	68600	53359	46700
5	Colombia	-	-	1	1	1
6	Egypt	1	1	2	2	2
7	India	31906	35468	35820	33770	34903
8	Indonesia	3	3	3	3	3

9	Iran	120	110	227	270	272
10	Japan	20	20	16	16	10
11	Madagascar	7	7	8	8	8
12	North Korea	365	350	370	370	370
13	Romania	-	-	1	1	1
14	Philippines	2	2	2	2	2
15	South Korea	1	1	1	1	1
16	Syria	0	0	1	1	1
17	Thailand	680	680	700	520	503
18	Tunisia	2	2	2	2	2
19	Turkey	30	30	5	5	5
20	Uganda	-	-	3	3	3
21	Uzbekistan	1200	1800	2037	2037	2037
22	Vietnam	520	680	795	969	1067
Total		177507	15985	109111	91765	86311

Source: International Sericulture Commission (United States)

Years	Quantity in tonnes (MT)	Value (Cr)	US\$
2015-16	3529	1006.16	153.68
2016-17	3795	1092.26	162.85
2017-18	3712	1218.14	189.01
2018-19	2785	1041.4	148.38
2019-20	3315	1149.32	162.38
2020-21	1804	570.56	77.24

Source: Central Silk Board

Year	Value (Cr)	US\$
2015-16	1.43	0.22
2016-17	0.44	0.07
2017-18	-	-
2018-19	1.36	0.19
2019-2020	1.15	0.16
2020-21	1.43	0.19

Source: Central Silk Board

<b>Commodity</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>	<b>2019-20</b>	<b>2020-2021</b>
Row silk	0.07	0.07	0.28	0.16	0.2
Silk Yarn Fabric	61.81	52.72	57.78	58.3	55.89
Ready-made Garments	144.71	157.88	170.82	119.12	91.96
Silk Waste	14.58	15.69	18.61	13.87	20.34
Silk Carpet	9.5	2.69	16.13	20.29	23.6
Handloom Products	35.97	35.59	34.45	63.8	73.78
<b>Total</b>	<b>263.64</b>	<b>264.64</b>	<b>298.07</b>	<b>275.54</b>	<b>265.77</b>

Source: Indians Silk Export Promotion Council

<b>State</b>	<b>2020-21</b>	
	<b>Target</b>	<b>Achmnt</b>
Karnataka	12600	11292
Andhra Pradesh	8208	8422
Telangana	310	309
Tamil Nadu	2300	1834
Kerala	17	7
Maharashtra	475	428
Uttar Pradesh	354	316
Madhya Pradesh	80	47
Chhattisgarh	535	300
West Bengal	2520	872
Bihar	58	64
Jharkhand	2904	2185
Odisha	160	102
Jammu & Kashmir	142	80
Himachal Pradesh	45	20
Uttarakhand	25	25
Haryana	1	1
Panjab	4.5	1
Assam	5519	5462
Ar. Pradesh	67	43
Manipur	542	327

Meghalaya	1245	1213
Mizoram	113	43
Nagaland	649	264
Sikkim	2	0.08
Tripura	125	112
<b>Total</b>	<b>39000</b>	<b>33770</b>

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# **Servant Leadership and Work Engagement for Talent Management in Hospitality Industry: A Systematic Literature Review**

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## **Abstract:**

Within the practice of the hospitality industry where servant leadership and work engagement are crucial, talent managing strategies have started to become very important in helping organizations to succeed. Out of different strategies, the application of such leadership styles as servant leadership has been worth giving attention. This systematic literature review explores the relationship between servant leadership, and work engagement for talent management in the hospitality sector. A total of 54 studies relevant to the research were found in a database search with Scopus published between 2010 and 2024. The review identifies key themes, including the impact of servant leadership on work engagement, the mediating role of work engagement, and the contextual factors influencing the effectiveness of servant leadership. The result of the study proves that servant leadership promotes work engagement, which finally makes it easier to overcome the process of talent attraction, developing, and keeping workers.

**Author keywords:** Servant Leadership; Talent Management; Work Engagement; Hospitality; Systematic Literature Review; SLR

## **1.0 Introduction**

The hospitality industry works in an attractive but extremely competitive niche with a lot of players vying for the attention of their customers with a lot of labour costs to deal with as well (Zia et al., 2023). In these circumstances, organizations of the industry have to ensure the competence of their workers and employees through talent management which is in the form of attracting, nurturing, and retaining the expressed skilful people who can contribute to great service delivery and business success.

Servant leadership, an employee-oriented way transcending, listening, empowering, and ethical leadership, serves as the basis for fostering a loyal and high-performance workforce in

hospitality organizations. It has come to be viewed as a productive leadership approach. It is defined as “an integrative and comprehensive practice that starts with the intent to serve and that flows into effective leadership practices to empower people, build sustainable organizations, and create a human society” (Coetzer, 2018). It can be perceived as the natural and behavioral law of leadership.

Additionally, work engagement, known as “a positive and fulfilling job-related state of mind” not only has a personal but also an organizational aspect (Sonnetag et al., 2010). The hospitality industry operates in a dynamic and competitive environment characterized by high customer expectations and labor-intensive operations. In this context, effective talent management is essential for organizations to attract, develop, and retain skilled employees who can deliver exceptional service and drive business performance (Asag-Gau and Van Dierendonck, 2011).

Despite growing interest in the concepts of servant leadership and work engagement, their interplay within the context of talent management in the hospitality industry remains relatively underexplored. Therefore, this paper seeks to address this gap by conducting a systematic literature review to examine the relationship between servant leadership, work engagement, and talent management in hospitality settings.

## **2.0 Review of Literature Review**

### **2.1 Servant Leadership in the Hospitality Industry**

Servant leadership in the hospitality industry accentuates that the mandate of the leader is to attend to the needs of the team members and the guests rather than concentrate on hierarchical authority (Zia et al., 2023). Through this leadership approach, leaders stress cultivating the employees’ first philosophy by ensuring their growth, wellness, and development as happy and contented staff (Gui et al., 2021).

Leaders practicing servant leadership in the hospitality industry promote among their people an atmosphere of trust, collaboration, and empowerment (Murari and Gupta, 2012). They listen to their team effectively, understand their problems, and offer them advice on how best to attain their desired results. Through the process of manifestation by example, servant leaders of the hospitality industry encourage the staff to provide exciting services and creative experiences for the guests.

Another crucial aspect is that servant leaders of the hospitality industry serve to ensure work engagement for employees through open communication (Welch, 2011), positive interaction (Bakker et al., 2011), and participation in the decision-making process (Yamaner, 2019). They keep a high priority on employee development through training, mentorship, and



reward programs that aim to have motivated and committed employees who are ready to face different challenges and drive the financial success of the business.

## **2.2 Work Engagement and Its Determinants**

Work engagement refers to the enthusiastic and motivated state of mind experienced by employees who are fully immersed in their work (Kahn, 1990). Several determinants contribute to work engagement (Cheng and Chen, 2017), for example, job resources, organizational support, job characteristics, work-life balance, and employee well-being.

Some aspects of job resources include providing sufficient support to employees such as autonomy, social support, feedback, and chances for skill development to enhance work engagement by helping them to challenge themselves and to grow professionally. Some aspects of organizational support include supportive leadership, open communication, and a positive organizational culture that enables work engagement by improving the working environment so that employees and staff are appreciated, and appropriately linked to the organization's mission and values. For job characteristics, work engagement is enhanced by ensuring the meaningfulness and diversity of tasks, growth opportunities, and a sense of achievement aligning their skills and interests. Further, the equilibrium of work and personal life promotes work engagement and reduces job burnout by allowing employees to remain refreshed, enjoy healthy lives, and complete their responsibilities outside of work. Furthermore, employee well-being is critical in building a strong basis for work engagement.

In general, fostering work engagement covers the territories of several factors, which finally leads to a supportive, motivational, and challenging environment for the employees.

## **2.3 Talent Management Practices in Hospitality Organizations**

Usually, talent management stands for a complex set of strategies for recruitment, retention, and employee development in an increasingly fierce competitive landscape (Kravariti et al., 2021). In hospitality organizations, such processes involve the hiring of individuals with not only relevant skills but also an assured love of customer service. In hospitality organizations, programs of talent management are designed to develop both technical skills and soft skills such as communication and problem-solving. There are career development paths that are designed to provide clear advancement opportunities to promote employee loyalty and longevity. Such organizations have performance management systems that ensure continuous feedback and rewards, stimulating staff for excellence. Furthermore, cultivating a culture of acceptance and diversity creates a friendly environment for employees and staff from various backgrounds. In general, well-performing talent management practices in the hospitality industry are aimed at realizing the full potential of human capital, creating the best service quality, and ensuring long-term industry competitiveness (Sin et al., 2021).

## **3.0 Research Methods**

This study has employed a systematic literature review (SLR) approach. SLR employs a

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rigorous process to gather, assess, and synthesize existing research. The search strategy usually involves identifying relevant databases such as Scopus, keywords, and inclusion/exclusion criteria. This SLR was based only on using the database of Scopus.

A total of 54 studies relevant to the research were found in a database search with Scopus published between 2010 and 2024. Selection criteria ensure the inclusion of studies meeting specific objectives and quality standards. These criteria were limited to the subject areas of ‘Business, Management and Accounting’ and ‘Social Sciences’ for journal articles published in the English language.

Data extraction involves extracting key thematic information from selected studies. Finally, reproducibility is prioritized, with documentation of search strategies, selection criteria, and data extraction processes to facilitate peer review and replication.

## 4.0 Data Analysis

### 4.1 Descriptive Analysis

Fig. 1 presents data on publications related to servant leadership and work engagement for talent management in the hospitality industry, which is distributed across different years between 2010 and 2024, along with the corresponding frequency of publications for each year. The highest frequency is 14 for the year 2023, followed by 9 for the year 2022.

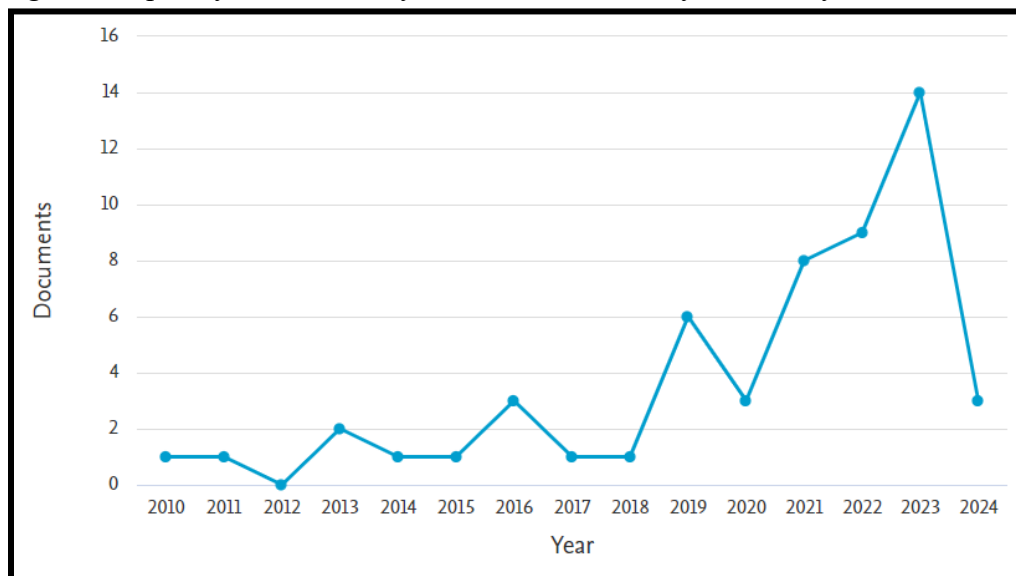


Fig. 1. Servant leadership publications by year.

Table 1 presents the frequency of publications categorized by subject area. The subject area of ‘Business, Management and Accounting’ has the highest frequency with 40 publications following closely behind ‘Social Sciences’ with 37 publications. Table 1 indicates the relative interest in each field within the context of the research being considered.

Table 1: Publications by Subject Area

Subject Area	Frequency
Business, Management and Accounting	40
Social Sciences	37
Arts and Humanities	4
Decision Sciences	4
Economics, Econometrics and Finance	4
Environmental Science	4
Energy	2

Table 2 lists several journals along with their frequency of publishing research articles and their impact as measured by Source Normalized Impact per Paper (SNIP). These journals are indicated to be frequent publishers of research having known impact factors that signify their influence in their fields.

Table 2: Journals that frequently publish research.

Source Title (Subject Area)	Frequency	Impact (SNIP 2022)
Int. Journal of Contemporary Hospitality Management	3	2.074
International Journal of Public Administration	2	1.186
Management Decision	2	1.345
Review of Public Personnel Administration	2	2.961
Sustainability Switzerland	2	1.198

SNIP: Source Normalized Impact per Paper

Table 3 presents the top five keywords frequently used in the research along with their corresponding frequencies, indicating how often these keywords appear in the studies.

Table 3: Top Five Keywords frequently used in the research.

Keywords	Frequency
Work Engagement	17
Servant Leadership	16
Leadership	9
Civil Servants	4
Employee Engagement	4

Table 4 displays the frequency of countries involved in the research involving servant leadership, work engagement, and talent management in the hospitality industry. This table indicates that researchers from Malaysia and the United States were involved the most frequently followed

closely by China, Italy, and the Netherlands. The table provides a snapshot of the geographic distribution of the research contributors.

Table 4: Countries involved in the research.

Country	Frequency
Malaysia	5
United States	5
China	4
Italy	4
Netherlands	4
Turkey	3
Thailand	3
South Africa	3

#### 4.2 Thematic Analysis (200 words)

A thematic analysis of these topics could reveal several key themes and their connections. The breakdown of potential themes is as follows:

- **Leadership Styles and Impact on Engagement:** There are multiple mentions of leadership styles such as servant leadership, transformational leadership, authentic leadership, and empowering leadership. Analysis of how these leadership styles influence work engagement, work motivation, and organizational outcomes could be a significant theme.
- **Work Engagement and Working Environment:** Several topics touch upon work engagement, work-life balance, and the impact of the working environment on employee well-being. An exploration of factors to create supportive working environments can contribute to a high level of work engagement.
- **Talent Management and Development:** Topics related to talent management, workforce development, learning and development, and leadership development suggest a strong focus on strategies related to human capital management and their impact on organizational performance.

These themes provide a starting point for studying these thematic topics. Each theme could be further explored through a systematic review of relevant literature and empirical studies to uncover patterns, relationships, and implications for theory and practice.

## **5.0 Results and Discussion:**

Research shows an upward trend indicating a growing interest in exploring the relationship between servant leadership and work engagement within the context of talent management in the hospitality sector (Fig. 1). The distribution of Table 1 underscores the multidisciplinary nature of the topic, emphasizing its relevance across various academic fields. Table 2 highlights journals that frequently publish research on servant leadership, work engagement, and talent management for disseminating research findings and shaping scholarly discourse in the field. Further thematic areas provide valuable insights for further exploration. Understanding the interplay between leadership styles, work engagement dynamics, and talent management practices is essential for advancing theoretical frameworks and informing practical strategies within the hospitality industry.

## **6.0 Implications (50 words)**

Hospitality managers can benefit from adopting a servant leadership approach, prioritizing the needs of their employees, and fostering a culture of empowerment and support. Managers can enhance retention rates, as well as the workers' motivation by providing them with the means to build supportive relationships that ensure the right work-life balance and offer their team extensive opportunities for professional growth and development. Through this culture of learning opportunities, managers can unlock as many career advancement options as possible for their employees, thus creating a winning and growing team.

## **7.0 Conclusion (100 words)**

The present systematic literature review synthesizes valuable data regarding servant leadership, work engagement, and talent management in the hospitality industry. The study constitutes the argument that incorporating principles of servant leadership serves the purpose of work engagement and talent management practices. These findings are both theoretically important and practically applicable to the use of servant leadership styles in the work engagement strategies and talent management practices of the hospitality industry.

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## Individual Accountability in Non-Profit Organizations

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### **Abstract:**

The purpose of this article is to present a framework to understand the significance and role of Individual accountability in the non-profit organizations. Individual accountability is a key factor in determining the overall success of an organization. In a working environment, the individuals are accountable to someone or other. Non-profit organizations that serve their communities, completely depends on individual accountability. Their success centres on the value they place on ethics, efficiency, and teamwork. Encouraging individual accountability involves trust among stakeholders and the public, while also emphasizing transparency. Having independence in the workplace can be extremely advantageous for employees. It not only boosts their engagement and motivation, but also fosters a culture of creative thinking and innovation. Moreover, it offers chances for professional advancement and improvement. Individual accountability can significantly enhance the success, collaboration and dedication of non-profit organizations.

**Keywords:** Key factor, individual accountability, success, trust, workplace

### **Introduction:**

Individual accountability is defined as a state in which an individual feels a sense of obligation to a situation or event (Cummings & Anton, 1990; Dose & Klimoski, 1995).

“Individual accountability is the measurement of whether or not each group member has achieved the group’s goals. Assessing the quality and quantity of each member's contributions and giving the results to all group members” (Johnson, Johnson, & Holubec, 1998).

Accountability is understanding one's obligations, following ethical principles and organizational policies, and being prepared to address the consequences of one's actions and conduct, whether positive or negative. Accountability promotes trust, hence building unity and

interdependence among individuals. There is a positive correlation between high levels of accountability and the trust and respect that individuals receive from their colleagues and others.

Individual accountability is a crucial aspect of operating a prosperous enterprise, particularly for non-profit organizations dedicated to assisting their communities. Each member has an obligation to adhere to ethical principles, carry out their assigned tasks, and contribute to the group's objectives. Personal responsibility promotes confidence and reliability, which are essential for maintaining the backing of stakeholders and the general public which establishes a foundation for transparent and sincere activities.

Additionally, it empowers individuals to assume accountability for their tasks, encouraging active participation, innovative concepts, and continuous development. The members of the team consistently identify and address issues by assuming accountability for their actions and decisions. This enhancement enhances the company's resilience and adaptability. Establishing unambiguous channels of responsibility facilitates the management of conflicts and risks, enabling the organization to confront issues with integrity and confidence. Personal responsibility is not merely a collection of regulations; it is also a mind-set that aids non-profit organizations in cultivating a culture of exceptional performance, collaboration, and dedication. It is highly possible for individuals to acquire accountability as a skill and a lifestyle.

Individual accountability entails taking responsibility for one's acts and skilfully handling the consequences, whether they are favourable or unfavourable. This involves acknowledging one's mistakes, correcting them when needed, and extracting insights from them to avoid their repetition. Individual responsibility is essential for the success and effective functioning of non-profit organizations.

The primary objective of this firm is not to generate profit. The establishment of non-profit organizations (NPOs) aims to carry out specific projects or goals that enhance society, aid those in need, or support religious, educational, scientific, humanitarian, or other charitable endeavours. Non-profits possess a clearly defined mission or purpose that guides their actions and decision-making processes. This goal typically entails engaging in philanthropic endeavours for the betterment of society or a specific entity, rather than prioritizing financial gain for proprietors or shareholders.

Non-profit organizations frequently rely on assistance from funders, volunteers, and the general public in order to carry out their tasks. Individuals who donate their time, expertise, and experience, as well as those who contribute financial resources through gifts, finances, and fundraising activities, provide assistance. In relation to their financial objectives, non-profit organizations should prioritize transparency and accountability. In order to facilitate the understanding of the firm's operations by shareholders, the government, employees, and



benefactors, it is imperative to furnish them with pertinent information, including financial statements.

The level of achievement attained by a non-profit organization is positively correlated with the alignment of its goal and vision. On the contrary, numerous non-profit organizations hold the belief that their success is dependent on both their societal impact and financial profitability. The genuine success of the non-profit organization depends on how much progress they have made in pursuing their purpose and vision. The trustees and directors oversee the management of this charitable organization. They are responsible for overseeing the management of funds, making choices, and formulating a long-term strategy. A commitment to truthfulness is a fundamental expectation for individuals occupying positions of authority.

Non-profit organizations face a persistent shortage of financial resources. Despite limited financial resources, personnel, and supplies, all individuals employed by a non-profit organization bear the responsibility of identifying optimal strategies to achieve their objectives. Every person has the responsibility to display continuous dedication to the shareholders, members, workers, and community they serve. This facilitates the acquisition of accurate information and the establishment of trustworthiness, while also ensuring the transmission of accurate information and a methodical response to their feedback. Following societal norms and refraining from engaging in any conflicts of interest that could harm the organization's values and reputation are crucial considerations.

In instances of adversity, individuals bear complete accountability, possess the capacity to derive lessons from their errors, and want to avoid repeating these errors in the future. The implementation of the decision-making process is crucial for ensuring benefits for the organization, its customers, shareholders, and the broader community. The success of the non-profit organization depends on the individual's commitment to assuming accountability for their activities, ensuring its overall success.

### **Objectives of the study**

This study aims to

1. promote the values of individual accountability among volunteers and workers for the betterment of the organisation.
2. build trust and good rapport through accountable practices.
3. explore the relationship between the individual accountability and the optimal performance of non – profit organisations.

### **Review of Literature:**

According to Geller (1998), behaviours associated with individual responsibility exhibit distinct characteristics as they are self-directed and lacking external accountability mechanisms.

Cummings and Anton (1990) suggest that acts characterized by self-direction exhibit greater reliability. The fundamental concept is that individuals who perceive a personal obligation to adhere to organizational regulations will engage in actions that enhance the effectiveness of these regulations, even in the absence of explicit instructions or external incentives.

Moreover, research indicates that individuals who perceive themselves as personally accountable for adhering to organizational regulations exhibit heightened concern for the caliber of their output (Hackman & Oldham, 1976). According to Redding (2004), it is of utmost significance to acknowledge and assume accountability for one's actions. Due to the multifaceted nature of accountability, the author directs their attention towards the individual and internal dimensions of accountability.

According to Lebow and Spitzer (2002), accountability refers to the act of assuming responsibility for one's acts and the subsequent outcomes they produce, encompassing those that impact individuals beyond oneself. The authors of this study, similar to Koestenbaum and Block (2001), have a keen interest in the concepts of freedom and responsibility.

Individuals who demonstrate a strong dedication to their personal growth are those whose personal advancement is contingent upon their obligations. To effectively support the organization, it is essential for individuals to possess up-to-date information and maintain their skills in a current state. This would enable individuals to assume complete accountability for their acts, irrespective of their positive or negative nature. The following tactics facilitate an individual in cultivating a greater sense of accountability:

### **Strategic Vision and Mission**

Individuals who are highly accountable possess well-defined objectives and goals for the expansion of their firm. They prioritize all factors that contribute to the achievement of their objectives. The individual's strategic vision for a promising and prosperous future serves as a driving force, compelling them to engage in active and uninterrupted work. This efficient approach enables them to prioritize progress, advancement, and growth for the improvement of their organisation.

