Journal writing is a voyage to the interior.
Christina Baldwin

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From the Editor's Desk

It is a great pleasure to release volume 12, Issue 2 of International Journal on Global Business Management and Research. Unlike our previous issues, this issue also has brought highly productive and standard papers for the benefit of the readers.

Each of the papers discussed is significant in its own way. We are very thankful to our contributors and readers of our journal worldwide, without whose patronage this wonderful journey may be impossible. We welcome innovative contributions from corporate members, academicians, and researchers across the globe to contribute and benefit from our journal.

Thanks and Regards

Dr.Uma Raman M
Dr.Aistė Vitkūnė

The art of writing is the art of discovering what you believe

- *Gustave Flaubert*

TO PROBE THE EFFICACY OF EMPLOYEE MOTIVATION ON MILLET INDUSTRY

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ABSTRACT

The point of the review was to figure out the impact of worker inspiration on associations and the various sorts of inspiration. It additionally gets an understanding on what propels a representative to work better for the general advantage of the association, the concentrate likewise gives a road to the association to assemble data concerning representatives' opinion on their work or how workers see their present work. The postulation likewise dissected different prize frameworks and how it very well may be utilized by an organization, additionally checked out into authoritative culture and what it means for worker conduct. Worker inspiration is the imagination, the energy levels, and the responsibility that the representatives bring to their work. Even though representative inspiration does not straightforwardly impact an association's development, it resembles a vital precondition because an absence of inspiration assumes a significant role in gathering the organization's objectives. In an association, spurred representatives can prompt expanded efficiency and accomplish more significant levels of results. Thusly, now, every association attempts to deal with their HR office to keep their representatives roused.

Key words *- Employee motivation, rewards, Work performance, Job Satisfaction, Effects*

I.INTRODUCTION

Worker inspiration is perhaps of the main considerations in the field of human resources. Competent and loyal representatives are a base for successful associations, and subsequently holding them is fundamental. Getting ready for new labourers is dreary and requires more resources. In this way, the longer the precaution stays with the association, the better it is for the association. Many elements, like climate, capital, and HR, impact how an association performs. Despite this, human resources are thought to have the greatest impact on an organization's performance. It is real along these lines to discuss that an association needs to spur its representatives to achieve its expressed objectives and goals. In this section, inspiration is all around made sense of. Clearly, inspiration has been seen in various ways. Numerous scientists have attempted to think of a brief hypothesis to plan inspiration, yet all get various thoughts. Numerous theories have been developed that have a significant impact on organizational behaviour, and research has been conducted on this topic. For instance, Herzberg's hypothesis of inspiration (1959) is not yet utilized these days. As per Staw (1976), Herzberg was one of the primary people who recognized characteristic and extraneous inspiration. That qualification has explained and furthermore helped in spurring representatives in the working environment (Staw 1976).

Maslow's Need hierarchy

Abraham Maslow created Maslow's Need Hierarchy, in which he outlined the importance of various needs at various times. Maslow has given a structure that assists with understanding the strength of necessities and how an individual manoeuvres from one need to the next when the essential requirements are satisfied.

McClelland's Motivational Theory

The hypothesis of David McClelland begins with authority gathering, and he "centres around three critical necessities that he believes are socially obtained and can consequently be changed through preparation."

It does not manage improvement and relapse between needs, however, with the requirements and intentions that hugely affect work productivity and adequacy. The necessities of McClelland, which are likewise alluded to as the need might arise, incorporate.

- Need for affiliation
- Achievement Needs
- Power Needs

Factors that impact Employee Motivation

In this section, we look at some of the key factors that impact Employee Motivation.