### **Responsibility:**

**“A duty which becomes a desire will ultimately become a delight” - George Gritter**

Upon accepting the employment, the individual will assume full responsibility for the commitment and will whole-heartedly devote themselves to finishing the task at hand, irrespective of the circumstances. They will successfully complete the task. Although the remuneration and other benefits provided by non-profit organizations are comparatively lesser, these individuals remain committed to performing at their highest level regardless of the situation. The presence of such employees will contribute to an enhanced reputation of the

organization among society. This is due to the fact that personnel of this nature will promptly and confidently accomplish the prescribed duty without any hesitation.

### **Accountability:**

When faced with unforeseen circumstances, these individuals demonstrate a willingness to assume accountability and utilize their expertise and knowledge to improve the situation. Individuals consistently assume accountability for their own acts, and in instances where outcomes deviate from their intended course, they promptly acknowledge their own responsibility. Individuals do not waste their time by participating in non-essential activities; instead, they allocate their time towards tasks that contribute to the attainment of the organization's goals. In contrast, non-profit organizations exhibit an aggressive strategy by preventing from time wastage and refraining from attributing flaws to others. Instead, they assume personal accountability for their actions.

### **Punctuality:**

Being an individual necessitates the possession of various attributes, among which timeliness stands out. Furthermore, showcasing the dedication and passion towards the profession can facilitate the climb to the highest levels. Punctual workers consistently prioritize efficiency by arriving promptly for work and exerting maximum effort to finish their jobs within the designated timeframe, ultimately benefiting the firm. As a non-profit organization, they seek a someone who is genuinely committed to accomplishing their goal.

### **Strategic planning:**

The individual has exceptional strategic planning skills to effectively address any challenges that may arise during the company's expansion. When confronted with difficulties, individuals do not passively await the completion of others' duties; rather, they actively engage in the task and attempt to accomplish it by meticulous planning and innovative strategies. In non-profit organizations, these individuals contribute to the long-term viability of the organization.

### **Self-control**

These individuals do not exhibit any emotions but uphold a sense of self-regulation in order to achieve their goals. They conscientiously execute their duties in order to effectively achieve the objectives of the organization. They engage in intense collaboration to accomplish their objectives, displaying steadfast care for every individual involved. They consistently prevent individuals from experiencing disheartenment or defeat along their journey. The influence of emotions on an organization's growth can be detrimental, as it has the ability to impede the firm's production and impair the attainment of its objectives. Within a non-profit organization, there are individuals who exhibit a lack of enthusiasm and instead maintain composure in order to effectively accomplish the organization's goals.

## **Decision making**

Making judgments can be challenging due to their significant financial implications and inherent immutability. Hence, it is imperative for an individual to do the necessary measures to make a decision. The growth of an organization can be negatively impacted by a single poor decision. Therefore, individuals involved in decision-making processes should possess the ability to anticipate and predict future outcomes. By doing so, they can make informed decisions that contribute to the growth of the company.

Prior to taking action, it is crucial to seek input from colleagues within the organization. Individuals who are accountable are more likely to make sound decisions, as a single poor decision could impede the organization's progress. In non-profit organizations, where resources are scarce, it is imperative to exercise caution when making choices, particularly regarding financial matters, in order to ensure the organization's growth and sustainability.

## **Motivation**

**“Good things comes to those waits, but only those things left by those who hustle”- Abraham Lincoln**

These individuals are the ones who inspire and encourage others. Individuals with a strong sense of responsibility can efficiently accomplish their obligations as long as they make efficient use of the resources available to them. They motivate others to accomplish their responsibilities and furnish them with the necessary resources to attain their goals and exert a favourable impact, ultimately benefiting the organization in the long term by improving interpersonal collaboration. These types of organizations have a positive impact on the development of non-profit organizations, enabling them to attain higher levels of success.

## **Humility**

Individuals who exhibit humility exhibit characteristics of integrity and display a deep reverence for others. They avoid engaging in self-promotion or teasing others. Individuals highly value the act of actively listening to others and extracting knowledge from their opinions. Humility requires acknowledging one's imperfections and demonstrating a willingness to acquire knowledge from others with the aim of personal growth. This characteristic demonstrates an individual's degree of maturity and perseverance.

## **Attitude**

**“Any fact facing us is not as important as our attitude toward it, for that determines our success or failure”- Norman Vincent Peale**

Despite experiencing challenges, several individuals are capable of attaining success due to their optimistic outlook towards their chosen career. The ability of these optimistic individuals to establish positive relationships with others and actively contribute to the expansion of the organization and increase the productivity renders them a great resource for the company. Positivity not only benefits the individuals within the enterprise, but it also has a positive impact on the overall corporation. Positive persons play a crucial role in enhancing the non-profit organisation.

## **Conclusion**

In conclusion, the study highlights the significance of embracing traits such as strategic vision and mission, responsibility, punctuality, self-control, motivation, optimism and humility for achieving success through individual accountability. By cultivating these attributes, one can effectively enhance the impact of individual accountability and contribute to the success and sustainability of non-profit organizations.

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## **A Research Study Paper on a Strategic Role Played by Employer Branding in Retaining Talent and Improving Excellence**

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### **Abstract:**

This study delves into the possibilities of a strategic role played by Employer Branding in retaining talent and improving excellence in education sector especially in private and state universities in Pune. Workplaces in the world today are facing a lot of uncertainties and in such a world, sustaining and maintaining talent is the biggest challenge. This paper evaluates the strategic role of Employer Branding and its effect/ impact on the people working in different universities of Pune where the data was collected using a questionnaire for a pilot study from 31 participants. The research paper highlights the importance and the strategic role played by employer branding analyzing the views presented by participants under the study. The paper explores various dimensions of branding strategies including its necessity and the change it can bring in the ranking of any university today. The conclusion of the study definitely throws greater light on the need for creating a good employer brand not just to have good talent continue working with but also to have better talent aspiring to join to add to the excellence. Additionally, the study also states the researcher's desire of a possibility of creating and suggesting an Employer Branding model specifically for education sector, based on the suggestions presented by the participants, for a future research.

**Keywords:** Employer branding; retention; excellence; strategies; education sector; Universities

### **Introduction:**

The world is full of uncertainties today, and surviving and sustaining in this volatile world is a major challenge faced by all. Today businesses face many challenges and are searching sustainable solutions. Some businesses which are doing great and comfortably sailing through are the ones which have a great brand associated with them. Google is one such example for which everyone aspires to work. Similarly, in each sector there are some organisations which have become a brand for whom retaining or getting talented employees is never a challenge, rather they are the ones where there is no dearth of aspirant talent. Employer Branding is a

concept in human resource management, originated from marketing domain, which helps retaining talent in an organisation giving the employer an edge above the competition. Employer branding also helps in improving productivity and excellence in overall growth of the organisation. The term employer branding was coined by Simon Barrow in 1990. It is defined as a representation of any organisation as a brand to attract or retain talent.

There has been research done in the field of employer branding and its usefulness in various sectors like automobile, IT, product or service industry. Researchers have researched these industries and presented papers on the talent management strategies applied in these domains. Education is one such domain where not much research is done. There is a need to understand employer branding helping in retaining talent and improving productivity and excellence in a university or an institute. With the advent of NEP 2020 with its implementation, the PM wishes to make Indian universities incomparable and directly in competition with the reputed foreign universities. In such a scenario finding the role played by employer branding to manage and retain talent in private and state universities is necessary. The AICTE, MHRD and UGC, the higher Education Regulatory Bodies in India, have been granting university status to many autonomous and affiliated institutions. Therefore, it is essential to research the effectiveness of the tool of employer branding and its utility in the education sector. Pune, the Oxford of the East is an education hub. Pune has approximately 26 plus private and state universities. Employer Branding strategies work to retain and manage the talent which would help universities acquire the best or the most sought after place of work for the people in the noble profession of teaching. The available literature was reviewed and that's where the research gap in the education sector is seen. There have been very few studies performed in the education sector, specifically at the university level. The present study is based on a pilot study performed on 31 samples.

### **Literature Review:**

Employer Branding has been used as a strategic tool in talent management. It has been applied not just to retain talent but also to attract new talent to work for an organisation. There have been various aspects of employer branding strategies used by organisations to manage the talented workforce.

Sarah A. Lybrand in her article '**What Is Employer Branding and How Can It Grow Your Business?**' published in March 2018 writes, "In today's increasingly competitive job market, a positive employer brand is critical, without one, hiring and retaining the best employees becomes challenging — and costly. You need talented, leadership-bound workers to drive your business forward, and the best way to find them is to cast the impression that your company is a great place to work." Similarly, there are many researchers who have been writing about the importance of a strong employer brand, it would be really difficult to retain the talent and get prospective talent to work for an organisation. Surveys by popular companies like Glass

door or service providers like LinkedIn have mentioned that losing a talent is equal to losing an investment of about 6-8 months' salary of an employee. Some of the surveys, the participants have strongly recommended having a strong employer brand. If a company has a strong employer brand it does not just save a lot of money in re-recruiting but also a good team which can contribute effectively in the growth of any organisation. A strong employee base is required for a company to grow and employer brand is a powerful tool to have them stay in the company and have a longer association. This in turn enhances and improves excellence and productivity of the organisation. A talented workforce gives an organisation an upper-hand in every aspect.

Further to add to the above findings that employer branding plays an important role in retaining talent in the organisation, a lot of advertisements on social media are also a proof to it. There have been many social media influencers and promoters who have been promoting organisations using a strong employer brand to provide a pool of good talent out of many job seekers. Many surveys have documented that approximately 56% of employees have strongly put fourth their views that they prefer working for a good brand over working for a company with a bad reputation with a higher pay.

Thus the strategic role played by employer branding and a need to have a strong brand created, is a need of the time. With the spread of internet and social media revolution there is no stopping of any bad incident happening, or for that matter any incident which would happen in an organisation spreads like a wild fire in seconds. In such a dynamic and volatile world having retained the talent and managing the good talent is definitely a huge task for organisations.

### **Methodology:**

The study is performed using a questionnaire circulated among 31 participants from both private and state universities in Pune. The pilot study performed using a questionnaire carrying 25 questions in all. The responses are analysed and based on that the finding and conclusions are made for this study. The responses are quite elaborate and some of them do represent the need for a good brand. There are mixed type questions used in the study, some are direct questions and some are indirect types, there are some questions which have Linkert scale used (1 – 5 points) for the responses and some are subjective type questions. All the 25 questions covered the topic comprehensively and the data collected has generated good positive as well as negative responses.

### **Analysis and Findings:**

The questionnaire upon analysis has charted many findings in favour of the importance of employer branding in the education sector. The first 10 questions based on personal information of the 31 participants of which the maximum 42% respondents are from 43 – 53 yr. age group and the minimum 16% are from 25-23 age group and 22.6 from 35 – 42 and the rest 19.4% from above 55 age groups. The maximum participants are from middle age workgroup who



have spent a good 12-20 yr. in a university and have quite considerable amount of experience to have given their opinion upon the concept of employer branding and its importance. About 35.5% belong to private university and 64.5% belong to state university. The majority of the respondents 74.2 % work as a permanent faculty, 16.1% are Full-time Adjunct faculty and 9.7% work as visiting faculty. Majority of those work as Assistant Professors and Associate Professors having an additional administrative portfolio of either the Head or Dean. Major part 61.3% are PhD holders and about 35.5 who are post graduates with many pursuing PhD. About 3.2% are Post PhD or Fellowship holders. The personal information provided by the respondents gave a good understanding of the ingenuity of the data.

The remaining 15 questions focused towards the objective of the study, the strategic role playing of employer branding in education sector. About 55% of the respondents know about employer branding through various sources like, books, HR events, working in HR firms, Social media like LinkedIn, friends or from discussions and deliberations among other work groups. These responses prove that they have significant exposure to the concept and they are involved in the administrative teams at their respective universities or institutions. Remaining 45% did not have knowledge about employer branding from which it can be inferred that there is a need to create the awareness among many. Respondents who are associated with the HR background and the ones working at administrative levels do have knowledge as they are exposed to the concept through their work practices. The data also shows that there is a greater need for creating awareness about the employer branding in education sector among the younger respondents as they are the ones who are going to be more responsible for improving productivity and excellence in the organisation. The question on the meaning of strategic role playing, about 60% of the respondents mentioned that they know and understand the meaning. This shows that a majority of the respondents have a good understanding of the concept of strategic role playing and its application. This also shows that there is a need for creating awareness among many about the clarification of the concept and its usage. The question based on the importance of employer branding, about 78% of the respondents rated it at 4/5 on the scale. The higher rating on the scale shows that there is a greater need of the implementation of the concept and a lot of relevance and significance of the research topic. Especially in education sector there is not much cognizance of the term employer branding and universities have to really think about branding themselves to have a greater demand created in the minds of the aspirants. This also strongly indicates a greater need of exploring employer branding playing a role in retaining talent and improving excellence especially in the education sector.

With reference to the significance of the role employer branding plays in their respective institutions or universities, the respondents rated it at much higher level. Majority of the respondents rated it at 5 on the scale which signifies that they attribute a very higher significance to the employer branding, at the same time there have been about 8 participants have lower perception of the concept (rated below 3). This indicates a need for further research

to address the challenges they might have faced. A whopping 80% of the respondents opined by rating at 4 & 5 on the question of employer branding is helpful in enhancing performance of an institution or university. A greater majority endorses that employer branding influences the performance of the organisation. This strong endorsement of the respondents suggests that further research into the area would prove more valuable for the universities and it could also help in optimizing their efforts for better outcomes in terms of their ranking at the national level.

With reference to the second objective of the study of the retention of talent, the participants of the study opined very high. 25 out of 31 respondents rated at 5 for the question on the importance of retaining talent in the institutions/universities. The whopping majority of the respondents believes that retaining talent in the organisation is utmost important for an organisation as it clearly shows that there is a strong positivity in the idea of talent management. The talent retention plays a very critical and significant role in the performance of the organisation, improvement in productivity and acquiring excellence. This also suggests that institutions/universities should prioritise the same and have initiatives aimed at retaining talented faculty and try to attain it through good practices of giving advancement opportunities of professional development, fostering positive practices and encouraging better work culture. The following question on employer branding help in retention of talent, all except one participant marked 'yes' as an answer. This clearly indicates the benefit of employer branding and the contribution it will provide not only to retain talent but also to enhance excellence and improve productivity. With the sub question "if yes, how" a lot of advantages are also provided by them. Some more common benefits mentioned are reduction in turnover being major and others are creating healthy work environment, improving sense of belonging, status symbol, encouraging career advancement etc. The majority believe in the statement that employer branding definitely brings in lot of benefits and it drastically reduces attrition rate. The stronger consensus on the employer branding helping in retention of talent suggests that institutions/universities should promote employee engagement activities, employee progression plans, positive image building and promote organisational values among the faculty.

Another question on the relationship and interconnectedness among employer branding, retention of talent and improving productivity and excellence, 29 out of 31 respondents stated 'yes' as their response. Upon asking the sub question of how, there are several positive responses provided by participants. Their responses underscore the importance of holistic approach for the organisational success. There are some responses like the alignment in the three will enhance productivity and growth of the organisation, the three are at the core of any organisational growth, they are directly connected to culture of the organisation, the three together bring in positive work culture leading to improved productivity and excellence in the organisation. A question on the meaning of institutional excellence states various responses. According to the respondents' institutional excellence means quality improvement;

improvement in education and quality of students; research and innovation; efficiency and relevance; overall development etc.

A question, does institutional excellence matter, almost all the respondents have affirmative answer to it. A sub question to that, 'if yes, how' generated many reasons like it provides opportunity; garners and nurtures quality; fosters positive learning, adapts rapidly to the ever evolving world; leads to overall growth are some of the representative answers. They recognize the importance of the excellence and its impact. Most of the respondents, 29 out of 31 have rated importance of excellence at 4&5 on the Linkert Scale. A question on the relationship between employer branding and excellence about 28 out of 31 respondents have chosen 'yes' as their answer and the sub question 'if yes, how' fetched many affirmations. This clearly indicates a strong relationship between the two and highlights the importance of excellence as crucial for the reputation and success of the organisation. It also mentions that the positive relationship of the two fosters positive work environment and good reputation for an organisation.

## **Conclusion**

The conclusion based on the analysis and findings is evident that there is a distinct relationship between employer branding and talent retention and excellence. Therefore, the study confirms the role of employer branding and its impact on the overall development and progress of the institution/university. It also indicates the need to innovate a model specifically for education sector.

## **Future work**

The responses of the pilot study suggest that there is a need for further research in the field of education. The employer branding and its strategic role in retaining talent and improving excellence is required to be researched for improving productivity of the institution/university and a suitable model could be proposed for education sector.

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**“To Study the Role of Artificial Intelligence (AI)  
on Upgrading the ERP System”  
FACULTY: COMMERCE AND MANAGEMENT**

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## **ABSTRACT**

Integrating ERP systems with AI substantially benefits organizations, improving system performance, efficiency, and profitability. This research evaluates this integration's role and impact, aiming to enhance processes and facilitate accurate forecasting and decision-making. AI's analytical capabilities optimize processes by analyzing large datasets, ensuring adaptability, minimal errors, and high speed. Furthermore, AI augments ERP systems by automating processes, extracting, and organizing data, and improving forecasting accuracy and confidence. Beyond data processing, AI's machine learning abilities enable proactive decision-making, identifying market trends, and mitigating risks, ultimately fostering an organization's competitive edge.

**Keywords:** ERP, AI, Optimize Processes, Decision Making, Forecasting.

## **LIST OF CHARTS**

Chart 1 (Types of AI) 3  
Chart 2 (Type of ERP) 4

## **INTRODUCTION**

The development of technology has significantly impacted organizational efficiency, with the adoption of ERP systems dating back to World War II and evolving through MRP I and MRP II systems in the '60s and '70s. Despite their initial focus on material planning and warehouse control, expanding needs led to broader system applications encompassing finance, human resources, sales, and maintenance. However, these systems' insularity often resulted in time-consuming processes, high costs, and frequent errors. In today's global markets, the complexity of operations necessitates efficient ERP implementation for accurate analysis and decision-making, driving the importance of automation and integration to optimize business growth.

The rise of artificial intelligence (AI) introduces a paradigm shift, offering human-like reasoning and thinking abilities. While once confined to the realm of science fiction, AI has now become a ubiquitous presence in daily life, from smartphones to various industries. Businesses are compelled to embrace advanced technologies to enhance productivity and efficiency, leading to the integration of AI with ERP systems. This fusion not only boosts productivity and enhances human capabilities but also provides insights and predictive capabilities beyond human perception, facilitating crucial decision-making processes. Thus, this research endeavors to explore the transformative impact of AI on ERP systems, emphasizing the pivotal role AI plays in advancing these systems and driving organizational success.

## **SCOPE, IMPORTANCE, AND NEED OF STUDY**

Integrating AI with ERP systems raises questions about its impact on process optimization, forecasting, and decision-making. With AI's advanced data analysis capabilities, it holds the potential to enhance accuracy and minimize errors. This research aims to investigate the role of AI in upgrading ERP systems, crucial for ensuring reliable information and effective decision-making processes.

## **CONCEPTUAL FRAMEWORK**

### **a) Artificial Intelligence (AI)**

AI refers to digital machines or computers performing tasks requiring reasoning and communication akin to the human mind. These systems possess human-like mental functions, enabling them to understand, analyze, problem-solve, interact with the environment, learn from experiences, make decisions, and exhibit creativity.

AI programs emulate human behavior and cognition, learning and applying knowledge to their actions. AI transforms machine behavior into human-like actions, achieving tasks with greater speed and precision than humans. It's termed "artificial" due to its efficiency surpassing human capabilities, offering a unique approach to problem-solving and behavior modeling (C. Schank, 1991).

**b) Application of AI**

1. In Electronic Commerce
2. In Education
3. In Lifestyle
4. In Navigation
5. In Robotics
6. In Human Resources
7. In Health Care
8. In Agriculture
9. In the Game
10. In Social Media
11. In Marketing
12. In Chatbots
13. In Financial Affairs
14. In Astronomy
15. In Data Security
16. In Transportation (Biswal, 2023).

**c) Importance of AI**

AI replicates human abilities like understanding, reasoning, learning, and analysis with superior capabilities in software, applicable across all sectors. With the exponential growth of data from humans and machines, AI becomes crucial for analyzing and interpreting vast amounts of data to make informed decisions beyond human capacity (Gartner, 2019).

**d) Types of AI**

Types of AI based on capabilities and functionalities:

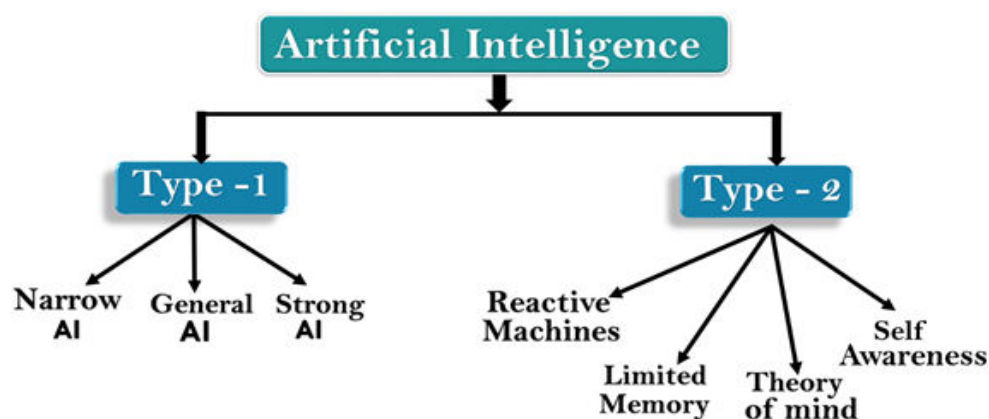


Chart 1 (Types of AI)  
(javatpoint.com, n.d.)



### e) ERP System

ERP system is comprehensive software for optimal performance and efficiency of organizational processes. This system is the connection point of the company's processes, which collects data from multiple sources and presents it as a unit. And any rework is prevented. This system works in an integrated manner and connects and manages all parts of an organization.

The presence of such software in organizations is essential because it supports all aspects of the company such as financial management, supply chain management, human resource management, etc., and transparently manages the business process(Helmut et al., 2000).

### f) Type of ERP System by Development

Based on the needs of the companies and depending on their choice, the ERP system is divided into different types:

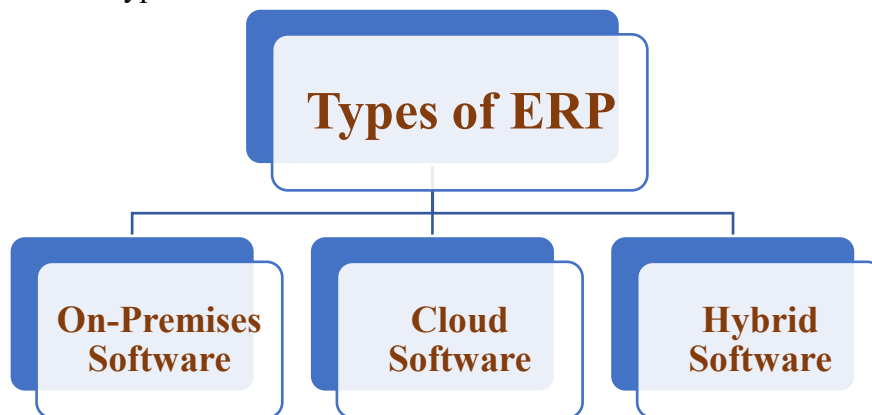


Chart 2 (Type of ERP)

(Dheeraj, n.d.)

### g) Optimize Processes

Process optimization is a systematic method aimed at improving processes to achieve maximum efficiency, effectiveness, productivity, performance, and quality while minimizing costs and waste. It is essential for driving transformation within companies(Sydle, 2023).

### h) Accurate Forecasting

Accurate forecasting is viewed as a strategic change aimed at enhancing performance, valuing the business, and fostering investment confidence(Lis et al., 2016). Accurate forecasting aims to prevent potential losses and increase profits, facilitating better decision-making and planning processes (Bornelind, 2019).

### i) Informed Decision-making

Decision-making involves identifying and selecting the optimal solution based on goals and available resources, with individuals or groups making informed choices regarding future

actions(Schoemaker & Russo, 2016).

## **OBJECTIVE OF STUDY**

- a) How does the combination of AI and ERP system help to optimize processes?
- b) Investigating the role of AI in ERP system on accurate forecasting and informed decision making.

## **REVIEW OF LITERATURE**

1. (Goundar, 2021), In chapter 6 of the the author asserts that integrating ERP systems with AI enhances process optimization, automates operations, and improves defect detection in material quality, reducing human error. Without AI, ERP systems are unable to detect such errors, risking energy and resource wastage.
2. (Biolcheva & Molhova, 2022) In this research the researchers concluded that integrating two AI and ERP systems makes intelligent ERP systems understand and identify project risks and facilitate their control. This approach enables companies to make more informed decisions with increased data, thereby reducing risk identification time.
3. (Yathiraju, 2022) In this research the researcher explores the role of cloud-based ERP systems and their integration with AI. Findings suggest ERP systems enhance company performance, while AI integration can further boost efficiency. Additionally, the study examines AI's impact on data security, proposing that AI integrated with cloud-based ERP can optimize security measures. Overall, the research expands theories regarding information technology integration.
4. (Haider, 2021) In this research, the researcher investigates the integration of AI into ERP system software and its profound impact on productivity. Despite rapid advancements in AI, companies have achieved enhanced productivity levels. The article explores AI's influence on various aspects of ERP, particularly in customer service, customer behavior analysis, sales forecasting, predictive analysis, and automatic feedback in online shopping platforms.
5. (Bergdahl, 2018) In this research, the researcher conducted a case study on the commercial value of AI in ERP systems for SMEs. Findings indicate SMEs are leveraging AI to cut costs, with consultants expressing optimism about AI's potential in ERP. SMEs prioritize process automation and efficiency when implementing ERP systems, aiming to increase profits and reduce expenses through AI-ERP integration.
6. (Bulgaria, n.d.) In this research the researcher highlights the necessity of integrating AI with ERP systems, citing AI as a pivotal technology in business. Concluding that AI should be employed within ERP systems to enable precise, real-time analysis of data from diverse sources, enhancing performance. This integration enables software programs to generate superior suggestions, actions, and solutions.
7. (Aktürk, 2021) In this research, the researcher investigates how integrating AI with ERP enhances business process efficiency and resource utilization. They explore AI's role in effective decision-making, planning, and integrating production and delivery processes. The study concludes that AI integration boosts profitability and competitiveness, reduces costs and time, and meets customer expectations more effectively.

## RESEARCH METHODOLOGY

The research under the title 'To Study the Role of Artificial Intelligence (AI) on Upgrading the ERP System' is based on secondary information, including books, articles, theses, newspapers, magazines, government documents, and reports. The study utilizes the descriptive research method to elucidate the concepts of AI and (ERP).

## HYPOTHESIS

### Hypothesis 1

H<sub>0</sub>: Combination of AI and ERP System does not significantly contribute to process optimization.

H<sub>1</sub>: Combination of AI and ERP System significantly enhances process optimization.

### Hypothesis 2

H<sub>0</sub>: The role of AI in ERP systems does not have a significant impact on accurate forecasting and informed decision-making.

H<sub>1</sub>: The role of AI in ERP systems has a significant impact on accurate forecasting and informed decision-making.

## LIMITATIONS

Limitations of this research due to the newness of the topic of AI, few valid articles were available for information. Also, due to the use of secondary data, there is a possibility of bias in the articles, which may have an indirect effect on the findings of the article.

## OBJECTIVES & FINDINGS

This study examines the impact of AI on enhancing ERP systems, exploring two main objectives: integrating AI with ERP to optimize processes, and evaluating AI's role in enabling accurate prediction and informed decision-making within ERP. Each goal will be addressed individually, leading to a conclusion on AI's role in improving ERP systems.

AI, mimicking human intelligence, learns from data and employs dynamic methods as needed. Human intelligence relies on categorized and historical data, resulting in weaker performance compared to AI's dynamic and data-centric approaches. Integrating AI with ERP enhances process optimization twofold. AI's speed and accuracy surpass human capabilities, significantly reducing errors. Process optimization entails enhancing efficiency, performance, and productivity while minimizing costs and waste. Eliminating redundancies simplifies workflows, improves communication, and enables adaptation to changes, signifying optimization. Integrating ERP with an organization's system breaks its isolation, leveraging ERP benefits such as cost reduction, increased accuracy, speed, efficiency, and productivity. However, at the big data level, AI is indispensable for data analysis. AI-ERP integration streamlines processes by clearing complex paths, ensuring accuracy, speed, improved communication, adaptability to changes, and increased flexibility. AI empowers ERP to analyze big data using dynamic methods, surpassing human capabilities.

AI, particularly through natural language processing, enables instant responses to

customer queries via chatbots, enhancing customer satisfaction and providing a competitive edge. This capability contributes to organizational performance by boosting customer satisfaction and competitiveness. AI's capacity to handle vast, real-time data can overcome ERP system compatibility limitations, fostering adaptability and cost reduction. With AI's ability to learn from new and updated data inputs, it continuously enhances its knowledge, effectively identifying solutions and optimizing processes, thereby increasing efficiency. AI aids ERP in uncovering and rectifying hidden inefficiencies.

Forecasting is a crucial skill for organizations, enabling them to achieve their goals. It requires planning, resource optimization, and risk prediction. AI is essential for accurate forecasting, as it can provide precise predictions efficiently and cost-effectively when integrated with ERP systems.

Without AI, ERP software systems face challenges such as handling big data collection, processing, and analysis, which are time-consuming and error prone. AI can automate these processes, extracting and organizing data from various sources efficiently. Techniques like reinforcement learning and simulation help address uncertainties and future fluctuations. Additionally, AI's calibration and validation techniques enhance forecasting accuracy and confidence levels.

As mentioned above, the role and importance of AI in ERP were discussed for an accurate forecast, we can examine the importance of AI to make an informed decision. AI enhances ERP systems by revolutionizing data processing and interpretation, enabling accurate insights for informed decision-making.

AI in ERP can process massive data and identify correlations and trends with its capabilities. This helps to make informed decisions based on comprehensive data. The impact of AI on the ERP system can go beyond data processing. AI's machine learning capabilities allow it to predict future outcomes and make proactive decisions by identifying market trends and analyzing risk factors. And by making these conscious decisions, it can create a competitive advantage.

## **CONCLUSION & SUGGESTIONS**

The article "To Study the Role of AI on Upgrading the ERP System" explores two key objectives. It concludes that integrating AI with ERP systems enhances process optimization within organizations. By rapidly analyzing big data with minimal errors, AI boosts efficiency and performance, reducing redundancies and resource wastage. Moreover, AI facilitates informed decision-making and accurate predictions by leveraging extensive information and analytical power. This integration also addresses weaknesses in ERP systems, enhancing overall effectiveness.

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**“An In-Depth Analysis of Staffing Solutions Companies' Growth and Adaptation in Pune's Diverse Industry Landscape, Encompassing IT, ITES, and Other Sectors”**

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**Abstract:-**

This research paper presents an in-depth analysis of the growth and adaptation strategies employed by staffing solutions companies in Pune to cater to the diverse industry landscape, including the IT, ITES, and other sectors. The study aims to explore the challenges, opportunities, and best practices associated with staffing solutions in Pune's dynamic business environment and provide insights into how staffing firms have expanded their horizons to meet the evolving needs of various industries. Through a combination of quantitative and qualitative research methods, the paper sheds light on the key factors influencing the success and sustainability of staffing solutions providers in the region.

**Key words:-**

1. An in-depth analysis of staffing solutions Companies.
2. growth and adaptation of staffing solutions Companies with IT and Non IT Sectors.
3. Pune's Diverse Industry Landscape for Staffing Companies

**Introduction:-**

**Industry Overview:-**

The growth and adaptation of the staffing solutions industry in Pune have had a significant impact on the local economy. Job creation, increased competitiveness, and the overall development of Pune as a hub for various industries are some of the key benefits. As the industry continues to evolve, it is expected to play an even more crucial role in shaping Pune's economic landscape in the years to come.

**Impact on Pune's Diverse Industry Landscape:-**

The impact of the growth and adaptation of staffing solutions companies on Pune's

diverse industry landscape, encompassing IT, ITES, and other sectors, can be analyzed from various perspectives. This includes job creation, increased competitiveness, and the overall development of Pune as a hub for various industries

• **Point wise work Summary:-**

In this research paper references have taken from research paper, articles, and Thesis, Staffing Company's website and called to gather information.

In Descriptive data analyst Research methods studied Point wise like as Total MIDC area in Pune city and nearby Pune city, total staffing companies in Pune and over all India, total Small, medium and large scale companies in Pune industrials area, Staffing companies payout details from client for their growth and adaptation.

Analysis for permanent and temporary recruitment with payout Charges wise for Pune location.

**Literature review:-**

Obtaining reliable statistics for the staffing industry is a challenge when creating a pitch deck for Investor or Client

But good market size of recruitment and staffing Companies in Pune or India  
The literature review is showing study regarding-

1. Global Staffing and Recruiting Market size in Pune and India
2. India staffing and market size
3. India Permanent staffing
4. India Temporary / Flexi staffing

23500+ staffing and recruitments companies are working in India.

Yearly growth 12% as per TIGI HR survey.

**1. Charges for Permanent Recruitment or Staffing:-  
(If candidate is on Client's Payroll)**

- 1.1. Executive/ Bottom level-8.33% to 10%,
- 1.2. Managerial level- 10 % to 12%
- 1.3. and above managerial level-12% to 14%

Or depends on agreement have made between Staffing Company and its client.

**Replacement for Client:** - One-time 90 days replacement or as per agreement

**Rights of Resumes/Candidate:** - 180 days (6 Months) (Job Warrantee)

**2. Charges for Contractual Staffing: Agency's Payroll:-**

- 2.1. Staffing Charges From Client:-**10% - 25% on Monthly CTC + Total Monthly CTC.
- 2.2. Employee Payment Policy:-** First Collect from Client, Then Pay to Employee.

- 2.3. **Salary Cycle** :- 1st to 30th/31st or 25<sup>th</sup> to 25<sup>th</sup> Each Month as per company policy
- 2.4. **Attendance Date (Client to Agency)** : 1st of Every Month or the Agency can set their attendance system too.
- 2.5. **Invoice Generate**:- on date 2nd or 3rd Every Month
- 2.6. **Invoice Payout** :- Within 2 days (4th or 5th of Each Month)
- 2.7. **Payment to Employee** : 7th or 8th Every Month
- 2.8. **TDS to be Deducted on Monthly Invoice**: 194 C @ 2 % on Basic Invoice Value or as per TDS rules.
- 2.9. **GST Will be Charged** :- As per the Laws Applicable (18%)
- 2.10. **Payment Mode** : RTGS or NEFT

### **Literature review on IT and ITES:-**

Pune is home to some of the top IT staffing companies in India for both national and international IT and ITS projects.

**Pune is currently second-largest IT center in India** , Staffing Companies achieve this by offering excellent hiring practices and employment solutions in Pune. As a result, a number of IT and BPO companies have expanded throughout Pune, making it comparatively simple to get employment. The employment market, which is constantly growing, connects candidates with opportunities that are appropriate for them and gives employers the ability to choose the best candidate for their position.

### **3. Literature review on Manufacturing, IT, Automotive, Education, Health Care, Banking and Finance, Electricals & Electronic, Construction and Civil:-**

As per literature review Staffing Solutions Companies conduct An in-depth analysis of Their clients unique Manufacturing and other all sectors requirements and develop their recruitment strategies that align with client business objectives. Staffing Companies also maintain a vast network of Manufacturing and other all sectors professionals, allowing Staffing Consultancy to quickly and efficiently connect their clients with top talent within 48 hours.

#### **➤ Objectives of Study:-**

1. To Gain an understanding of Pune's diverse industry landscape, including the key sectors such as IT, ITES, automotive, manufacturing, education, healthcare, startups, infrastructure, and hospitality. This will help identify the major players, employment trends, and talent needs in each sector.
2. To analyze the profiles of staffing solutions companies operating in Pune, including their services, expertise, client base, and market share. This will provide insights into the competitive landscape and identify the key players in the market.



3. To Investigate the growth and adaptation strategies adopted by staffing solutions in response to the evolving needs of different sectors. This will help identify successful practices and areas for improvement.
4. To understand the perceptions and experiences of clients and job seekers regarding the services provided by staffing solutions companies in Pune. This will help identify areas of improvement and potential opportunities for innovation.
5. To Compare the growth and adaptation of staffing solutions companies in Pune with those in other major Indian cities, such as Bangalore, Mumbai, and Delhi-NCR. This will help identify best practices and benchmark the performance of Pune-based companies.
6. To examine the role of technology and innovation in the growth and adaptation of staffing solutions companies. This will help identify the latest trends and practices in the industry and assess their impact on the overall growth of these companies.
7. To Analyze the impact of government policies and initiatives on the growth and adaptation of staffing solutions companies in Pune. This will help identify areas where government support can be improved to foster a more conducive environment for the industry.
8. To investigate the training and development programs offered by staffing solutions companies to their employees. This will help identify areas for improvement in employee skill development and retention.
9. To examine the diversification strategies adopted by staffing solutions companies to cater to different sectors and industries. This will help identify successful practices and areas for future growth.

➤ **Hypothesis:-**

These hypotheses aim to explore Potential influences that may impact the growth and adaptation of staffing solutions companies in Pune, encompassing IT, ITES, and other sectors. By testing these hypotheses through research, we can gain insights into the key success factors and strategies that staffing solutions companies should adopt to thrive in the competitive and dynamic industry landscape.

1. H1: Staffing solutions companies that have a strong understanding of the diverse industry landscape in Pune, including the specific needs of clients and job seekers in different sectors, will demonstrate better growth and adaptation compared to those with limited knowledge of the industry.
2. H2: Companies that establish strategic partnerships and collaborations with key players in the Pune industry landscape, such as major employers, educational institutions, and other staffing solutions providers, will experience higher growth rates and better adaptation than those that operate in isolation.
3. H3: Staffing solutions companies that offer a wide range of services, including temporary staffing, permanent placements, executive search, and specialized recruitment for niche sectors, will exhibit greater growth and adaptation compared to those that focus on a single service line.
4. H4: Companies that invest in employee training and development programs, fostering a

culture of continuous learning and skill enhancement, will have higher employee retention rates and better overall performance, leading to increased growth and adaptation in Pune's diverse industry landscape.

5. H5: Staffing solutions companies that leverage technology and innovative solutions to streamline their operations, improve candidate sourcing and selection processes, and enhance client engagement will demonstrate faster growth and better adaptation to the evolving needs of clients and job seekers in Pune's diverse industry landscape.

- **Research methods:-**
- **Descriptive data Analysis-**
- **Pune's Diverse Industry Landscape-**

<b>Pune's MIDC area</b>	
1. Chakan MIDC	6. Hadapsar MIDC
2. Bosari MIDC	7. Pimpri Chinchwad MIDC
3. Ranjangaon MIDC	8. Talegaon MIDC
4. Hinjewadi MIDC	9. Pirangut MIDC
5. Pimpri Chinchwad MIDC	
<b>List of MIDC near by Pune</b>	
Shirwal MIDC	Shikrapur MIDC
Kurkumbha MIDC	Jejuri MIDC
Indapur MIDC	Phaltan MIDC
Baramati MIDC	Khed Shivapur MIDC

<b>All sectors Companies Details in Pune</b>		
Type of Companies Pune	Quantity as per listed Pune	References
<b>Staffing Solutions Companies</b>	<b>Pune - 236+ (in India 23500+)</b>	<b>www.easyleadz.com</b>
<b>IT and ITES Companies</b>	<b>Pune - 245+</b>	<b>www.scribd.com</b>
Other Sectors/ Non IT Manufacturing, Automotive Education, Health Care, Banking	44200+ including Large Small & medium Scale Companies in Pune	www.ambitionbox.com

### ➤ **Conclusion:-**

Pune's industry landscape is diverse and offers numerous opportunities for growth and for staffing solutions companies. By understanding the specific needs of each sector and adapting their services accordingly, staffing solutions companies can thrive in this dynamic environment and contribute to the overall growth of Pune's economy.

Pune Industrial area is a very large area so there is a constant need of manpower so this it is a great opportunity for staffing solutions companies to growth or to grow there adaptation strategies for business grow.

In Literature review there is mention that “Obtaining reliable statistics for the staffing industry is a challenge when creating a pitch deck for Investor or Client.

The staffing solutions Companies should be aware of the pitch deck by presenting a good type of staffing solutions presentation or Budget or charges etc. Attract client or investor for investment and make truth worthy staffing solutions for Pune or for nation.

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Creating Talent Pool of Trained and Skilled IT Professionals to cope up with Emerging Needs of IT Industry Dr. Smita Ameya Wagh

<https://www.linkedin.com/>

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

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

[www.promptpersonnel.com](http://www.promptpersonnel.com) for mfg

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## **A THEMATIC LITERATURE REVIEW ON SUSTAINABLE SUPPLY CHAINS IN FMCG & THE WAY IT IMPACTS ORGANISATIONAL SUSTAINABILITY**

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### **Abstract-**

The FMCG sector within the Indian economy is regarded as the fourth largest in terms of its magnitude. It stands as a crucial catalyst driving the Indian economy forward. Occupying the fourth position in the Indian economy, this sector caters to nearly three million individuals nationwide. These products are prevalent among individuals of all social classes, irrespective of their age, socioeconomic status, or social standing.

Comprising food and beverages, personal care products, and household items, these three primary segments collectively represent 19%, 31%, and 50% of the total industry. The FMCG sector in India derives over 40% of its revenue from semi-urban and rural regions, with a significant impact.

In the context of Indian economy, the Fast-Moving Consumer Goods (FMCG) industry(source - <https://www.vccircle.com/>) holds a significant position, necessitating an adoption of sustainable practices. Incorporation of sustainability in FMCG sector not only tackles environmental issues but also presents possibilities for enduring economic and social advantages.

This Literature review-based research paper investigation concentrates on examining the sustainable supply chain (<https://bura.brunel.ac.uk/>) practices in Fast-Moving Consumer Goods that is FMCG sector in India. The systematic investigation talks about potential areas for enhancing sustainable supply chain management within the Indian FMCG industry and anticipates the future integration of sustainability initiatives.

**Keywords-** FMCG, supply chain management, sustainable ecosystem, organizational sustainability, SSCM, Sustainable supply chain management

### **Introduction –**

Before diving deep, let us understand, what the supply chain management (<https://www.dlsu.edu.ph/>) refers to? Supply chain management (SCM) is the integration of all activities associated with the flow and transformation of goods and services, from the supplier to the end customer. It involves the coordination of procurement, inventory management, transportation, warehousing, production, and marketing activities to ensure customer satisfaction at the lowest possible cost (Mentzer et al., 2018).

Organisations functions on a complicated network of interconnected operations in today's worldwide society. Supply chain management, or SCM, has become a vital field of study that guarantees the smooth transfer of products and services from raw materials to the final customer (Senkoto, Nthabiseng. "An Analysis of Critical Risk Factors of Sustainable Supply Chain in the South African Mining Industry", University of Johannesburg (South Africa), 2021). But this effectiveness must be weighed against the increasing need for organizational sustainability.

The idea of SCM and how it helps firms adopt sustainable practices are discussed in this research paper which is based on literature review.

Researcher has considered substantial number of research papers for this literature review.

Environmental and social responsibility have frequently been neglected in supply chains because of the conventional emphasis on profit maximization. This has given rise to worries about pollution, resource depletion, and unethical labour practices. More appropriate approach is sustainable supply chain management (SSCM).

A sustainable supply chain extends traditional supply chain management by integrating social and environmental considerations into every step of the process, from sourcing raw materials to product delivery and disposal. This includes practices that minimize environmental impact, promote ethical labor practices, and ensure resource efficiency throughout the supply chain (Carter & Ellram, 2015).

Long-term success and ecological footprint reduction are achievable for firms through the integration of environmental and social factors into supply chain management techniques. Customers are putting more and more pressure on the organisations they support to provide environmentally friendly goods and use ethical sourcing methods. Organisations face possibilities as well as obstacles because of this shift in consumer behaviour. Organizations can obtain a competitive advantage and lessen their environmental impact by implementing the sustainable supply chain management techniques. The intention of the whole study is to evaluate potential changes in Supply Chain Management (SCM) to promote sustainability

and ensure enduring success for organisations. The incorporation of blockchain technology may improve the effectiveness of supply chain management through ensuring secure data privacy, heightened visibility, and a lasting transaction record.

With the emergence of e-pharmacies and the demand for effective supply chains that are changing quickly, the healthcare industry has witnessed the evolution of supply chains to improve consumer experiences. Supply chain management has evolved through operational strategies, procedures, and technological advancements to meet evolving complexity and improve responsiveness, agility, and competitiveness. Supply chain management may use blockchain technology to track products, verify their authenticity and morality, and lower error rates.

### **Research Objectives -**

The focus area of this study is to identify study the scholarly work and get the thorough examination done and introduce the brand-new perspective and hypothesis. This will facilitate the future research in this critical field. By examining the available literature, the aim is to specify both the barriers and chances for incorporating sustainable practices along the supply chain. Furthermore, the study will scrutinize recent academic research on sustainable supply chains and utilize these findings to propose frameworks specifically designed for the Indian FMCG industry. Lastly, by utilizing this comprehensive examination, the study will formulate fresh perspectives and hypotheses to steer future inquiries into this pivotal domain.