- ➢ Work environment
- ➢ Recognition and rewards
- ➢ Opportunities for growth
- ➢ Workload and stress
- ➢ Workload and stress
- ➢ Communication
- ➢ Leadership

Statement of the Problem

- The study gives a clear picture of the company's departments. From the review, the specialist had the option to discover a portion of the significant variables that persuaded the workers.
- Factors like monetary impetuses and non-monetary creative, execution examination framework, great connection with colleagues, limited time open doors in the current work, representative cooperation in direction are a lot of impact the level worker inspiration.
- The study also makes it abundantly clear that the business is ardent about motivating its employees and that their current efforts have so far been successful. If HR is not as expected, the administration cannot achieve the ideal outcomes.
- Consequently, HR ought to be made do with absolute attention to detail to rouse, urge and instigate them to contribute their greatest for the accomplishment of the business targets.

Need for Study

- To study the level of employee motivation
- To study the of financial motivation non-financial motivation
- To study how supervisor can influence motivation
- To know what are the de-motivation factors.

Objectives of Study

- ❖ To analyze the important factors which are needed to motivate the employees.
- ❖ To study the effect of job promotion on employees.
- ❖ To identify the effect of monetary and non-monetary benefits of employee provided by organization on the employee's performance.
- ❖ To know the employee satisfaction on the interpersonal relationship exists in the organization.

Limitations of the Study

- The data was collected through questionnaire. The responds from the respondents may not be accurate.
- The sample taken for the study was only 135 and the result drawn may not be accurate.
- Since the organization has strict control, it acts as another barrier for going data.
- Another difficulty was very limited time-span of the project.
- Lack of experience of researcher.

Scope of Study

- ✓ The study is intended to evaluate motivation of employees in the organization.
- ✓ A good motivational program procedure is essential to achieve goal of the organization. If efficient motivational programmers of employees are made not only in this organization but also any other organization.
- ✓ The organizations can achieve the efficiency also to develop a good organizational culture.

II.REVIEW OF LITERATURE

Attipoe, wright Evans et al. (2021), performance reviews improve employee performance by helping them reach their full potential in fulfilling their company mission and by providing employees and managers with information that they can use to make business decision. They also give employees feedback and are thus an engine for personal and professional development. However, performance evaluation presents problems due to its complexity.

Rosie, (2020) also highlighted that effective management starts with communication, a clear communication filter though the hierarchy on an acceptable tone adjusted by firm senior team to boost the motivation, morale and to define the target all employees should be aiming to deliver.

Saunders M, (2019) "For many research questions and objectives the main advantage of using secondary data is the enormous saving in resources, in particular the time and money". Another advantage of secondary data would be data being readily available to download for analysis which creates more time to think and interpret the data.

Dunlop, M., (2018), ERG theory simplifies the "Maslow's Hierarchy of Needs Theory". It is described that employees seek three basic needs. These are existence, relatedness, and growth. Like Maslow's theory, as each need is accomplished, another can need would be satisfied.

Green Jr. P et al. (2017) argues that employees have three expectation of the firm they work for and how firms would fulfil these will determine the performance of both the employee and the firm. Firstly, "positive emotional state/experience." It is argued by the researcher that employees would compare their state of emotion expectation with their actual emotional work experience which then delivers the positive or negative work attitude within the employee's.

Elizabeth Boyed et al (2016) focused on the risk factors associated with the mining industry, management has to ensure that employees are well motivated to curb the rate at which employees embark on industrial unrest which affect performance, and employees are to comply with health and safety rules because the industry contribute hugely to the Gross Domestic Product (GDP) of the country's.

Panagiotakopoulos (2013) decided that factors affecting staff motivation at a period where the financial rewards are kept to the least to stimulate employee performance. So, management personnel's reasonability to give a reason to do something their workers to work as per the expectation to improve the organization.

Lockley (2012), on the other hand, addresses the same issue focusing on cross-cultural differences between employees. Namely, culture can be explained as knowledge, pattern of behavior, values, norms, and traditions shared by members of a specific group (Kreitner and Cassidy, 2012), and accordingly, cross-cultural differences is perceived to be a major obstruction in the way of successful employee motivation.

"Al-Zawahreh and Al-Madi (2012), an employee compares his or her job's inputs with an outcome's ratio. If the employee perceives inequality, he or she he will act to correct the inequity."