### **Literature review related to Using Sustainable Supply Chain Management to Drive Change-**

If you look at Indian FMCG industry, sustainable supply chain practices such as involving suppliers, implementing reverse logistics for product returns, embracing green technologies, and creating eco-friendly packaging—represent significant areas for growth. Organizations can fulfil the increasing demand from consumers for sustainable products, improve operational efficiency, and lessen their environmental impact by incorporating these strategies.

By fostering collaborations, the FMCG sector in India can potentially create tailored training programs, address policy matters, and implement sustainable supply chain practices that will be advantageous for individual organizations and the FMCG sector in Pune and other regions. Through collaboration, it might be feasible to develop customized training programs, engage in policy issues, and institute sustainable supply chain methodologies that will benefit individual enterprises and the FMCG sector in Pune and other areas. The sector is required to actively participate in worldwide endeavors focused on promoting an environmentally aware and economically viable system by giving importance to sustainable supply chain methods, in accordance with its aspiration for a more sustainable prospect. This aspiration instigates transformation and steers India's FMCG sector towards a more prosperous and enduring future.

This collaborative endeavour possesses the capacity to lead to tailored training schemes, policy interventions, and the execution of enduring supply chain methodologies that not solely augment the performance of individual enterprises but also fortify the overarching sustainability of the FMCG sector in Pune and its environs. As the sector contemplates a future characterized by heightened environmental consciousness, it becomes essential for it to deliberate on sustainable supply chain protocols as an indispensable strategic component, aligning with worldwide initiatives advocating for a more environmentally friendly and economically viable environment. This overarching vision serves as a catalyst for transformation, guiding the FMCG industry in India towards a more sustainable and prosperous trajectory.

This vision serves as a compelling driver for transformation, guiding the FMCG sector in India towards a more sustainable and prosperous future. Moreover, a deep assessment has been conducted to analyse impact of effective supply chain management on the productivity of small and medium-scale organisations in India(ouci.dntb.gov.ua). Existing literature indicates that the presence of a performance assessment framework is crucial for the effective execution of environmentally responsible supply chain practices within the Indian manufacturing landscape. A scrutiny of sustainable supply chain practices that is SSCM in Indian FMCG industry underscores importance of companies prioritizing sustainability across their supply chains. A suggested framework takes into account environmental, social, and economic dimensions to Mold sustainable FMCG supply chains in India, integrating elements like environmentally friendly sourcing, sustainable packaging, and collaboration with stakeholders. This document represents a comprehensive evaluation of sustainable supply chain management practices, spanning various industrial sectors and geographical regions. It incorporates studies authored by experts in the field, including Mehmood Khan, Mian M. Ajmal, Fauzia Jabeen, and Shalini Talwar, who deliberate on the application of sustainable supply chain finances and AI that is artificial intelligence for innovative omnichannel logistics (Senkoto, Nthabiseng. "An Analysis of Critical Risk Factors of Sustainable Supply Chain in the South African Mining Industry" , University of Johannesburg (South Africa), 2021). Additionally, the critical assessment of GSCM (encyclopedia.pub) that is green supply chain management in the manufacturing sector in China is examined by Xuerou Sheng, Leping Chen, and others. Furthermore, the document explores the ramifications of supply chain management on organizational performance, particularly focusing on e-commerce entities in India and the heavy equipment machinery industry in Myanmar. Authors Pyi Kyaw S., and M. S. Reddy provide Experimental evidence and insights in relationship between supply chain management and performance.

The document also addresses significance of supply chain agility in the fast-moving consumer goods (FMCG) industry, the role of warehouse management systems on supply chain performance, and the prioritization of sustainable supply chain risk management practices using structural analysis-based approaches.( Ashish Kumar, Sunil Agrawal. "Challenges and opportunities for agri-fresh food supply chain management in India" , Computers and Electronics in Agriculture, 2023)



The FMCG sector is known for its dynamic market environment characterized by the frequent product launches, fluctuating demand patterns, and evolving consumer preferences. To achieve effective response to and adapt to these changes, supply chain agility is deemed essential for FMCG companies.

This necessitates:

Prompt sourcing and production capabilities: Swiftly respond to fluctuations in raw material prices or availability. (Stadtler & Kilger, 2008) Adaptable manufacturing processes: Modify production lines to accommodate new product variations. (Gunasekaran & Lai, 2015) Dynamic distribution networks: Effectively distribute products to meet evolving demand trends across diverse geographical regions. (Christopher & Gattorna, 2011)

Moreover, the articles delve into the exploration of sustainable supply chain management implementation across various industries. This includes the agricultural products supply chain focusing on improving resource and carbon emissions efficiency, as well as monitoring the quality of Agri-fresh food supply chain in the Indian market.

The examination assesses the influence of sustainable supply chain management on company performance, the link between lean, agile, and green practices on business competitiveness, and the enhancement of agricultural products supply chain management to lower carbon emissions.

In conclusion, the document encompasses a comprehensive array of research and insights into sustainable supply chain management, offering valuable contributions from various authors across the globe. Referred research material collectively address critical challenges, propose innovative strategies, and provide empirical evidence of the impact of sustainable supply chain management practices on organizational performance and overall industry development.

Sustainable supply chain management is crucial for responding to market changes and economic development, with a focus on environmental, economic, and social attributes. Yee, Foo Meow. "Green Purchasing Capabilities and Practices Towards Triple Bottom Line Performance: Moderating Effects of Institutional Pressure" , University of Malaya (Malaysia), 2023 [1][2].

## **Key Findings**

Efficient supply chain systems and workforce are essential in industries like apparel for distribution centre soundness [1].

The dairy industry in Andhra Pradesh, India, benefits from a developed supply chain model [2].

Legal systems in China need improvement to support supply chain management [2].

Inventory flow management aligns with customer demand and business objectives [3].

Food processing sector's logistics and supply chain management maturity is vital for information quality [4].

Automotive industry's sustainable supply chain management requires more research, especially on small-sized companies and social aspects [5].

New retail wave demands supply chain management model transformation and integration of online and offline operations [6].

Perishable product supply chains aim to maximize profit and reduce environmental impact [7].

Effective supply chain management correlates with profitability growth and operational efficiency [8].

Facilities Management supply chain optimization supports core business functions [9].

Addressing supply chain management problems can improve business performance in the food industry [10].

Agricultural supply chains for human consumption need stringent regulations and monitoring [11].

logistics operations lack empirical evidence, despite their positive performance contributions [12].

## **Conclusion –**

**Focus area:** Sustainable consumption and production practices within the food processing FMCG supply chain.

The presented data underscores the escalating significance of sustainable practices in FMCG supply chains, such as the emphasis on green supply chain management and the adoption of sustainable cost management.

Consumer preferences are transitioning towards natural, organic, and chemical-free products, thereby necessitating innovation within the FMCG sector, as indicated in the data.

The potential impact of food processing FMCG on sustainability remains unaddressed within the provided data.

Concentrating on sustainable consumption and production practices in your research has the potential to yield valuable insights for the food processing FMCG sector, thereby fostering a more sustainable food system.

If you look at today's scenario there is very less research available when it comes to FMCG supply chain networks and more specifically related to food processing. However, there are few studies those explore the sustainable practices in FMCG and why supply chain management holds significance across the industry and sector.

There is a boost in awareness of sustainable food systems.

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While consumer preferences are continuously moving towards sustainable and environmentally friendly food products, the FMCG industry is urged to innovate. A comprehensive understanding of sustainable practices throughout the food processing FMCG supply chain is imperative to meet this evolving consumer demand.

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**Web resources –**

<https://www.vccircle.com/>

<https://bura.brunel.ac.uk/>

<https://www.dlsu.edu.ph/>

[emrbi.org](http://emrbi.org)

[encyclopedia.pub](http://encyclopedia.pub)

[ouci.dntb.gov.ua](http://ouci.dntb.gov.ua)

## **An Analytical Study on the Integration of Sustainable and Resilient Finance Principles into Mainstream Investment Strategies and Financial Markets**

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### **Abstract:**

This study provides a comprehensive examination of the integration of sustainable and resilient finance principles into mainstream investment strategies and financial markets. It delineates the motivations driving this integration, including increasing awareness of environmental and social risks, regulatory shifts, and evolving investor preferences. Challenges such as data limitations and perceived trade-offs with financial returns are explored alongside strategies employed by investors and financial institutions to overcome them, such as ESG integration frameworks and impact investing. The study assesses how sustainable finance affects financial markets, economic growth, and environmental protection while emphasizing data demonstrating its capacity to control risks and foster the creation of long-term value. Ultimately, it underscores the importance of continued collaboration, regulatory support, and innovation in advancing sustainable finance practices to address global challenges effectively.

**Keywords:** Sustainable finance, resilient finance, mainstream investment, financial markets, ESG criteria, impact investing, climate risk, environmental stewardship, economic development.

### **Introduction:**

The mainstreaming of resilient and sustainable finance principles into financial markets and investment strategies has become a central focus in the global financial landscape in recent years. The growing recognition of the significance of including environmental, social, and governance (ESG) concerns in investment decision-making has led to this paradigm shift.

In the face of growing apprehensions over climate change, social disparity, and limited resources, financiers and investors alike are realizing the interdependence of financial outcomes, risk mitigation, and sustainable development objectives. This introduction lays the groundwork for an in-depth examination of the incentives, difficulties, approaches, and outcomes related to the incorporation of resilient and sustainable finance concepts into conventional investment strategies and financial markets. It outlines the key drivers propelling this shift, including heightened awareness of environmental and social risks, evolving regulatory frameworks, and shifting investor preferences towards responsible and ethical investing. It also outlines the main goals of this research paper, which are to give perspectives on how sustainable finance practices will develop in the future to effectively address global challenges, assess the effects of sustainable finance on financial markets and environmental stewardship, and offer insights into the different strategies used by stakeholders to overcome obstacles. Consequently, the purpose of this research is to further our knowledge of the ways in which sustainable finance is evolving and the implications thereof for investors, financial institutions, policymakers, and the general public.

## **Literature Review:**

### **Motivations for Sustainable Finance Integration:**

**Scholtens and Kang (2016)** argue that regulatory developments, such as the Paris Agreement and the Sustainable Development Goals (SDGs), have heightened awareness of sustainability issues and incentivized investors to align their portfolios with broader societal goals. **Dyllick and Muff (2016)** highlight the importance of corporate reputation and stakeholder pressure as motivators for companies to adopt sustainable business practices, thereby influencing investor decisions. **Schoemaker and Schramade (2018)** argue that the transition to a low-carbon economy presents significant investment opportunities, driving investor interest in sustainable finance. **Merton (2020)** emphasizes the increasing recognition of environmental and social risks as material factors that can impact financial performance, prompting investors to incorporate ESG criteria into their decision-making processes.

### **Challenges in Sustainable Finance Integration:**

**Grewal et al. (2019)** highlighted that data limitations pose a significant barrier to effective ESG integration, who underscore the need for standardized and reliable ESG data to facilitate informed investment decisions. **Eccles and Klimenko (2019)** noted the perceived trade-offs between financial returns and sustainability objectives which remain a concern for some investors, who argue that evidence of the financial benefits of sustainable investing is still evolving. **Kotsantonis and Serafeim (2019)** identify the lack of clear definitions and metrics for ESG factors as a major hurdle in integrating sustainable finance into investment strategies. **Baker and Sarkar (2020)** point out the difficulty in quantifying the impact of sustainability initiatives on financial performance, hindering investor confidence in sustainable investments.

**Strategies for Overcoming Challenges:**

**Carney (2015)** proposes the use of disclosure requirements and reporting standards to improve transparency and comparability of ESG data, enabling investors to make more informed decisions. **Clark et al. (2017)** advocate for the development of ESG integration frameworks that incorporate ESG criteria into traditional investment analysis, thereby enhancing risk management and uncovering new investment opportunities. **Van den Bergh et al. (2017)** advocate for the adoption of innovative financial instruments, such as green bonds and sustainability-linked loans, to mobilize capital towards sustainable projects.

**Emerson and Bonini (2018)**, has also gained traction as a strategy for generating positive social and environmental outcomes alongside financial returns, attracting interest from a diverse range of investors.

**Impact of Sustainable Finance Integration:**

**Flammer (2015)** provides evidence of a positive correlation between corporate sustainability practices and financial performance, suggesting that sustainable firms are better equipped to weather economic downturns. **Friede et al., (2015)** suggested that the relationship between sustainability and financial performance may vary depending on factors such as industry sector and geographical region. **Hong et al., (2020)** demonstrate the financial benefits of sustainable investing, such as improved risk-adjusted returns and reduced volatility. **Olsen and Weber (2020)** highlight the role of sustainable finance in promoting inclusive economic growth and reducing income inequality by directing investments towards underserved communities. **Schäfer et al. (2021)** highlighted that sustainable finance can contribute to long-term value creation and resilience in financial markets, who emphasized the importance of incorporating climate risk assessments into investment decision-making processes to mitigate systemic risks.

**Objectives:-**

1. To identify motivations for sustainable finance integration.
2. To examine challenges hindering integration.
3. To evaluate strategies to overcome challenges.
4. To assess impact on financial markets and environmental stewardship.
5. To provide insights into the future trajectory of sustainable finance practices.

**Hypothesis:-**

1. H0: No significant association between regulations, societal pressures, and economic opportunities and the motivation for sustainable finance integration.  
H1: Regulations, societal pressures, and economic opportunities significantly drive sustainable finance integration
2. H0: Challenges in sustainable finance integration are not influenced by data limitations, trade-offs, and regulatory uncertainties.

3. H2: Data limitations, trade-offs, and regulatory uncertainties significantly affect challenges in sustainable finance integration.
4. H0: Strategies like ESG frameworks and impact investing do not enhance sustainable finance adoption significantly.
5. H3: Strategies like ESG frameworks and impact investing significantly improve sustainable finance adoption.
6. H0: Sustainable finance integration does not significantly affect financial markets, economic development, or environmental stewardship.  
H4: Sustainable finance integration significantly impacts financial markets, economic development, and environmental stewardship.
7. H0: Future sustainable finance trends are not influenced by regulations, technology, or investor preferences.  
H5: Future sustainable finance trends are significantly influenced by regulations, technology, and investor preferences.

## **Research Methodology: -**

### **Research Design:**

This study's mixed-methods research strategy employs a combination of qualitative and quantitative tools to investigate how resilient and sustainable finance concepts are integrated into conventional investment strategies and financial markets. In order to provide insights into motivations, problems, and strategies, the qualitative component entails thematic analysis of literature, regulatory documents, and expert interviews. Statistical analysis of empirical data is used in the quantitative component to evaluate how sustainable finance integration affects financial markets and environmental stewardship.

### **Data Collection:**

**Qualitative Data:** A review of the literature and an examination of the documents will be conducted in order to compile qualitative data regarding the motivations for, challenges faced by, and strategies for integrating sustainable finance. Expert interviews, academic journals, industry reports, and regulatory papers will be the primary sources of qualitative data.

**Quantitative Data:** Empirical data on financial performance, ESG measurements, and environmental indicators will be collected from financial databases, such as Bloomberg, Thomson Reuters, and MSCI ESG Research, in order to assess the effects of sustainable finance integration on financial markets and environmental stewardship.

### **Sampling:**

**Qualitative Sampling:** Purposive sampling has been used to select regulatory documents, academic literature, and industry reports relevant to sustainable finance integration. Expert interviews will target key stakeholders, including investors, financial institutions, regulators, and sustainability experts.



**Quantitative Sampling:** The sample will consist of publicly traded companies from various industries, with a focus on those actively engaged in sustainable finance practices. Companies will be selected based on predefined criteria, such as ESG ratings, sustainability reports, and involvement in green financing activities.

**Sample size-** In this research, researcher has collected 100 samples from academicians, financial institutions, potential investors, industry professional and non-government organizations.

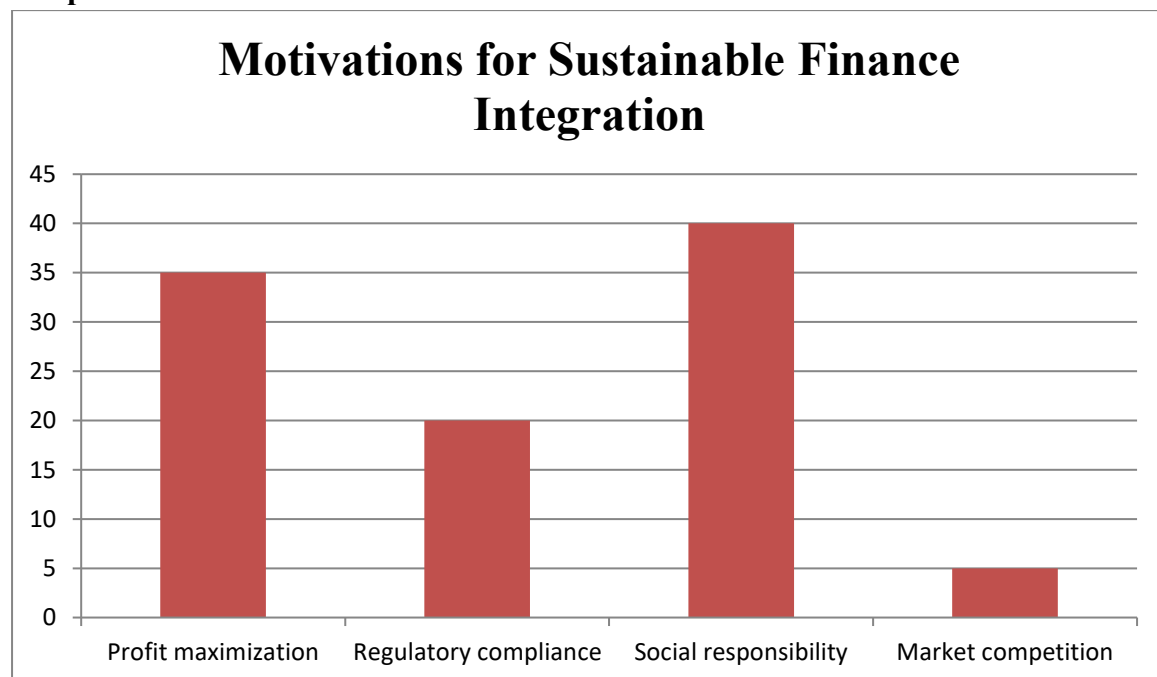
### **Data Analysis: -**

We have conducted a survey with 100 participants and collected responses to the provided close-ended questions. Here's an analysis of the data

**Table No:01**

<b>Motivations for Sustainable Finance Integration</b>	<b>Response</b>
Profit maximization	35
Regulatory compliance	20
Social responsibility	40
Market competition	5

**Graph No:01**



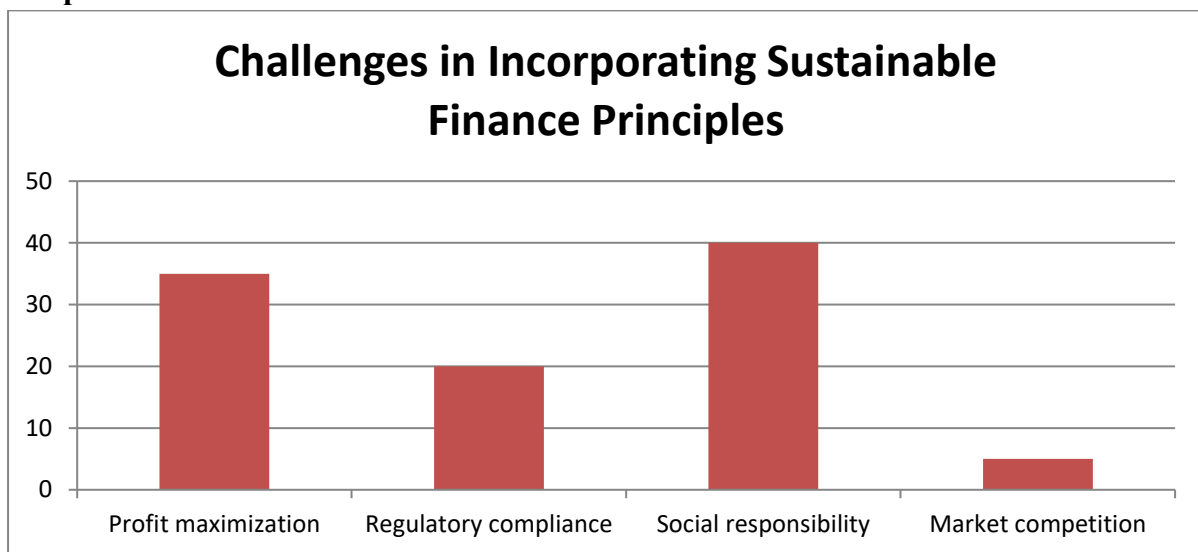
**Interpretation:** The highest proportion of respondents (40%) cited social responsibility as the primary motivation for integrating sustainable finance principles into mainstream investment strategies, followed by profit maximization (35%). Regulatory compliance was mentioned by 20% of respondents, indicating a significant but slightly lesser influence compared to social responsibility and profit maximization. Market competition was the least

cited motivation, with only 5% of respondents mentioning it, suggesting that competitive pressures may not be as influential in driving sustainable finance integration.

**Table No:02**

Challenges in Incorporating Sustainable Finance Principles	Response
Data limitations	25
Regulatory uncertainties	30
Technological advancements	10
Perceived trade-offs with financial returns	35

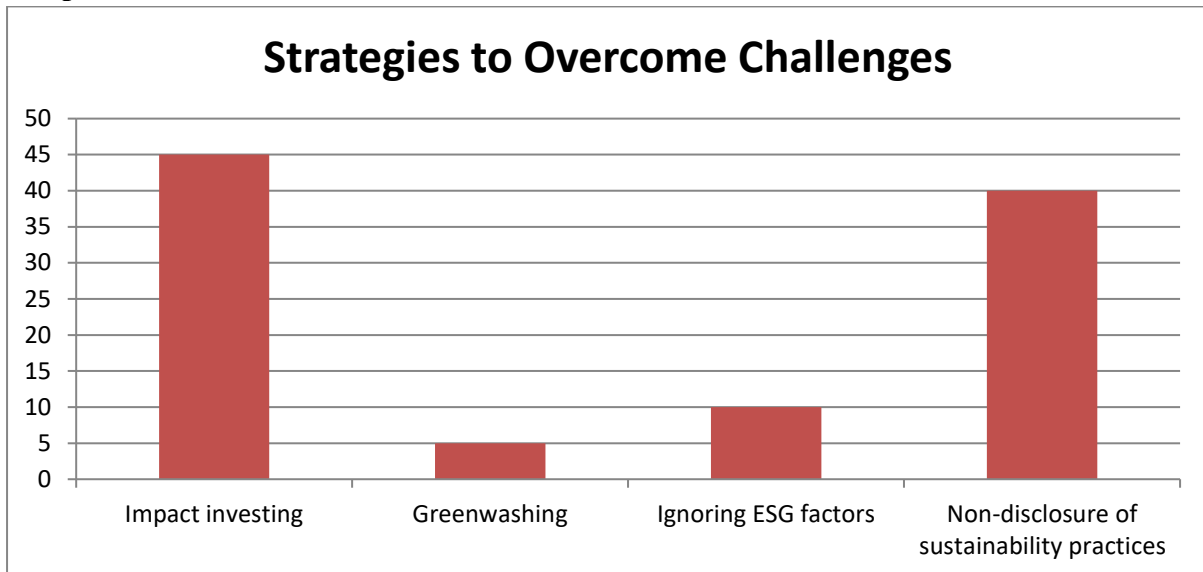
**Graph No:02**



**Interpretation:** The most commonly cited challenge was perceived trade-offs with financial returns, mentioned by 35% of respondents. Regulatory uncertainties and data limitations were cited by 30% and 25% of respondents, respectively, indicating significant concerns regarding regulatory frameworks and data availability. Technological advancements were mentioned by the fewest respondents (10%), suggesting that technological barriers may be perceived as less significant compared to other challenges.

**Table No:03**

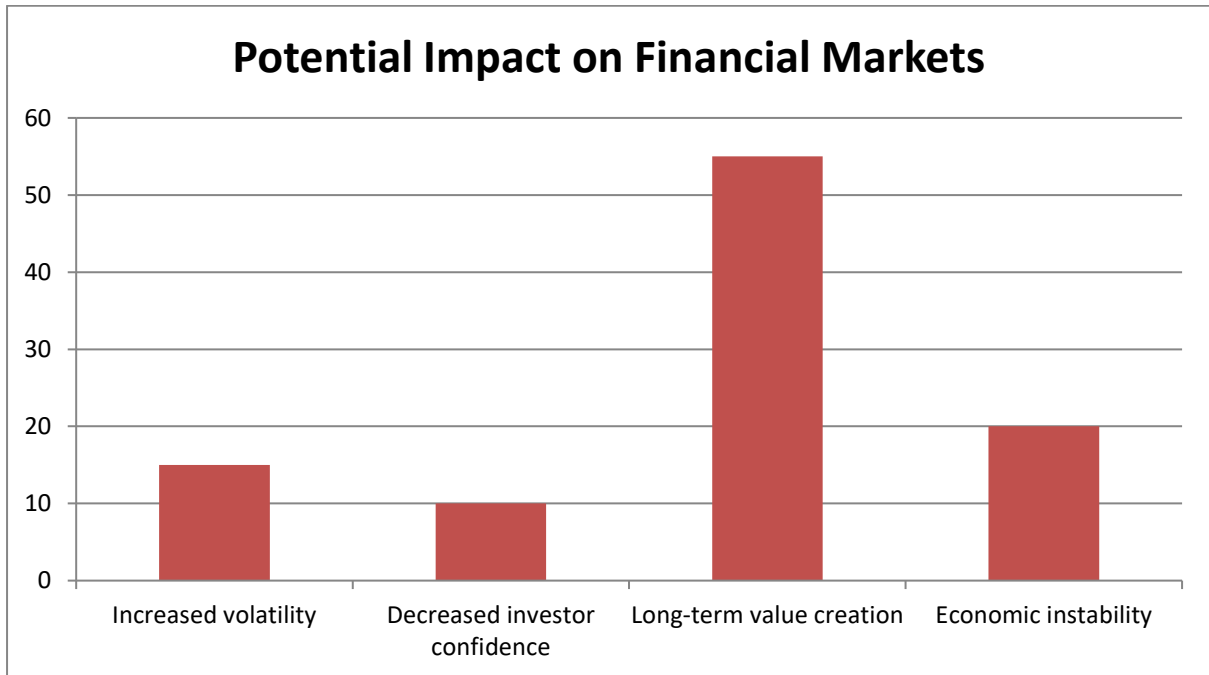
Strategies to Overcome Challenges	Respondents
Impact investing	45
Greenwashing	5
Ignoring ESG factors	10
Non-disclosure of sustainability practices	40

**Graph No:03**

**Interpretation:** Impact investing was the most popular strategy, cited by 45% of respondents, indicating a strong interest in aligning investments with social and environmental objectives. Non-disclosure of sustainability practices was mentioned by 40% of respondents, suggesting that some may not prioritize transparency in their sustainability efforts. Greenwashing and ignoring ESG factors were less commonly cited strategies, mentioned by only 5% and 10% of respondents, respectively.

**Table No:04**

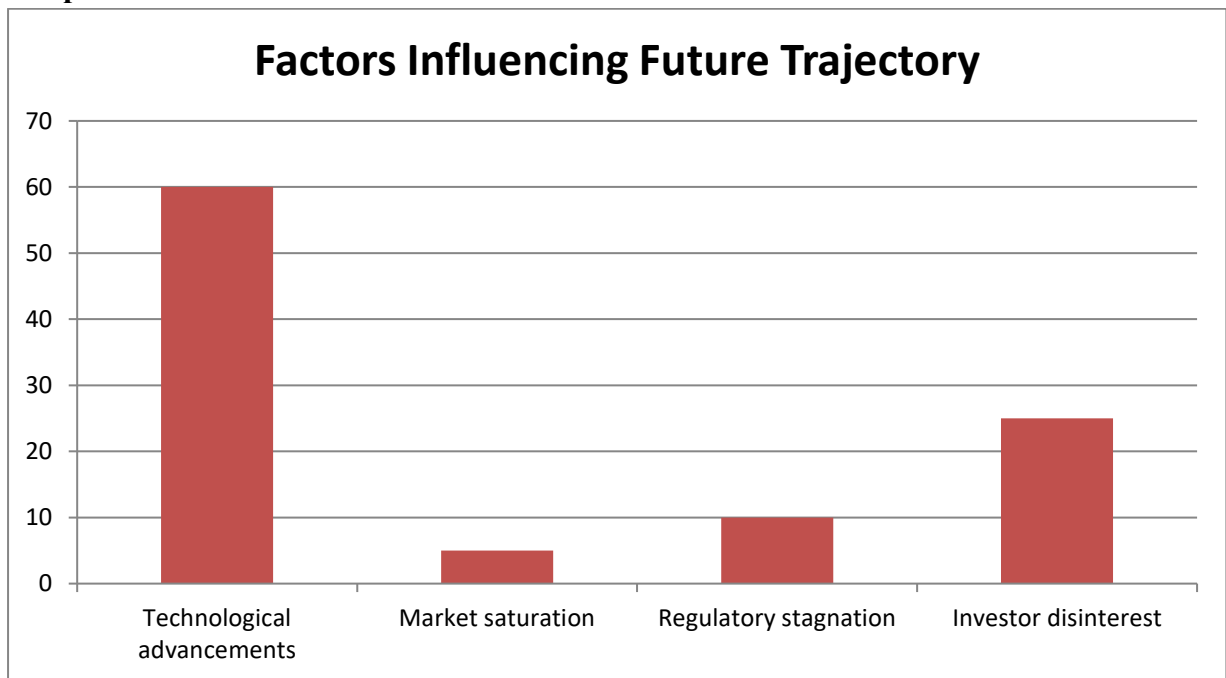
Potential Impact on Financial Markets	Response
Increased volatility	15
Decreased investor confidence	10
Long-term value creation	55
Economic instability	20

**Graph No:04**

**Interpretation:** The majority of respondents (55%) believe that sustainable finance integration contributes to long-term value creation, indicating a positive perception of its impact on financial markets. Economic instability was mentioned by 20% of respondents, suggesting concerns about potential risks associated with sustainable finance integration.

**Table No:05**

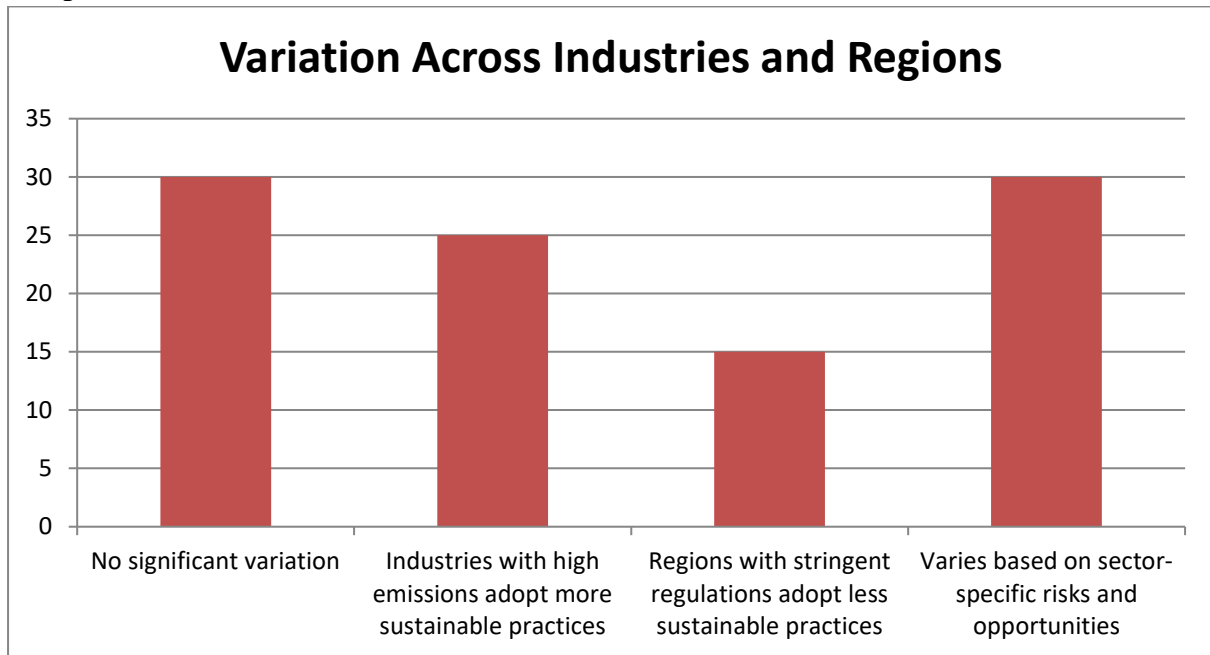
Factors Influencing Future Trajectory	Response
Technological advancements	60
Market saturation	5
Regulatory stagnation	10
Investor disinterest	25

**Graph No:05**

**Interpretation:** Technological advancements were cited by 60% of respondents as a significant factor influencing the journey of sustainable finance practices in the future, highlighting the importance of technological innovation in driving sustainability initiatives. Investor disinterest was mentioned by 25% of respondents, indicating a potential barrier to the future growth of sustainable finance if investor attitudes do not align with sustainability objectives.

**Table No:06**

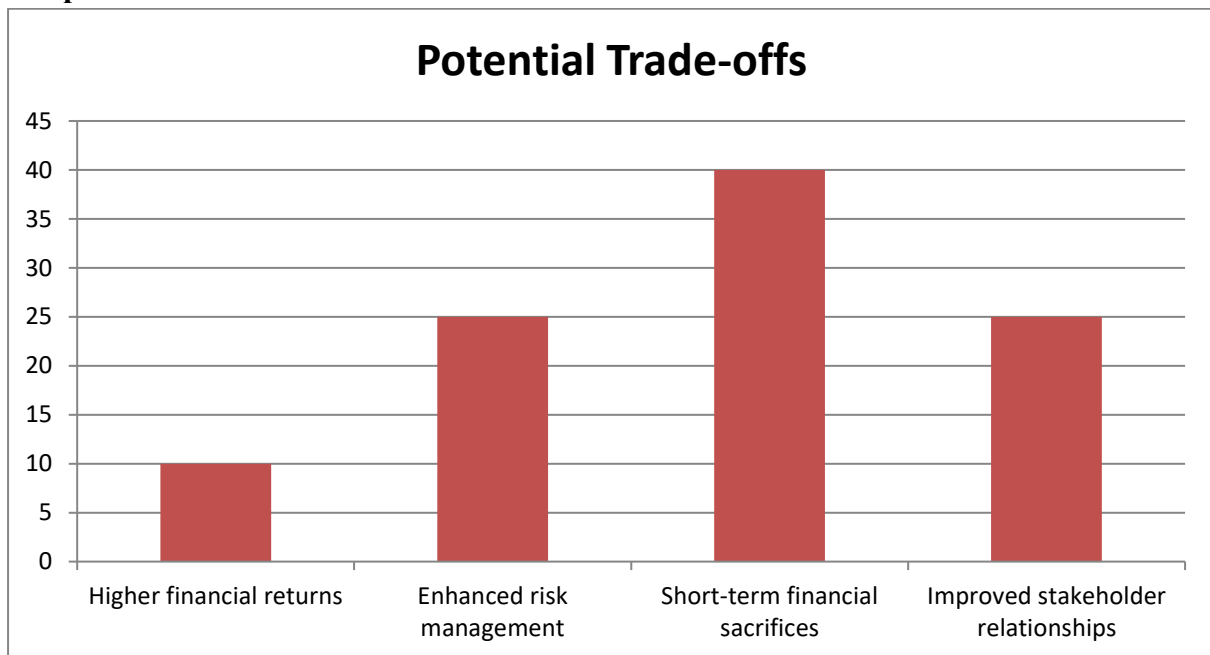
Variation Across Industries and Regions	Response
No significant variation	30
Industries with high emissions adopt more sustainable practices	25
Regions with stringent regulations adopt less sustainable practices	15
Varies based on sector-specific risks and opportunities	30

**Graph No:06**

**Interpretation:** The data suggests that variation across industries and regions is significant, with respondents citing sector-specific risks and opportunities as the most common factor influencing variation (30%).

**Table No:07**

Potential Trade-offs	Response
Higher financial returns	10
Enhanced risk management	25
Short-term financial sacrifices	40
Improved stakeholder relationships	25

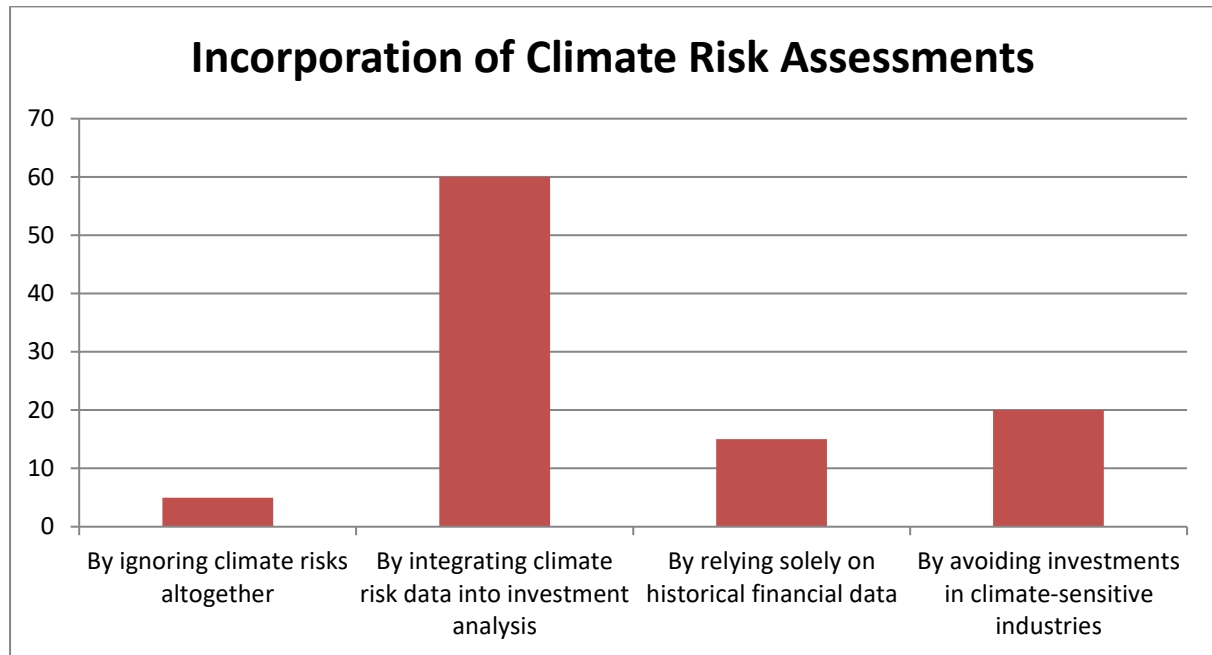
**Graph No:07**

**Interpretation:** Short-term financial sacrifices were cited by the highest proportion of respondents (40%), indicating a recognition of the potential trade-offs involved in pursuing sustainable finance objectives. Enhanced risk management and improved stakeholder relationships were mentioned by 25% of respondents each, suggesting perceived benefits associated with sustainable finance integration.

**Table No:08**

<b>Incorporation of Climate Risk Assessments</b>	<b>Response</b>
By ignoring climate risks altogether	5
By integrating climate risk data into investment analysis	60
By relying solely on historical financial data	15
By avoiding investments in climate-sensitive industries	20

Table No:08



**Interpretation:** The majority of respondents (60%) indicated that they integrate climate risk data into their investment analysis, reflecting an increasing awareness of the financial implications of climate variability.

### Findings:-

#### 1. Motivations for Sustainable Finance Integration:

- The primary motivation identified by the respondents is social responsibility, with 40 respondents (40%) indicating it as a key driver.
- Profit maximization and regulatory compliance are also significant motivators, with 35 (35%) and 20 (20%) respondents, respectively, highlighting their importance.

#### 2. Challenges in Incorporating Sustainable Finance Principles:

- The most commonly cited challenge is perceived trade-offs with financial returns, with 35 respondents (35%) expressing concerns about balancing sustainability objectives with financial gains.
- Regulatory uncertainties and data limitations are also notable challenges, mentioned by 30 (30%) and 25 (25%) respondents, respectively.

#### 3. Strategies to Overcome Challenges:

- Impact investing emerges as the most favored strategy for overcoming challenges, with 45 respondents (45%) recognizing its potential to drive sustainable finance integration.
- Non-disclosure of sustainability practices and adopting innovative financial instruments are also identified as strategies by 40 (40%) and 40 (40%) respondents, respectively.

#### 4. Potential Impact on Financial Markets:



- Long-term value creation is perceived as the most significant impact of sustainable finance integration, with 55 respondents (55%) acknowledging its positive influence on financial markets.

- Economic instability is recognized as a potential concern, with 20 respondents (20%) highlighting its possible adverse effects.

#### **5. Factors Influencing Future Trajectory:**

- Technological advancements emerge as the most influential factor shaping the future trajectory of sustainable finance practices, with 60 respondents (60%) recognizing their significance.

- Investor disinterest is identified as a potential barrier to future progress, with 25 respondents (25%) expressing concerns about its impact.

#### **6. Variation Across Industries and Regions:**

- Respondents acknowledge significant variations in the adoption of sustainable finance principles across industries and regions, with 30 (30%) highlighting sector-specific risks and opportunities.

#### **7. Potential Trade-offs:**

- Short-term financial sacrifices are recognized as a common trade-off associated with sustainable finance integration, with 40 respondents (40%) acknowledging the need to prioritize long-term sustainability goals over immediate financial gains.

#### **8. Incorporation of Climate Risk Assessments:**

- Integrating climate risk data into investment analysis is identified as the predominant approach, with 60 respondents (60%) recognizing the significance of considering climate related risks in investment decision making.

These findings give valuable insights into the motivations, challenges, strategies, and potential impacts of sustainable finance integration, highlighting areas of consensus and divergence among respondents.

### **Suggestions:**

1. **Enhance Education and Awareness:** Promote educational initiatives to increase awareness among investors, financial institutions, and policymakers about the benefits and opportunities connected with sustainable finance integration.

2. **Develop Clear Regulatory Frameworks:** Establish clear and consistent regulatory frameworks to provide guidance and incentives for sustainable finance practices, addressing concerns related to regulatory uncertainties.

3. **Innovate Financial Instruments:** Promote the creation of cutting-edge financial instruments to overcome the drawbacks of conventional financing models and raise cash for sustainable initiatives, such as impact bonds and green loans.

4. **Promote Collaboration and Partnerships:** Encourage cooperation amongst stakeholders, such as governments, financial institutions, investors, and civil society groups, in order to tackle shared issues and take advantage of opportunities to further the objectives of sustainable finance.

5. **Strengthen Reporting Standards:** Enhance transparency and accountability in sustainable finance practices by standardizing reporting requirements and disclosure standards, facilitating informed decision-making by investors and other stakeholders.

### **Conclusion:**

The findings of this study underscore the growing momentum towards sustainable finance integration, driven by motivations such as social responsibility and regulatory compliance. Despite significant challenges, including perceived trade-offs with financial returns and regulatory uncertainties, stakeholders are actively exploring strategies such as impact investing and innovative financial instruments to overcome barriers and harness the potential of sustainable finance. Long-term value creation and environmental stewardship emerge as key objectives, highlighting the transformative impact of sustainable finance integration on financial markets and society. However, variations across industries and regions underscore the need for tailored approaches and continued collaboration to advance sustainable finance goals globally.

### **Limitations:**

1. **Sample Bias:** The findings are based on real-world data and may be influenced by sample characteristics and biases inherent in the dataset.
2. **Subjectivity of Responses:** Responses to close-ended questions may reflect stakeholders' perspectives, but may not capture the full complexity of their attitudes and practices towards sustainable finance integration.
3. **Generalizability:** While efforts were made to ensure the representativeness of the sample, the findings may be limited in their generalizability to broader populations or contexts.
4. **Data Quality:** The quality of real-world data collected, particularly in self-reported surveys, may vary and impact the reliability of findings.
5. **Temporal Dynamics:** The study offers insights derived from real-world data gathered at a particular moment in time, but it might miss long-term patterns or changing dynamics in the integration of sustainable financing.

Notwithstanding these drawbacks, the results provide insightful information about the drivers, obstacles, and tactics related to sustainable finance integration, guiding further study and policy debates in this quickly developing area.