III. RESEARCH METHODOLOGY

A research technique is a deliberate method for tackling research issues. The research system manages research strategies and thinks about the rationale behind the strategy. It additionally manages the objective of the examination study, the strategy for characterizing the issue, the kind of information gathered, and the techniques utilized for gathering and dissecting information. It additionally manages the objective of the exploration study; the technique is characterizing the issue, the kind of information gathered, and the strategies utilized for gathering the information.

RESEARCH DESIGN

Research configuration is an outline of a logical report. It incorporates research strategies, apparatuses, and procedures to direct the examination. It assists with distinguishing and addressing the issue that might arise during the examination and investigation.

Sources of Data

The information gathered for the review is principally through the dispersion of polls; to be exact, the information gathered for the study was both essential and auxiliary.

Data Collection

The information assortment can be acquired from essential information sources as well as from auxiliary information sources. The scientists gather information from the two sources.

Primary Data

Primary data is information that has been collected for the first time. There are several ways to compile primary data. In this project, questionnaires were used to collect data. The Questionnaire was ready and disseminated to the representatives.

Secondary Data

Secondary data needed for conducting research work were collected from company website, book, and journals.

Sample Size

The size of the sample is the number of sampling units chosen from the population. A sample of 135 respondents was obtained from the populace.

Statistical Analysis Tools

- Percentage Analysis
- Chi-Square Test
- Factor Analysis
- Weighted Average method

IV.DATA ANALYSIS AND INTERPRETATION

I. Demographic Variables of the Respondents

Table 1 - Demographic Variables of the Respondents

Demographic Variable	Categories	Frequency	Percentage (%)
Gender	Male	72	**53.3**
	Female	63	**46.6**
Age	18-28	40	**29.6**
	29-38	47	**34.8**
	39-48	30	**22.2**
	Above 49	18	**13.3**
Educational Qualification	Uneducated	30	**22.2**
	UG	40	**29.6**
	PG	5	**3.7**
	Diploma	20	**14.8**
	Schooling	40	**29.6**
Marital Status	Married	85	**62.9**
	Unmarried	50	**37**
Designation	Employee	56	**41.5**
	Supervisor	38	**28.2**
	Manager	28	**20.7**
	Other Specify	13	**9.6**
Monthly Income	5000-10000	60	**44.45**
	10001-20000	58	**42.9**
	20001-30000	15	**11.1**
	Above 40000	2	**1.5**
Working Experience	1-3 years	53	**39.2**
	4-6 years	42	**31.1**
	7-8 years	30	**22.2**
	More than 10 years	10	**7.4**

II. Factor affecting to motivated the employee's motivational levels
Table 2: Factor Wise Respondents

Factors	Highly Satisfied	Satisfied	Neutral	Dissatisfied	Highly Dissatisfied
Level of job satisfy	49	32	30	14	10
Job security in the company	57	30	29	12	7
Training methods	60	35	25	10	5
Salary and reward	51	48	18	14	4
Leadership behaviour	73	43	11	6	2
Working hours	61	41	20	7	6
Safety measurement	77	28	19	6	5
Management is really interested in motivating the employees	54	40	21	11	9
Rate the statement "Top management is interested" in motivating the employee	48	37	32	12	6
Good relationship with colleagues	40	38	28	20	9

Source: Primary data

Chart 2- Factor Wise Respondents

Interpretation

      The above table 2 and Chart 2 shows the factor affecting to motivate the employees motivational levels.