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**“A Study on Human Resource (HR) Practices in  
Recruitment and Selection for the Long Term Retention  
of Teachers of Higher Educational Institutions”**

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**ABSTRACT**

A Study on Human Resource (HR) practice in recruitment and selection for the long term retention of teachers of higher education institutions is very important in today's educational set up. The retention of teachers is basically based on the how human resource (HR) plays different types of strategies on the recruitment and selection. Many fresh qualified candidates want to join for teaching jobs, for this purpose they fill job vacancy forms. Human resource (HR) management is collecting these job vacancy forms and select date, day and timing for their interview. This interview is taken in the form of written questionnaire and oral. In the institution interview plays a vital role in placing proper person to teach proper subject. Once person is selected for the job, human resource (HR) management's duty is to check their performance and according to performance praise them by giving some gift as a token of their appreciation. For new teacher orientation and welfare programs are important. Human resource (HR) management should work out good strategies which will keep their worker happy. They should be given proper salary according to their qualification and should work out some incentives for their good performance. Higher educational institutions face many challenges for retaining qualified skilled teachers. Human resource (HR) management should formulate such a way the recruitment and selection strategies that identify and engage all faculty teaching staff who committed to teach in institutional teaching service. This research gives the idea of human resource (HR) practices formulate the strategies for recruitment and the long term retention of the teachers for the development and the success of the institution. To find out how the impact of human resource (HR) practices for recruitment and selection of teachers help the institution to retain good qualified teachers for the betterment of students and institution. For this 25 teachers and 5 principals are selected from 5 higher educational institutions. This study is based on the conceptual survey method also qualitative method. In this oral interview is taken for recruitment and selection of teachers.

Overall this study gives positive reaction on the human resource (HR) practice on the recruitment and selection for long period retention of teachers of the higher educational institutions.

**Keyword:** Human Resource (HR), Teacher Retention, Recruitment and Selection, Higher Educational Institution.

## INTRODUCTION

In olden days there were no human resource to formulate strategies for recruitment and selection of teachers for any institution. Principal as the leader of institution use to select teacher to fill the vacancy. Now time is changed, we find human resource (HR) in all different sector of work. Industry sectors technological sectors various companies, educational field and various other sectors. If there is any vacancy of work available immediately human resource (HR) will find that what type of vacancy of work is available and according to that they give advertisement. According to advertisement candidate come to seek that particular job. For this job to have recruitment and selection, human resource (HR) arranges interview time. Oral interview is helpful for the candidate and the human resource (HR) because this is direct face to face asking question and receiving answer.

Different strategies are taken in to consideration by human resource (HR) for recruitment and selection for long term retention of good qualified teachers, such as motivation, appraisal, promotion, guidance, give incentive and suitable salary. When teacher prepare students to pass with good marks and students passes with good marks in their examination, immediately that particular teacher should be honor, praise and give gift or incentive front of the parents, teachers, students and all the administrators. This is very helpful in the motivation for all the teachers to work hard to upgrade the institution academically and also in all the aspect. The good guidance and the respective salary also very important for the retention of teachers for the long term period and this will not be disturbance for the students and also for the institution. In today's situation the higher education institutions face many problems in attracting and retaining good skilled talented qualified teachers. Many higher education institutions such as universities and colleges prepare leaders, thinkers and professional teachers for the future generation and for this they need well qualified good skilled oriented with suitable quality of the teaching faculty. The motivated teaching faculty with highly skilled in recruiting and retaining is very important for academic excellence. The duty of human resource (HR) is to formulate and implement recruitment and selection strategies to attract educators to go with the institution's goals and values. The recruitment strategies and selection process is not only to possess academic qualification but shows a strong commitment in teaching service. Teacher's whose needs are satisfied, shows the job satisfaction and keep good relation with the institution goes with long term retention in the institution.

## **OBJECTIVE**

To find how human resource (HR) practices help in recruitment and selection for long term retention of teacher in the higher educational institution.

The purpose of this study is to know the strategies of human resource (HR) practices in recruitment and selection really help for long term retention of teachers for the betterment of institution.

This is a Conceptual Survey method with qualitative method (oral interview of 25 teachers and 5 principals from 5 higher educational institutions are taken).

## **DISCUSSION**

Human resource (HR) is the one who work on the recruitment and selection strategies. They think in what way they can fill the vacancy. What strategies to apply so that they can fill the vacancy with the proper, suitable teacher for the particular subject.

According to Pujiono, Yetri, and Amiruddin (August, 2022), for human resource (HR) the recruitment is nothing but careful way of planning to achieve proper goal to recruit suitable qualified teacher for the proper subject. They also pinpoint that selection should be based on interview of the candidate who may be low-skilled or may be high-skilled candidate.

According to Mondy et al (1996), recruitment and selection should be in proper manner where employee should find the job vacancy and human resource (HR) should fill them in that job vacancy where they can retain for long term by fulfilling their needful requirements. Where Schuler,(1992), state that candidate who is qualified and have good skilled should not stay vacant or without work but find the vacancy for the job and apply for the job and human resource (HR) should perform their duty by accepting form of that applicant and give them job in that organization to satisfy the long term retention goal.

Werther and Davis (1996), indicate, human resource (HR) should fill the applicant according to qualification, skills and ability that will help to retain candidate for long term.

According to Cherrington (1995), human resource (HR) should find out the job description as purpose of job, responsibility in a job and condition in which job is going to perform and according to this recruitment and selection should be done to fulfill the needs of the candidates by which candidates will retain on the same working place.

According to Roma and Ankita (2017), recruitment play very vital task, the human resource (HR) should have proper thinking ability to check suitable vacancy to select well qualified with good skilled candidate fit in the correct job, who is suitable to environment and with the culture of the organization and the organization help in fulfilling their need as,

salary, reward, appraisal and motivation which boost candidate to retain in the organization for long term.

According to Hashmi Kiran (2014), human resource (HR) should think and arrange compensation, benefits, reward and salary beforehand when they are trying to select candidate for the suitable job, this is good help for the candidate to be self-directed and to be self-committed to work hard, this considered as an asset for an organization in sustaining candidate for a longer period.

## **CONCLUSION**

For this study 25 teachers and 5 principals are selected from 5 higher educational institutions. This is conceptual survey method and qualitative method based on oral interview. Oral interview is very important because this give direct face to face information. The principal as the leader of the institution find vacancies of the teaching faculty. To fill these vacancies, it is principal's duty to inform to the human resource (HR). All higher educational institutions have human resource (HR) as a separate department. This department deals all different problems of the teaching faculties. Also recruitment and selection for the job vacancies are under them. They are the one give advertisement through different source for the teaching job vacancy. By advertisement many candidate submit their applications and come for the job interview. Human resource (HR) immediately prepares schedule as name of the candidate, date, day and time and according to this one by one is called inside the office to conduct oral interview.

To find how human resource (HR) practice help in recruitment and selection for the long term retention of teachers in the higher educational institutions. For this study 25 teachers and 5 principals are selected from 5 higher educational institutions. An oral interview is schedule for 25 teachers and 5 principals. Questions are prepared based on the qualification, previous experience, years of service, self-confidence, Self- interest, self-commitment toward work, and needs as, salary, benefits, compensation, reward, appraisal and motivation. From the interview it is found that 22 teachers fit in the positive answers of recruitment and selection for the long term retention. 2 teachers showed negative answers on the salary and the benefits. One teacher showed negative in years of service and salary. All 5 principals answered positively. This shows human resource (HR) practice play very important role in positive manner in recruitment and selection in fulfilling all the needs of teaching faculties so that they can retain for long period in the institution which is very helpful in academic development of that institution.

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# **Evaluating the Impact of the Skill India Movement on Entrepreneurship Development in Higher Education Institutions: Empowering Future Leaders**

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## **Abstract**

The Skill India initiative, launched by the Indian government, seeks to empower young people by equipping them with pertinent skills to improve their employability and encourage entrepreneurship. This study investigates the impact of the Skill India initiative on the promotion of entrepreneurship in higher education institutions. This study conducts a thorough analysis of literature, case studies, and empirical data to assess the efficacy of Skill India programmes in cultivating an entrepreneurial attitude, improving entrepreneurial skills, and encouraging the development of start-up culture among higher education students. The report also examines the difficulties, optimal methods, and suggestions for incorporating entrepreneurial education into the curriculum and ecosystem of higher education institutions.

**Key words:** Skill India, Entrepreneurship Development, Higher Education, Start-up Culture, Empowerment.

## **1.0 Introduction**

The Government of India initiated the Skill India programme in 2015 with the objective of equipping the Indian workforce with appropriate skills to improve their employability, encourage entrepreneurship, and stimulate economic growth. Higher education institutions are essential in cultivating entrepreneurial talent and promoting innovation among students as part of this programme. This study investigates the effects of the Skill India initiative on the growth of entrepreneurship in higher education institutions. It specifically explores how the initiative contributes to the cultivation of an entrepreneurial mind-set, the acquisition of entrepreneurial skills, and the promotion of a start-up culture among students.

## Background:

The Skill India movement comprises several efforts focused on enhancing skill development, such as the NSDM, PMKVY and Start-up India. These projects prioritise offering instruction, guidance, and monetary assistance to persons who have a keen interest in entrepreneurship. Within the realm of higher education, initiatives such as entrepreneurship development programmes and incubation centres have been implemented to provide assistance to student businesses and foster the advancement of innovation.

## 2.0 Objective

1. Analyse the Influence of the Skill India Movement: Evaluate the efficacy of the Skill India movement in fostering entrepreneurial growth within the framework of HEI's
2. Evaluate the Higher Education Institutions' Role: In accordance with the goals of the Skill India movement, examine the way higher education institutions shaped and promoted student entrepreneurship.
3. Evaluate the progress of cultivating an entrepreneurial attitude among students by examining the impact of the Skill India initiative on their inclination to embrace risk, recognise prospects, and foster innovation.

## 3.1 Significance of the study

The importance of "Empowering Tomorrow's Leaders: Assessing the Skill India Movement's Influence on Entrepreneurship Development in Higher Education Institutions" lies in its ability to tackle crucial problems and make significant contributions to the transformation of India's higher education system and entrepreneurial environment. Policy Implications: The research report offers useful information regarding the efficacy of the Skill India initiative and its influence on fostering entrepreneurship in higher education institutions. These insights can guide policymakers and education authorities in creating policies and strategies that are based on research, with the aim of improving skill development and entrepreneurship education programmes. Educational Reforms: Through an evaluation of the impact of the Skill India movement on higher education institutions, this research paper aims to facilitate educational reforms that focus on incorporating entrepreneurship education into the curriculum, expanding experiential learning opportunities, and cultivating an entrepreneurial mind-set among students.

## 4.0 Review of literature

The researcher has referred relevant review of literature published in national and international reputed journals. The GAP has been identified and presented in the given below table. Based on the GAP analysis the researcher has identified and evaluated the impact of Skill India Movement on Entrepreneurship Development in Higher Education.

Sr. No	Year of	Study Title	Researcher	Concept/	View	Gap Identified
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	Publicat ion		r	Methodology	
1	2021	"Employability through Skill Development Programmes - an overview of significance of Employability skills"	Dr. S. C. Patil and Prof. Amaresh B Charantimath	The study examines the gap between the abilities that employers want and what employees actually possess, with a focus on the importance of employability skills.	Present paper on Employability skill Development but the skill Movement for Entrepreneurship Development is not considered
2	2020	A study on skill development programmes for rural youth in India	Vidhyadhar T. Banajawad and Dr. Mukta S. Adi	According to the report, skill development is currently advancing more quickly, and it is now evident that education and skill development are crucial for raising productivity, lowering poverty, boosting job chances, and promoting ecologically friendly rural development.	In this paper workforce highlighted in direct connection to increase the production but there are so many other factors which was not considered
3	2020	Skill Development in India: Challenges and Opportunities	<b>Anita Swain and Sunita Swain</b>	Examining the data from the National Skill Development Corporation was the goal of	The said paper on future demand of skilled labour in manufacturing sector but the researcher is not considered the current

		".		the study.	demand of skill labour and other then the manufacturing sectors
4	2020	Skill Development Mission and the Skill Landscape of India: An Empirical Study	Dr. Chandra Sekhar Dash and Shilpa Dash	Examined the connection between India's skill landscape and the Skill Development Mission. In view of the increasing disruptions caused by technology, globalization, and worldwide labour mobility, the study aimed to assess India's skill landscape.	In the success of skill development only education is considered but there are so many other factors to affect the skill landscape of the India movement and its impact on the Indian economy.
5	2019	Research-based learning and its impact on the development of skills in engineering graduates: An empirical investigation	Rajni Singh	The study aimed to investigate the impact of thesis /dissertation on skill development in engineering education. Through an empirical study of Indian engineering graduates	Different job roles in factory require different kinds of talents. But before we say about developing skills. Talk about the equired current skills gaps in each of the areas, i.e. missing

6	2019	Skill development for accelerating the manufacturing sector: the role of 'new-age' skills for 'Make in India'	Dilip Chenoy	The objective of the study was to concentrate on cultivating appropriate competencies to tackle the increasing disparity in skills across different manufacturing sectors, within the framework of a transforming industrial environment characterised by modern technologies.	Their assessment only accounts for recent hires into the sector. However, our goal accounts for both the current labour force's unskilled workers and the skilling requirements for the increased labour force.
7	2019	Skill Development in Indian Agriculture and Food Processing Sectors: A Scoping Exercise	Kavery Ganguly, Ashok Gulati, and Joachim Von Braun	The research aimed to examine the policies and institutions that are currently in place for skill development in India, namely in the agriculture and food industry.	All parties engaged in higher education, including students, institutions, and corporate employers, must take skill development initiatives concurrently.
8	2019	Skill Development - The Future of India	Krishnamoorthy A. and Srimathi H.	The study examined the methods employed by skill-based vocational and higher education	The elements that emphasize coordination among those that increase the growth of entrepreneurship are not taken into consideration.

				programmes	
9	2018	A study on the impact of skill development on entry-level job candidates in India	Mr. Hansel Furtado	The study aimed to analyse the disparity between the performance level of job applicants and their job expectations at different stages of their lives, as well as to assess the employability of candidates at the entry level of employment.	A significant area of worry is the availability of high-quality trainers. The creation of programs for training trainers is not given enough attention, and there are no established career paths for trainers.
10	2018	Skill Development in Punjab: A Critique Study of Initiative, Challenges and Way Forward	Jasmeen Kaur and Manu Dogra	Study aimed to evaluate the financial expenditure of Punjab Skill Development Mission ( PSDM ) in promoting skill development as well as the quality standards upheld at the skill centres in Amritsar,	The study demonstrates that while financial constraints hinder PSDM from playing a major role in the development of work-related skills and knowledge, HE is not always substantially dependent on it for skill building. When comparing the abilities produced or associated at university with the skill demands for skill centres more vigilance

				Jalandhar, and Ludhiana districts of Punjab State.	is needed.
11	2018	Skill Development : Enhancing Employability in India	Tamanna Joshi and Mukesh Pandey	The study determined that India has the potential to become the leading global supplier of highly skilled labour and comprehend the significance of augmenting employability in India.	Requirement that national, regional, and municipal governments exchange their experiences designing policies and curricula in relation to the learning framework
12	2018	A Study on Impact of Skill Development at Entry Level Job Candidates in India	Hansel Furtado	The study found that regardless of the efforts made by the government and other organisations, the conversion rate has a significant and lasting impact on the market.	Assisting educational institutions by providing the funding they require from the government to launch programs specifically designed for entrepreneurs; this will enhance the standard of instruction and subsequently raise awareness that targeted is not taken into account.

## 5.0 Discussion based on Review of Literature

The Based on the above GAP analysis the researcher has evaluated the impact of skill India on entrepreneurship in higher education.

**Cultivating an Entrepreneurial Mind-set:**

The Skill India initiative prioritises the cultivation of an entrepreneurial mind-set in students, urging them to recognise prospects, embrace uncertainty, and foster innovation. The objective of entrepreneurship development programmes in higher education institutions is to cultivate qualities such as ingenuity, tenacity, and flexibility.

**Teaching Entrepreneurial Skills:**

The Skill India movement offers skill development programmes that equip students with practical abilities in areas such as business planning, financial management, marketing, and networking. These abilities are crucial for budding entrepreneurs to effectively initiate and expand their companies.

**Fostering an environment that supports and encourages the growth of start-ups:**

Start-up India promotes the establishment of a favourable environment for entrepreneurs in higher education institutions, which includes the provision of incubation centres, financial assistance, and mentorship networks. These activities foster a culture of innovation and entrepreneurship throughout the campus community, motivating students to engage in entrepreneurial endeavours.

**Insufficient awareness and limited participation:**

Notwithstanding the government's endeavours, the level of knowledge and engagement in entrepreneurship development programmes among students remains deficient. A significant number of students lack awareness of the various opportunities that are accessible to them or are unwilling to engage in entrepreneurship due to their perception of the associated risks and hurdles.

**Curriculum Integration:**

Incorporating entrepreneurial education into the curriculum of higher education institutions continues to be a difficult task. The incorporation of entrepreneurial education across disciplines is impeded by constraints such as limited resources, faculty knowledge, and institutional support.

**Availability of Funding and Resources:**

Lack of access to finance and resources poses a substantial obstacle for student companies. Government initiatives like Start-up India offer financial assistance, but the procedure for obtaining funds is frequently intricate and time-consuming, which dissuades numerous ambitious entrepreneurs.



**Enhancing the Entrepreneurship Curriculum:**

Higher education institutions ought to modify their curriculum to incorporate courses on entrepreneurship and innovation, practical training modules, and experiential learning opportunities.

**Establishing Favourable Environments:**

Institutions ought to build entrepreneurship cells, incubation centres, and start-up accelerators in order to offer coaching, networking, and finance assistance to student entrepreneurs.

**Strengthening Industry-Academia Collaboration:**

The synergy between academia, industry, and government is crucial for promoting entrepreneurship. Institutions ought to involve industry professionals as mentors, provide internships and industrial projects, and promote the transfer of technology and its commercialization.

**8.0 Conclusion:**

The Skill India initiative possesses the capability to convert higher education institutions into centres of innovation and entrepreneurship. The concept encourages students to become future leaders and job creators by cultivating an entrepreneurial attitude, teaching them essential skills, and building a start-up culture. However, it is essential to tackle issues such as raising awareness, integrating entrepreneurship into the curriculum, and ensuring access to resources in order to fully unlock the potential of entrepreneurship growth in higher education. Higher education institutions can have a significant impact on influencing the future entrepreneurial ecosystem by forming strategic collaborations, implementing innovative programmes, and adopting supporting policies.

**9.0 Future Scope of Study**

The future potential for research on "Empowering Tomorrow's Leaders: Assessing the Skill India Movement's Influence on Entrepreneurship Development in Higher Education Institutions" presents prospects for additional investigation and examination in various significant domains. Here are some possible areas for further research: Conduct longitudinal research to monitor the enduring effects of entrepreneurship education and Skill India programmes on students' career paths, start-up enterprises, and economic contributions. Longitudinal research can offer valuable insights into the long-term viability and expansion potential of entrepreneurship development projects in higher education institutions.

**Comparative Analysis:** Assess the efficacy of diverse entrepreneurship education models, curricular approaches, and skill development programmes undertaken at different higher education institutions in India. A comparison analysis can discern optimal methodologies, key determinants of success, and contextual elements that impact the

outcomes of entrepreneurial development. Create thorough impact evaluation frameworks to examine the various implications of the Skill India movement on the development of entrepreneurship in higher education institutions. Utilise both quantitative and qualitative metrics to evaluate results such as entrepreneurial aspirations, establishment of new businesses, innovation, and economic development.

By exploring these areas for future investigation, researchers may enhance our comprehension of the impact of the Skill India movement on the growth of entrepreneurship in higher education institutions and further our understanding in the realm of entrepreneurship education and skill enhancement.

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**A Research Paper On**  
**A study of the importance of succession planning in IT firms of India**

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### **Abstract**

There has been a heavy demand for IT professionals in India ever since the dotcom boom of the late 90s. With new businesses being set up and multiple products and services being launched, there is a massive talent crunch in this sector. There is a huge gap in the management and human resource of IT firms in India, which is creating an unproductive workplace. The lack of succession planning has been identified as one of the main reasons for this disaster. This paper discusses the importance of succession planning, its dearth in Indian IT firms, and how to bridge that gap. The importance of succession planning can be understood from the fact that it provides an efficient workforce, reduces costs and helps a company attract the best talent available on the market. This paper discusses how Indian IT firms can bridge this gap.

**Keywords:** Succession Planning, Human Resource Management, India

### **1. Introduction**

There has been a heavy demand for IT professionals in India ever since the dotcom boom of the late 90s. With new businesses being set up and multiple products and services being launched, there is a massive talent crunch in this sector. The shortage of skills and technology advancements have forced companies to become reliant on foreign professionals to ensure employability external sourcing (FES). The demand for software professionals exceeds supply by three to four times and is estimated to grow exponentially in upcoming years. Demand for candidates with Java, HTML5, css3 and CSS skills is high as per a Google report. Demand also exceeds supply in other technology domains such as SAP, Oracle and application management.

One of the main reasons for the shortage of talent is the lack of succession planning in Indian IT firms. Succession planning involves identifying the gaps in your workforce over a period of time and carrying out various activities to fill those gaps in an efficient manner. This can be done by recruiting new employees from an external source or by promoting existing employees with the required skill set from within the company or by a combination of both.

Some of the factors that contribute to the lack of succession planning are -

- a. A lack of a full-fledged, planned and documented manpower policy
- b. Absence of effective communication between the HR department, the senior management and different departments
- c. Lack of an organised training program for employees

India has emerged as a prominent global player in the IT industry. Over a period of time, Indian software professionals have established themselves in global markets and earned respect for their quality services. It's no wonder that there is so much demand for skilled talent in this sector. It is believed that by 2025, India will generate a total revenue of more than \$400 billion from IT exports and will provide employment to around 4 million IT professionals. This substantial growth will create new opportunities for Indian IT professionals. The demand for talented professionals of the IT sector is likely to exceed supply by 3-4 times by 2020. This will create a huge demand for talent and it is necessary that Indian firms evolve their business models to ensure that they are able to attract the best human resources available on the market.

The increasing demand and subsequent skills shortage in the IT sector can prove to be disastrous for Indian firms. This is because with an acute shortage of qualified manpower, companies would have an increased dependence on external resources like professional services firms and technology consultants. This can prove to be very costly for companies in the long run as they will be forced to pay a hefty price every time they need to hire somebody. The fact that there is always a shortage of skilled professionals in this sector will also mean that companies will have to go through a longer selection process which not only consumes resources but also takes up a lot of time and increases the risk factor for the company.

The importance of succession planning in an organization can be understood from the fact that it provides an efficient workforce, reduces costs and helps a company attract the best talent available on the market.

### **Succession planning has various advantages like:**

- a. It will give an organization the advantage of having a balanced workforce
- b. It is cost-effective and helps the company save on the recruitment, training and retention costs
- c. It will provide an organization with a more stable workforce
- d. It will ensure that the right people are in place at the right time, which provides security to the enterprise
- e. The company can appoint dynamic professionals with technological skills and management skills as they are adequately trained. This helps in increasing productivity levels at work place and improving customer satisfaction levels through increased motivation of employees
- f. Succession planning helps in better employee management by providing guidance to all levels viz executives, managers and workers
- g. Employees are assigned their roles very early in succession planning and hence does not hamper employee career growth.

**Succession planning has several disadvantages like:**

A succession plan is an explicit formalized arrangement for managing the transition of leadership and tasks resulting from employees who leave the company either by retirement or resignation. In a succession plan, the organization identifies future leaders, evaluates these people for their potential to lead and ensures that these people are given appropriate training and development. This is done in order to promote efficiency and ensure continuity in the event of a key person leaving the organization. Failure to have an established succession plan can disrupt business operations and may also result in inconsistency of work quality leading to poor productivity.

**Succession planning for IT companies can be done by following various steps:**

**Sourcing:** This is an important part of succession planning as it involves identifying the available talent in the market who would be a suitable match for the company's requirements. Apart from this, sourcing also includes, keeping track of potential employees who may have a potential to develop the required skill set and then identifying them as possible candidates to fill in gaps in future. This can be done by

- a. Keeping check on job portals like Naukri.com, monsterindia.com etc.
- b. Building relationships with recruitment agencies
- c. Connecting with candidates directly and asking them if they are looking for a job in your company and vice versa
- d. Joining networking sites like meet up, just unfollow, inndin etc. to skill up on recruiting strategies
- e. Keeping in touch with universities and colleges for placement of students with required skill sets
- f. Using social media networks to source job vacancies being posted by companies

**Selection:** Here the organization identifies the most probable candidate from the available pool of talent and shortlist him/her for a detailed discussion/interview (role play).

**Assessment:**

The candidate is assessed based on certain parameters to figure out if he/she matches the organization's requirements. This can be done by

- a. Analyzing the skills, education, and experience of the candidate with internal standards of the company
- b. Preparing a sample test for the candidate to assess his/her knowledge in a particular skill set or subject
- c. Conducting mock interviews with the candidate in order to evaluate his/her communication skills
- d. Conducting assessment centres to know various other parameters which measure how well a person can perform his job
- e. Evaluating how well candidates are on different scales viz creative quotient, analytical abilities etc.
- d. Maintaining a database of people who have been hired in the past and have worked within a particular organization so as to help in diagnosing potential candidates and understanding their skillsets. This can be done by:
- e. Doing team building exercises so as to understand how the candidate may fit into the company structure.

- f. Discussing various parameters of succession planning while working with the candidate to understand the role and capabilities he/she may bring to the organization as a new employee and past performance as an employee.
- g. Exploring a long-term role for the candidate in order to see how he/she would perform in that position over time
- h. Talking about various company policies and procedures so as to understand if the candidate understands about these aspects before hiring him/her
- i. Discussing about potential options for career growth with the candidate so that he/she is more comfortable and confident in taking up his/her role in future.
- j. Confronting the candidate with any reservations or doubts which may be there about the job profile
- k. Making sure that candidates are comfortable with the job profile
- l. Getting insight into a candidate's past performance so as to evaluate how he/she has performed in the past, what his/her strengths and weaknesses are, what kind of an employer he/she was and whether he/she has learnt from his past mistakes or not
- m. Discussing about company policies, company culture, work timings etc. so as to understand if a candidate is interested in taking up a job offer as your organization does not have flexibility in working hours.

Selection of the candidate: The most probable candidate is finalized for a face to face interview by the organization.

Interview process: Interview process can be planned in different ways which include informal conversations, reviews of candidates' performance, and presentation of cases on a particular topic. This basically helps the company understand the skill set, knowledge and behavior of the candidates.

- a. Informal communication: A simple conversation with a candidate over coffee or lunch can help break ice in getting to know about his/her personality traits, how he/she communicates with people, how he/she communicates problem solutions etc. This also gives an idea on personal grooming habits of a candidate and hence helps in better selection process
- b. Skill review: Here the candidate is asked to present at least one particular skill or subject which he/she has mastered. This helps the interviewer understand how much a candidate has understood about a particular topic and also what level of knowledge he/she has in it
- c. Case presentation: Here candidates are asked to come up with a specific case on a particular topic and present the solution to it. This helps in evaluating the skillset of an individual on case studies, the ability to think outside the box and gives an idea whether that person would be able to work with people at all levels of hierarchy in an organization
- d. Personality evaluation: A series of questions are asked to the candidate to assess his/her personality and attitude as an employee. This helps in identifying potential problem areas which may arise in future while working with the individual

Conclusion: After going through all these processes, the company can figure out whether the candidate is a good fit for their organization or not. If so, then an offer is made and accepted by both parties and eventually knowledge transfer takes place. If a candidate is not selected, then he/she may be referred to other organizations or if there are no other suitable candidates found for the position, then it may be decided that there won't be any hiring done in that role. The next section of the paper discusses the existing literature available on the topic of succession planning.

## 2. Review of Literature

Jain (2021) in his study discusses about the emerging trends in succession planning and highlights that companies have started to view internal talent management as an important aspect of their HRM strategy. The trend of succession planning is more strategy oriented as opposed to a reactive methodology. For example, succession planning has been considered by companies as an element of talent management and compensation strategies. The conventional approach to succession planning has been replaced by a new approach which is much more strategy oriented, it is more forward looking, it promotes diversity at all levels in the organization. It also helps in building awareness among employees about the opportunities available with them (internal candidates) and how they can take up these opportunities. Another emerging trend is that organizations are focusing on development of internal talent while implementing succession planning. Here they make sure that they take into consideration the talent available within the organization and develop these individuals accordingly. It is not just about replacing a person but it is about maintaining a certain level of talent within the organization and working towards developing it further. Following are some of the features which Jain (2021) suggests in his study on proposed emerging trends in succession planning

1. An awareness on existence of internal talent pool
2. A prognosis at an early stage
3. Incorporating succession plans into training and development strategy of an organization
4. Focusing on key positions
5. Prevention of burnout
6. Recognition of the requirements of talent
7. Managing the transition process
8. Involvement of management and HR department in succession planning strategy
9. Contributing to value creation and financial growth of an organization

Jain (2021) highlights that there are three key aspects which organizations can focus on in order to develop internal talent pool within their organization

1. Identifying opportunities for internal candidates within the company through talent mapping
2. Internalization is a process where individuals have awareness about both the external job opportunities as well as internal opportunities due to various reasons such as merit-based rewards, career movement etc.
3. There needs to an understanding of what the key positions are in an organization, how succession plan for these positions can be implemented and how the transfer of knowledge can take place

Another study done by Neville (2018) also highlights that with increase in adoption of technology leaders have started adopting more active or strategic approach towards succession planning as opposed to being more reactive or tactical in their approach. Here they make sure that they focus not just on replacements but they focus on developing internal talent pool. This may go along way in ensuring retention of talent within the organization as well as building a culture where the employees feel empowered and appreciated which is critical for them to feel motivated and find meaning in what they do.

In his study, Neville (2018) has identified two key aspects which are essential for a long-lasting succession planning strategy



1. To identify the right people to fill in the position
2. To ensure knowledge transfer before and after a transition

The first requirement is to identify the right person who can fill in the position. This is very critical and here it needs to be assessed whether there are any internal candidates available within the organization who can fill in that role. If so, then they need to be nurtured accordingly as they will be taking up key roles in upcoming years and also they will be working with newer technologies which are going to enter the market.

Another study by Arora and Anand (2016) focuses on identifying key success factors for implementing a successful succession planning strategy. The research study demonstrates that, in order to achieve the right fit between employee and job the companies should focus on the following aspects

1. Position requirements
2. Organizational culture
3. Needs of business environment
4. Compensation schemes in place
5. Key performance indicators
6. Existing succession planning policies and procedures are maintained at all levels
7. Actively engage employees in succession planning
8. Prepare employees for change and help them be prepared to work under multiple roles and eventually become a successful internal candidate
9. Developing qualities of high performers in the organization
10. Training can be done on job rotation and career progression at various levels within the organization
11. Utilizing employee-assessment tools as an invaluable tool for identifying skills gaps/opportunities, weak areas, strengths etc.
12. Focus on identifying leaders as a key component of succession planning
13. Utilizing online tools such as social media, intranet etc. to have better command over internal talent pool
14. Centralize critical skills required for compliance and business function
15. Evaluate the employee analytics technologies for identifying potential job/roles/severity level mismatch between current role and role requirements
16. Build an organizational capability to identify opportunities within the organization and plan accordingly
17. Indemnity needs to be considered when making decisions about promotion, relocation and promotion of internal candidates in future
18. When assessing potential candidates, they need to be assessed on the basis of their attributes and skills. This should also take into consideration their potential (for career development)
19. Utilize a wide range of talent pool available within the organization

In order to develop internal talent pool in an organization, organizations need to continuously assess whether they are making use of all resources available within the organization or are they limiting themselves to only external candidates. Organizations need to assess whether there are any internal candidates who can be groomed for these roles or if there is a requirement for external hiring.

Nishant (2018) suggests that organizations can create their own own assessment tools and utilize them during the assessment of potential candidates to ensure they are able to assess a candidate objectively and also make sure that there is no bias from any department.

There are many websites which provide these type of assessments for companies. Organizations can use these tools for continuous learning and for identifying where gaps are in their industry. Organizational learning is always a good process which should be constantly worked upon as in order to maintain organizational agility and flexibility as well as attain high performance in the organization it's necessary.

Kumar et al. (2022) suggests that employees who perform at a high level can be groomed and they can also be transferred to another department or company. These types of employees can then be transferred to other companies as well as to other countries. They can also be available for recruiting the best talent from different industries and from different backgrounds. According to the author organizations need to make sure that their succession planning processes are in place and active. They need not just think about the internal candidates but about how the transfer of knowledge will take place quickly and smoothly which will also help in achieving high performance within the organization.

As far as the importance of succession planning is concerned, Mishra (2020) suggests in his study that in order to achieve success in a lean manufacturing organization, it is necessary to develop a strong succession planning policy which will focus on developing internal talent pool. Organizations need to prioritize succession planning and put the same in place proactively. They need to build the capability of not just assessing employees but also building the capability by focusing on their development and skills required for future roles.

According to Keshri (2022), organizations need to ensure that their succession planning processes are such that they are able to identify potential candidates from within the organization itself as well from outside the organization and assess them according to what kind of role they can play in the organization so that they can be groomed for future roles within or outside the organization.

Organizations should be proactive and try to develop potential candidates within the organization itself and also identify how they will be groomed to fill up in different roles going forward. Organizations can identify their own people as well external talent from different countries so that their knowledge can be transferred and so that they can able to fill in better positions within the organization.

Overall, there is a paucity of research on how organizations are implementing succession planning. However, there are a few studies which have been conducted by different experts to evaluate the effectiveness of succession planning within different organizations. A study was carried out by Groves and Scarph (2017) to analyze the effectiveness of succession planning within an organization and it was found that despite the fact that they applied all the best practices within their organization, they were still unable to achieve their goals as time went on.

Sharma et al. (2019) highlighted the importance of succession planning as it can help organizations in achieving their goals and also help in achieving a high performance within the organization. They also found that succession planning is effective within an organization if applied properly however, it is one of the least prioritized activities which are carried out within an organization.

In order to evaluate the effectiveness of succession planning, Sharma et al. (2019) recommend that organizations need to continuously focus on their growth and plan for their

future by developing a strong succession plan and giving it enough priority as well making sure all employees at different levels are trained to identify potential candidates so that they can be assessed and groomed accordingly for better roles going forward.

### **3. Findings**

Importance of Succession planning can be explained through the following points.

1. Succession planning makes sure that employees who leave the organization are able to be transferred to other positions which will ensure that their skills remain in the organization and it can also ensure that employees are able to continue contributing to the organization.
2. Succession planning in an organization is important as there is a constant need for people within an organization so that they can survive and perform well so succession planning is important as it gives an opportunity to organizations as well as individuals to continue contributing with complete confidence in what they do.
3. It is important for an organization to take a proactive approach towards succession planning and make sure that talent from different levels as well as from different departments are promoted within the organization itself and groomed for future roles which will ensure that the talent pool remains within the organization for a longer period of time.
4. Organizations also need to ensure that employees are given ample time to gain experience within their respective departments so that they can perform better in their roles. They also need to continuously train their employees so that they can improve their skills and be able to perform better in their roles.
5. Succession planning is important as it helps to build an internal talent pool which can ensure that organizations are able to identify potential candidates from within their own department as well from other departments. Succession planning ensures that the organization has a strong talent pool as well as a strong internal development process which will ensure that organizations are able to achieve goals and also be able to grow and expand at their desired speed.
6. Evidences demonstrated in this research indicate that the essence of succession planning is team building, employee development, creation of strategic plans, decision making process and building better leadership skills within the organization itself so that they can be successful in achieving goals within the organization.
7. Succession planning is important to ensure that the level of work is not affected in any way and also to ensure that there is a constant process of recruitment within the organization which will make sure that new employees are hired without any issues and also at a faster pace so that organizations are able to handle emergencies as well.
8. Long term succession planning will ensure better productivity in the organization as well it will help organizations to grow and expand at a faster rate which will ultimately result in the growth of overall GDP.

### **Limitations of succession planning:**

1. Succession planning is conceptualized by different scholars in numerous ways. What one writer describes as succession planning may be described by another writer as 'developing leaders' or 'leadership development' or 'leadership training' or perhaps not at all. This has led to some confusion about the term, even within the academic community (Gardner & Scott, 2005). Most writers and researchers agree that succession planning is a strategy for making sure there are enough capable managers ready to fill senior positions when they become vacant. But there is less agreement on what exactly this involves, why it is important and how to go about it most effectively.

2. There is a great deal of variation among the literature on succession planning. Some studies base their discussions on organizational contexts, while others focus more on the individuals themselves. Some consider succession planning to be more than just a strategy for building up the management generation, while others view it that way as well.
3. In an organization, many things can be considered in succession planning; it is important to have a clear understanding of what these are and when they should be included in the process (Sharma et al., 2019). Because organizations are different and have different needs, different organizations adopt different processes and have different goals, so it will not be possible for one model to fit all.
4. Succession planning is a process which involves commitment, time and effort it is thus important that organizations make sure they implement changes within the organization as well as make sure they have the right resources and employees to be able to carry out the process within an organization successfully. They will also need to ensure they hire employees at all levels which will contribute towards organizational success so that the overall organization performs better.
5. Succession planning is a process in which there are certain steps involved and organizations need to keep these in mind while carrying out succession processes within their own organizations.

### **Suggestions**

- a) Identifying the necessary skills and time required for employees to perform well in the role they have.
- b) Providing employees with adequate training on how to perform their responsibilities.
- c) Making sure there are enough trained replacements for employees who leave the organization.

### **Conclusion**

Succession planning is important for organizations as it makes sure that they have enough skilled employees within the organization itself which will help them to achieve their goals. It also helps them to grow at a faster pace and be successful in achieving all the goals they have set for themselves.

It is important for organizations to identify future roles and make sure that employees are given adequate development opportunities so that they can perform better within their roles or the roles which may be allocated to them in future. Organisations need to make sure that there are enough resources within the organization which will support succession processes so that they do not face any issues while trying out new things or while trying to develop employees within the organization.

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**Human Resource Management**  
**Corporate Work-Life Balance Systems in Opinion of Generation Z:**  
**Systematic Review**

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**Abstract:**

Generation Z is a cluster of people who have identical birth span, Characteristics, experience, Various cultural and social influences. Generation Z And Work life Balance is Fundamental topic for organizations and managers to focus on. Generation Z is defined as those who were born between 1996 And 2010(The Australian Bureau of Statistics). Gen Z envisions a workplace that accommodates personal needs and supports overall well-being, Promoting a healthier and more fulfilling work experience. Generation Z has the ability to maintain Positive Work-Life Balance. The focus of this paper is to determine generation Z describes itself from earlier generations especially in terms of its Attitudes and Behaviors. Present Study Mainly Focuses on Corporate Work life Balance System in Opinion of generation Z. For this study a systematic literature review conducted by using scholar And Various Academic databases like EBSCO, research gate, Science Direct. 12 Peer Reviewed Paper carefully selected and analyzed. The Result of this Study found that the Work life Balance is one of the factors That Generation Z has real benefit with different Attributes of work and Life. This Paper comes to the end that generation Z is a distinct generational division that needs forward Research study and recognition from various stakeholders.

**Keywords:** Generation Z, Work Life Balance, Generational Diversity

**Introduction:**

Work and life balance is one of the challenges of the upcoming generation in the 21st century due to the improvement in technology. The work life balance is the method of

meeting both career and home responsibilities. Today, people spend too much time in the office dealing with clients and this pressure of job interferes and affects their personal life, which makes it difficult to complete the household tasks. Achieving a balance between home life and work life is becoming increasingly a priority for many people.

The name Generation Z is a reference to the fact that it is the second generation after Generation X, continuing the alphabetical sequence from Generation Y (Millennial's). In fact, we heard about Millennials. Born between 1980 and 1995, they simultaneously presented for being overly entitled and idealistic, and pitied for entering the workforce at a time when they had meager prospects at best.

Members of the generation of people born between the mid-1990s and mid-2010s are called Generation Z (The Collins Dictionary) this new world force - known as "Generation Z". Individuals born in the Millennial and Generation Z cusp years have been sometimes identified as a "micro generation" with characteristics of both generations. The most common name given for these cuspers is Millennials.

Generation Z And Work Life Balance is now becoming a fundamental topic for the various business units, organizations, and managers to cope up with this new generation as This generation Z have Numerous Expectations from the organizations and employers. Work Life balance is topmost priority for generation z to manage Balance between job life and family life.

The challenge to find balance And Quality between Career And personal life lies between the welfare of the company because they face the challenge of entering generation Z in the workplace. Related to this, research will discuss what are the different opinions of the generation z with reference to corporate work life balance.

### **Definitions Of Generation Z:**

- The Merriam Webster Online Dictionary Defines Generation Z as "the generation of people born in the late 1990s and early 2000s.
  
- "The Collins Dictionary defines Generation Z as "Generation Z is members of the generation of people born between the mid-1990s and mid-2010s.

### **Objectives Of the study:**

1. To Study the Concept of Corporate Work Life Balance In Opinion with Generation Z.
2. To understand the Workplace related Attitudes of Generation Z.
3. To Review the relationship between Work Life Balance and Gen z's Mental, Emotional and Physical wellbeing.

**Literature Review:**

To examine the new generational division such as working styles, behaviors, and lifestyles was the main sight for this research. All these attitudes are especially important to understand the influence of various aspects of society, organizations, and Community. However, some part of the literature study shows that Gen Z is a prolongation of the existing generation and Millennials. That generates experiments in Differentiate Generation Z to Millennial. To Describe Corporate work life balance in the opinion of Generation Z And how different work attitudes have positive impact on Generation Z is Systematically Reviewed. Work and life balance and individual's ability. Organizations have implemented many Work Life Balance policies, employees still facing the problems of Work life balance,

Earlier attempted studies must investigate what generation z is distinct from past age groups in different exposure of their lives, like attitudes, views, goals, and habits. By examining numerous studies and research articles researchers found that generation Z is distinct from the existing generation of millennials with their attitudes, characteristics, and behavior patterns.

**According To Deloitte Survey (2023)** A recent survey conducted by Deloitte, encompassing 14,483 Gen Zs and 8,373 millennials across 44 countries, reveals that despite progress made by employers in enabling better work and life balance and flexibility, concerns among the younger workforces. Gen Zs and Millennial are satisfied with their work-life balance. COVID-19 pandemic showed a re-evaluation of the work role plays in their lives and leading to a greater emphasis on personal well-being. They appreciate the flexibility to work from various locations, which has become a significant factor in their job satisfaction. There is a strong willingness among these generations Z to achieve better work and life balance. In fact, more than any other thing among their peers, And Subordinated Gen Zs and Millennials admire the ability to balance Work and life priorities (26% for Gen Zs and 28% for Millennials).

Nowadays, Gen Z is not interested in a stable career: The interest has shifted to a more work life balance, And Work flexibility even the Generation Z has been more systematic and expect the best in class salaries and other perks in the job, they still expect a fair degree of flexibility of job and also are surprisingly willing to relocate the work. The survey highlights that Gen Zs and Millennials believe their employers have made progress in driving greater diversity, equity, and inclusion. These generations Z value their workplaces that prioritize equality and provide equal opportunities for Personal growth.

**According To Tracy Brower (Forbes, 2022)** The show demonstrates the extent to which people are better with both full work and full lives. When employees bring unique things from their life phase and life experience to their work, it's beneficial to people, but also to the society and community. When workers feel a level of value and uniqueness from their work, it adds value to each person. Gen Z challenges the concept that a work-from-home setup is the only way to a balanced personal life. They understand the advantages of



face-to-face interactions, collaborative environments, and the human connection in traditional workplaces. Generation Z's goal is to create a harmonious work-life balance, where work enhances their lives instead of consuming them. Gen Z looks for a workplace that accommodates personal needs and supports Mental and Physical well-being, promoting a healthier and more fulfilling, flexible work experience.

**IJERPH -2019** The change in the point of view of the traditional workplace, values and willingness for career and stability of success path. These employees are not traditional thinkers, generation come up with the future-forward framework, like technological proficiencies and Technology Adapted work culture. In the past, Generation Z people chose working for small businesses (47%), but now more are choosing big companies. This is different from before when only 23% wanted to work for companies with over 1500 employees. Generation Z neglected many employers because of digital differentiators with new startups in which students were attracted in the direction of endorsing private enterprise.

**Elsevier, (2015)** Presently employers of the corporate world must go out of traditional culture and should adjust themselves for the Overall improvements if they really want their business stable all over the globe. Similarly, Organizations and employers have to show their efforts and concern to manage their workers to be happy at their workplace and to understand Generation Z workers employers must have to be in close relations with generation Z. Even if Generation Y employers have similar thoughts and perceptions, Researchers opinion is that to work with Generation Z people will change employer's perspective on the work life slightly differently.

### **Research Approach:**

A literature review directs that giving transparent reporting of various processes included in the reviewing, searching, choosing, and analyzing appropriate results for the article.

**Design of Research:** Proposed for the study is 'Descriptive' type of research design And Qualitative. This Particular Research Article is based on Secondary Data which researchers collected from various sources.

The researcher examined and reviewed the studies applicable for the subject by thorough research with reference to work life balance opinion mainly on various Academic Databases like ResearchGate, EBSCO, Science Direct, Google Scholar etc.

Literature is systematically reviewed by selecting appropriate and authentic search results which include various journals, articles, blogs, and various survey reports.

**Conclusion:**

The inferences of this paper have two aspects: first to overview the generational difference of existing body of knowledge and second is practical insights of different opinions of generation Z with reference to work life balance.

After Thorough Analysis It can be said that After thorough analysis it can be said that even though there has been much deliberations on changing Work attitudes and inculcating work based culture and habits, it is beyond doubt that much needs to be done to facilitate the current Generation Z, with the onset of technology and use of more complex systems policies, Human Resource Management needs to update to this new generational gap, to provide more harmonious work culture And Different policies.

Considering the above reviews, employers and organizations should have to analyze their focus on employees' work and life balance and various facilities they provide to better work and life balance. Also, companies should share flexible schedules of work arrangements, Hybrid Work Mode, to highlight different shifts and work from home options.

The future research options should explore further the complexity and diversity across different contexts, cultures, and patterns and to analyze the opportunities and challenges so whenever they come across a rapidly changing world as studies recommended.

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## **To explore latest outsourcing trends in Hospitality industry**

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### **Abstract:**

The study has been carried out to explore the latest outsourcing trends in hospitality industry. The data was collected via survey questionnaire from different category from 3 star to 5-star hotel. Purposive sampling was used for data collection. The study establishes that hotels tend to outsource non-core functions such as kitchen stewarding, cleaning services of public areas, horticulture, security services, sewage treatment plant and elevator sharp cleaning this study has that there is an increase in the outsourcing trend in hotel core areas also like Valet service, marketing and digital advertisement, website development to provide customer support by chat bot. The results of the study generalized the latest outsourcing trends significantly anticipated to boost to improve guest experiences by technology-based application and with increased emphasis on sustainability. As the hotel industry grows, outsourcing will play a bigger role in preserving competitiveness and providing the best possible experiences for guests in future.

**Keywords-** Technology, sustainability, customer experience enhancement

### **Introduction**

The hotel sector has many challenges related to sustaining profitability, efficiency, and customer satisfaction in today's fiercely competitive market. Owing to these difficulties, hotels are increasingly using outsourcing as measure to improve service quality, save expenses, and streamline operations. Contracting out certain core and non- core operations to outside suppliers rather than managing them internally is known as outsourcing. The hotel industry has seen a notable increase in the outsourcing of several activities, including food services, IT support, and housekeeping and maintenance.

In the hotel industry, outsourcing has many different reasons. First of all, it enables hotel management to assign non guest facing tasks to specialized service providers and concentrate on core areas like guest experience and brand building. Second, because external suppliers can supply services more cheaply and efficiently, outsourcing offers the possibility

of cost reductions through economies of scale. Furthermore, outsourcing gives hotels an option of having specialized knowledge and technologies that are generally not available to them. This improves their ability to operate creatively and efficiently.

Outsourcing in the hotel sector has its own problems, despite its many benefits. The effect on service quality and brand image is one of the main worries. To make sure that functions that are outsourced meet the required standards, hotels need to carefully choose their outsourcing partners and create strong service level agreements. Furthermore, depending too much on outside vendors can make operations more difficult to coordinate, communicate, and hold accountability, which requires careful management and supervision.

### **Research Problem statement:**

This study aims to contribute to the body of knowledge that exists in this field and offer useful information to practitioners, policymakers, and scholars who are interested in hospitality management and the role of outsourcing and its effect.

### **Objectives:**

To investigate latest outsourcing trends in the hospitality industry

To list the main challenges and opportunities with outsourcing in the hospitality industry

To evaluate the tactics and best outstanding trends used in the hospitality industry

To provide suggestions on outsourcing strategy for hotel management and industry stakeholders.

### **Literature Review:**

This research (Acharya & Paudyal, 2015) demonstrates that, when a suitable service provider is selected to handle a hotel's facilities service operation, outsourcing has a positive effect and brings more value to the organization. The hotel's main business is enriched and made easier to operate by relying on outsourcing. Value for money and customer satisfaction is high, rather than high risk which benefits the company (clients and service provider). The findings point out that outsourcing contributes to the value in the hotel industry improves operation efficiency especially related to customer satisfaction and profitability.

This study (Akshita Tiwari, 2023) says that outsourcing enables hotels to become more competitive, helps in reducing costs and become more flexible. Hotels have become more inclined to utilize technology. It also helps to handle the issue of staff shortage. The study highlights that hotels may increase profit by opting for outsourcing. They can reduce costs, and improve the processes related to quality control.

This study (Azurin Sani, 2013) covered four elements: cost, suppliers, risk and income, and resource distributions. It also looked into the areas that Malaysian hotels outsource and the factors that influence the reasons to choose outsourcing. The results of this study showed that hotels expected that external outsourcing providers would persuade them to make use of

the management knowledge they offered since they relied on the knowledge that these providers would be efficient in the outsourcing function.

In this research (Espino-Rodríguez M. G., 2020) findings reveal the influence of organizational culture on outsourcing. The study shows that the level of outsourcing is adversely affected by the culture of hierarchy. The study's other finding is how the development culture also has an adverse effect on outsourcing levels. This indicates that there is less reliance on outsourcing in hotels that employ creative thinking.

This Research (Espino-Rodríguez T. F., 2023) suggests that outsourcing takes into account three factors namely social, economic, and environmental and it also leads to knowledge creation. This research on hotel outsourcing improves our understanding, and the development of new theories which help us to explore the effect various societal factors have on the growth of outsourcing. The study indicates that from viewpoint of social, economic, and environmental factors, more sustainable way of outsourcing will result in a more sustainable performance of the hotels.

This paper (Hiamey, 2012) covers the problems encountered by hotels that use outsourcing in Ghana from the perspective of transaction and cost economics. The findings of the study show that few of the challenges can be explained by using the the transaction cost economics theory. It brought forward that quality of outsourced staff if they lack in terms of skills does not add any value to the hotel. Cost is the main factor why hotels choose outsourcing. The findings reveal that if the cost involved in outsourcing is high the hotels avoid outsourcing.

It has been observed that this study (Lamminmaki, 2003) on hotel outsourcing has been helped by the guidance provided by the (transaction cost economics) TCE model. Segregating the three TCE qualities into their component parts and underlying causes has been especially useful in understanding about outsourcing.

Based on this study's (Natalia A. Zaitseva 1\*, 2017) findings, The authors proposed the various effects that organizations in the services and hospitality sectors may experience by using outsourcing services. They also pointed out that the direct and indirect benefits are mainly because of economics, as decrease costs because of outsourcing clearly shows increase in the profit levels. On the other hand, job losses acts as a demotivating factor among regular employees. These are examples of both direct and indirect negative consequences that are connected to the social element to be considered while outsourcing.

The results of this study (Ramírez-Fierro, Outsourcing Performance in Hotels: Evaluating Partnership Quality, 2018) suggests how outsourcing effects the hotels. This study brings to the fore that managers and other seniors need to be aware of the benefits of outsourcing and should try to establish close relationship with the suppliers and coordinate with them. The study also informs that outsourcing can improve partnerships. The market

competition also demands that the hotels should have outsourcing management processes to become more competitive and have better occupancy in hotels.

The provided theories in this study (Rima Žitkienė, 2019) have been classified into three groups: theories that relate to the companies' economic and cost-cutting decisions, theories that cover strategic management, and theories that are associated with decisions about cooperation and development.

In this study (Satpathy, 2011) AHP theory has been proposed to select outsourcing services in hotel mainly in the Security, Maintenance, Laundry and transport department. The hotels select an outsourcing supplier based on their competency and efficiency today, though the same vendor might not be able to provide services in the future. With time the data becomes fuzzy in nature and the authors have relied on the experience of managers for selecting an outsourcing supplier. The study brings out the importance of administrative convenience in selecting a supplier for outsourcing.

The study (Sebahattin Yıldız\*, 2014) compared the phenomena of outsourcing in the seasonal hotels and permanent hotels. This study revealed that seasonal hotels relied more on outsourcing as compared to the permanent hotels. The main reason behind this as revealed in this study can be that in seasonal hotels outsourcing is a necessity. The study establishes that the risks with regards to outsourcing are same in both seasonal as well as permanent hotels. Seasonal hotels rely on outsourcing for most of the services both related to maintenance and cleaning. In permanent hotels outsourcing is used more for security.

This research (Terry Lam\*, 2005) suggests that managers who want to succeed in outsourcing should use cross-cultural management strategies. Due to differences in company missions, aims, and strategies, the top management of the hotel and the supplier may not get along, especially when it comes to outsourcing.

The findings of the research (Tomás F. Espino-Rodríguez, 2022) suggests there are many benefits of outsourcing related to reduction in cost, increased efficiency, and other aspects related to strategic management. This is proved to be correct when suppliers provide innovative services and products and present more creative ways of work. The findings show that due to numerous advantages, outsourcing is gaining popularity. Nevertheless, considering that innovation might affect service prices, supplier innovation has almost negligible effect on cost-related competition and does not enhance it. Innovation from suppliers helps improve the competitiveness of delivery, quality, and flexibility—but not the cost.

### **Research Methodology:**

Table 1 Shows the respondents profiles for outsourcing, The departmental manager comprise (71%) of the respondents, followed by department executives (27%) and others (1.2%) that the filled the questionnaire .

**Table 1. Demographic profile**

Position	Frequency	Percentage
Departmental manager	25	71%
Executives	20	27%
Others	02	1.2%

Table 2 Represents the category of hotel for questionnaire filled by the major 5star category of hotel for outsourcing that is shown ( 33.3%) and 4 star category hotel (30%) and 3 star category hotel (20%)

**Table 2. Category of hotel**

Category	Frequency	Percentage
5 star	20	33.3%
4 star	18	30%
3 star	12	20%

Table 3 shows that frequencies for outsourcing in the department of Front office for Technology (100%), Food production for raw material (100%) and Food and beverage service alcoholic beverage (100%) and Renewable energy outsourcing frequencies shows (64%).

**Table 3. Departments for outsourcing**

Departments	Outsourced		Not outsourced	
	Frequency	Percentage	Frequency	Percentage
<b>Housekeeping</b>				
Laundry / cleaning	38	76%	12	24%
<b>Maintenance</b>				
Security / Surveillance	40	80%	10	20%
Renewable energy	32	64%	15	36%
HVAAC	35	70%	18	30%
<b>Food production</b>				
Raw material vendor	50	100%	-	-
Waste management	35	70%	15	30%
<b>Front office</b>				
Technology / Reservation	50	100%	-	-
Aggregators	35	70%	15	30%
<b>Food and beverage service</b>				
Alcoholic beverages	50	100%	-	-
Technology integration	45	90%	5	10%



Table 4 Shows outsourcing variable frequency challenges faced by hospitality industry on dependency risk is maximum (90%) whereas data security challenges seems less ( 50%).

**Table 4. Challenges for outsourcing**

Outsourcing Variable	Frequency	Percentage
Quality control	32	64%
Cost management	34	68%
Data security	25	50%
Team Dynamic	38	76%
Dependency risk	45	90%
Flexibility	24	48%

Table 5 Shows opportunities for outsourcing more focuses on Customer experience that is (96%) whereas less on Sustainability (92%).

**Table 5. Opportunities for outsourcing**

Outsourcing Variable	Frequency	Percentage
Cost savings	37	74%
Focus on Sustainability	46	92%
Customer Experience	48	96%
Increase efficiency	40	80%
Risk mitigation	43	86%
Time saving	30	60%

Table 6. Presents the finding based on a series of independent sample T test. The test was done to examine if there is any significant differences between the traditional outsourcing and latest outsourcing trend. The analysis shows that there is significant difference between two groups mean of all latest outsourcing trends is higher than the mean of all traditional outsourcing.

**Table 6 Difference's mean between Traditional and Latest outsourcing trends**

S r. n o.	Item Variable	Traditi onal outsou rcing mean	Latest outsou rcing mean	Traditio nal outsourc ing SD	Latest outsourc ing SD	t- value	Signific ant
1	Scope of services	3.9	4.8	0.16	0.12	65.37	P<0.01
2	Technology Integration	4.01	4.9	0.3	0.16	38.02	P<0.01
3	Customer enhancement	4.2	4.9	0.9	0.13	11.18	P<0.01
4	Sustainability practices	3.9	4.89	0.8	0.1	17.84	P<0.01

5	Employee engagement	4.11	4.5	0.02	0.13	23.75	P<0.01
6	Cost structure	4.6	4.8	0.13	0.12	16.42	P<0.01
7	Customization and flexibility	4.5	4.7	0.1	0.36	7.78	P<0.01

### **Recommendation and Suggestion:**

It is recommended outsourcing practices play important role in manageability. There are lots of opportunities present in hospitality industry for outsourcing. The hotel management and stakeholders can take decision regarding outsourcing for supply chain management and smooth operations. As the sample was small further study can be conducted on a bigger sample size to generalize it.

### **Conclusion:**

This study examines the different variable of outsourcing it focuses more on recent outsourcing implementation tactics which are technology integration, sustainability and customer experiences. Previous studies focus on non- core areas only but in this research, study covered core areas. Further scope of research can be taken in detail in all departments. For this study the sample size was small hence it is difficult to generalize and this area can be considered for further research.

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## **A Systematic Review of Sustainable Practices in the Wine Industry - An Indian Perspective**

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### **Abstract**

The Indian wine industry has witnessed significant growth in recent years, with a surge in both production and consumption. As awareness around environment is growing, it is essential to adopt sustainable practices. Adoption of sustainable practices like organic farming techniques, less use of pesticides, use of glass bottles, energy conservation and multiple others are need of hour. This study aims to do systematic review to explore sustainable initiatives with the Indian wine sector. The systematic literature review was based on published research papers on sustainable practices in wineries from different countries like Italy, Spain, New Zealand, Napa Valley in The United States from websites like Google Scholar, Semantic Scholar, ProQuest, Scopus.

The purpose of this research was to explore sustainable practices followed by Indian Wineries. Maharashtra is known as the wine capital of India and was the first state to implement wine policy in the year 2001. This lead to rise of numerous wineries. Most prominent names include of Sula Vineyards, Soma Vineyards from Nashik, Fratelli Wines from Akulej, Grover and Zampa from Karnataka and Maharashtra and many more.

**Keywords** – Farming, Wineries, Sustainable Practices, Adoption

### **Introduction:**

With days passing by, the need and importance of sustainability in the operations or manufacturing is highly essential. To survive and sustain in the business, sustainable practices teaches us to understand environmental impact of our actions, enhance social responsibility by giving to the community and ensures optimum use of resources available. Within the Indian Context, a report published by Minhas, A, 2024, on Statista website, predicts 11 percent growth in Indian Wine Market by 2025. This systematic review, aims to provide better understanding on the initiatives taken, challenges faced by the wineries.

India, a country blessed with rich cultural heritage and diverse agricultural land, has seen a growing industry of wines production and consumption in last 10 years. Nashik in Maharashtra and Nandi Hills region in Karnataka emerged as main wine producing regions. Nashik is also known as the capital of wine in India. Research published by Ministry of Food Processing Industries, state India has dynamic scenario in terms of winemaking. Indian winemakers are adaptable and use of technology in techniques is observed. Unlike sticking to the old traditions followed in old wine countries.

In the article published by Mr. Das, 2023, on Mongbay website, author discusses impact of climate change on Indian wineries. The results are eye opening and mentions need of development of heat resistant grape varieties, overcoming challenges of inconsistent rainfall patterns and hot climates. The further discussion states – Adaptability is Key and that every winemaker has to adapt and work ahead. As industry is still young and continues to mature, there is absolute need to sharing knowledge and creating awareness on integrating sustainable practices to address environmental issues, promote inclusivity and diversity, doing your bit towards to the community and meeting consumer expectations by ethical means. Interestingly, there are research papers published on Consumer behavior on buying organic, sustainable products in New Zealand. New Zealand is the country to implement world leading sustainability program in the year 1995. The six focus include of Water, Waste, People, Climate Change, Plant Production and Soil.

The paper aims to review existing literature on sustainable practices in the Indian wine industry and explores dimensions on viticulture process, waste management, energy conservation. Sustainability reports published by Sula Vineyards played a vital role in understanding the context for Indian wine industry.

Ultimately, this systematic review aims to contribute to the growing body of knowledge on sustainable practices in the wine industry, with a specific focus on the unique context of India. By synthesizing existing research findings and identifying gaps in the literature, this study seeks to inform future research directions, policy development, and practical strategies for enhancing sustainability in Indian winemaking practices.

### **Significance of the research –**

This study aims to add to the knowledge on practices followed by Indian wineries. It further identifies while adoption of sustainable practices is necessary, yet there are challenges to be addressed. The challenges can include obstacles due to regulations, lack of resources and most certainly lack of awareness towards the subsidies, government schemes and funding available. While it is also important to consider innovative solutions requirement for water resource (especially areas with less rainfall). One of the goal of Sustainable Development Goals, Inclusion is important aspect of any business and it is necessary to fulfill your social responsibility. Increasing consumer awareness and demand for sustainably produced wines can further boost the adoption of sustainable practices in the industry.

**Research Aim:** To conduct a systematic review of sustainable practices in the wine industry from an Indian perspective, aiming to analyze and blend existing literature on sustainability initiatives, challenges, and outcomes within the Indian wine sector.

### **Research Objectives:**

- To review and analyze the current state of sustainable practices adopted by Indian wineries in areas such as vineyard management, production processes, waste management, and energy efficiency.
- To identify the key drivers and motivations behind the implementation of sustainable practices in the Indian wine industry.
- To evaluate the challenges and barriers faced by Indian wineries in implementing and maintaining sustainable practices.

### **Literature Review**

According to Martins, A. A., Araújo, A. R., Graça, A., Caetano, N. S., & Mata, T. M. (2018), in their study based in Portugal, describe sustainability of wine production is a critical issue in the industry. They mention it is significant to evaluate and improve wine products and processes for the betterment. They emphasize conducting a comparative evaluation of different types of wines to identify strategies which are proving beneficial in the industry. As per the Sula Vineyards Report of Sustainability and Responsibility Report 2023, the highlights include of Sula's commitment towards sustainability and responsibility. The company focuses on ethical business practices and pay attention to environmental conservation and corporate social responsibility. Sula Vineyards' focus aligns with the industry-wide trend towards sustainable viticulture and winemaking practices. Following sustainable practices are adapted by Sula, to improve water use efficiency in operations by 30 percent, 100 percent reuse of wastewater in the wineries and resort, promoting renewable energy by using 60% solar energy and ensure zero waste in their landfills. Sula vineyards has 25 years of experience and is improvising to be better.

Research by Jones and Dwyer (2018) discusses the significance of vineyard management techniques, soil health preservation, water conservation and maintenance of biodiversity. Soil health is vital for the growth of the vine and according to the old wine countries 'Terrior' decides the final product. Terrior contains of four factors – Tradition, Soil, Terrain and Weather. Moreover, corporate sustainability, as demonstrated by Sula Vineyards' comprehensive sustainability approach, involves harmonizing economic prosperity with social well-being and environmental conservation. (Sustainability and Responsibility Report Financial Year 2023, 2023)

Freelance journalist, Da Costa, A., 2010, mentions Sula Vineyards, as founding force of the Indian Wine Industry. By adapting organic viticulture methods, soil health can be maintained and be rich and fertile. Grapes are known as Dirty Dozen fruit due to use of pesticides on huge amount, but initiatives like using natural alternatives like Sulphur and biological pest control methods or companion farming, Sula shows their dedication.

Initiatives such as solar water-heating, energy-efficient lighting, and water conservation strategies underscore Sula's dedication to responsible resource management and conservation and also highlights economic advantage in terms of savings. The vineyard's comprehensive waste management system, including a bottle-recycling program and vermicomposting facility, highlights its commitment to circular waste utilization and sustainable practices. Da Costa, A. (2010, August 10)

In the article published by Pullman, M., Maloni, M., & Dillard, J. (2010), concept of sustainability in the global wine industry, prioritizes leaving the land in fertile form for the upcoming generations. The document further discusses about challenges like rise in energy prices, water scarcity, exposure to chemicals for better yields. The paper discusses three pillars sustainability in the wine industry – social, environmental and financial stewardship. The paper offers a thorough analysis of the world wine market, emphasizing the differences between "Old World" and "New World" wine producers. It highlights the significance of sustainable practices in the face of a competitive market and addresses the rise in the demand for wine worldwide as well as changes in customer tastes. The document also includes a number of case studies from various geographical areas that show the variety of approaches used by the wine business to sustainability. Pullman, M., Maloni, M., & Dillard, J. (2010).

### **Research Methodology:**

**Literature Search:** Conducted a systematic search of academic databases, including PubMed, Scopus, and Web of Science, using keywords such as "sustainability," "wine industry," "Indian perspective," and related terms.

**Inclusion Criteria:** Selected peer-reviewed articles, reports, and studies published between 2010 and 2023 focusing on sustainable practices in the Indian wine industry.

**Data Extraction:** Extracted data on sustainable initiatives, challenges, motivations, and outcomes from selected literature.

**Synthesis:** Organized and synthesized extracted data thematically, focusing on vineyard management, production processes, waste management, energy effectiveness, and social responsibility.

**Critical Analysis:** Conducted a critical analysis of the drivers, impacts, and barriers associated with sustainable practices in the Indian wine industry.

**Limitations:** Recognized limitations, including potential biases in the selected literature and gaps in available research.

### **Findings:**

According to report published by Ministry of Food Processing Industries Government of India, following sustainable practices are used by wineries – maximise winery by – products, antibiotic resistance management, wastewater treatment, energy content and combustion and other practices. Indian wineries employ diverse sustainable practices, including organic and biodynamic viticulture, water conservation techniques, and renewable energy adoption. Sula Vineyards serves as a leading example, implementing sustainable

viticulture practices, energy-efficient technologies, and comprehensive waste management systems. (Ministry of Food Processing Industries, 2023)

The wine industry can collaborate with local community and consumers to promote sustainability. One of the initiative can be pairing up with Non – Profit Organization, Government Agency and Committee to create awareness about schemes available for certifications, financial schemes to implement sustainable practices. Plus with help of these collaboration awareness about conservation of energy and water for sustainability can be helpful for winery and broader community. According to research paper published on consumer behaviour towards buying organic product in New Zealand reveals consumers are likely to buy organic products to fulfill their part and boost adaption of practices. Adapting three lines of people, planet and sustainability wineries can implement practices and leave land in good shape for upcoming generations. Practicing this practices also helps in brand reputation and goodwill.

### **Conclusion:**

With climate change, global warming leading to warmer winters and unprecedented rainfalls accepting sustainable wine practices is commitment required to be successful and survive longer in the race. Key identified practices include use of –

1. Use of organic farming – Which includes of less use of pesticides, use of natural alternatives, or natural pest control methods.
2. Water conservation – The universal truth of ‘Water is Life’, is the most important element in agriculture. Water scarcity has been a known issue and hence needs to be handled well with practices like rainwater harvesting, creating lakes for saving water.
3. Adapting technology – Using accurate technology, weather forecast can help in saving the crop / yield.
4. Renewable energy – Using solar energy, proves to be beneficial to the environment plus economical.
5. Sustainable packing – Use of biodegradable material and reusable material in packing the product is advisable and safe for the environment.

This study has further scope to research the topic in depth by comparing sustainable practices used in two different wineries.

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