III. Analysis using weighted average method factor affecting to motivated the   employees motivational to words

TABLE 3 - Weighted Average Calculation

Factors	*Highly Satisfied (5)*	*Satisfied (4)*	*Neutral (3)*	*Dissatisfied (2)*	*Highly dissatisfied (1)*	*Total*	*Mean*	*Rank*
Level of job satisfy	245	128	90	28	10	501	3.71	**9**
Job security in the company	285	120	87	24	7	523	3.87	**7**
Management is really interested in motivating the employees	270	160	63	48	9	550	4.07	**2**
Rate the statement "Top management is interested" in motivating the employee	240	148	96	24	6	514	3.80	**8**
Training methods	300	140	75	20	5	540	4	**5**
Salary and reward	255	192	54	28	4	533	3.94	**6**
Leadership behavior	365	172	33	12	2	584	4.32	**1**
Working hours	305	164	60	14	6	549	4.06	**3**
Safety measurement	360	112	57	10	6	545	4.03	**4**
Good relationship with colleagues	200	152	84	40	9	485	3.59	**10**

Interpretation

The above table shows the various satisfaction levels towards services provided by product innovation. The highest mean score rise for leadership behaviour, and also have been allocated for the weighted average.

FINDINGS

- Most of the employees working in Millet Industry are male 53.3% employees.
- Most of the respondents 34.8% were belongs to age- group of 29-38.
- Most of respondent 29.6% had their educational qualification up to UG and Schooling.
- Majority of the respondent 39.2% works in span of 1- 3 years.

- Majority of respondents 44.45% agree with present salary and increment
- Majority of respondents 80% agree with financially related reward system.
- Majority of respondents 85.5% were strongly agree with working condition.
- Majority of the respondents 70% were agree with welfare facilities and 91.1% were strongly agree with welfare facilities.
- Majority of respondents 82% agree with right opportunities in this organization for my personal growth and promotion.
- Majority of respondents 69% were organization for my personal growth and promotion.
- Most of respondents 41.1% containing information the designation of the employee.
- Majority of respondents 34.8% were recognition motivation of the incentive.
- Majority of respondents 75% were appropriate work is given to me according to my skill and potential.
- Majority of respondents 58% were enjoy setting and achieving challenging goal.
- Majority of respondents 77% were recognized and praised for my good performance
- Majority of respondents 82% were clear and effective system of performance appraisal and career development
- Majority of respondents 67% were organization helps me in all possible 30% organization helps me in all possible.

SUGGESTION

- In the Millet Industry employees feel that the salary structure is very good. Give amount is satisfactory.95% of the employees are satisfied by their salary and increment financial reward, as it is very high.
- More motivation will increase productivity
- Company should provide job security to workers then only they can work tension free.
- Subordinate should be given more opportunity to express their opinion.
- The higher number of employees 85% has given strongly agree. It means in Millet Industry the belonging 0 employees are very good. They have a good relationship with everyone.
- 75% of the employees are satisfied with recognition programs and employee motivational system. But 20% of the employees is still feeling that the performance appraisal system and recognition programmer and not proper. Hence organization should know why the performance appraisal system and which type of recognition program me they want in future.
- The higher number of employees have given positive response but there still is scope for improvement.
- The management department should make the job most challenging. Exciting and meaningful by the factors like goal setting, creative work, job rotation, skill diversity.
- Management policies and practices should be communicated so that workers could understand them easily.
- Company should improve the relationship between superior and subordinate, they install new scheme of work participation in management decision to make feel employees they are part of management.

FURTHER SCOPE OF THE STUDY

The current study delves deeply into the topic of employee motivation in order to ascertain how both internal and external motivation affect creation. Also, in the future, the

crucial role of customization in working obligations by empowering a higher level of inspiration among labourers can be contemplated. Be that as it may, different exploration articles and speculations will be engaged to accumulate sound and pertinent data. Moreover, the examination can additionally be directed in the area of the execution of the persuasion and its linkage with the worker's inspiration. It is a generally excellent region to concentrate on the roused representative, who assumes a significant role in bringing the association together by empowering, supporting, and spurring labourers in a valuable and purposeful way.

V. CONCLUSION

The undertaking focuses on representative inspiration in the millet industry in Theni. It is essentially directed to distinguish the inspiration level of workers in the association from the variables that give inspiration to the representatives. The review empowers us to figure out the adequacy and downside of the offices given to the workers in the millet industry. According to the findings of the study, many employees are pleased with the company's facilities. The company should take additional steps to improve its welfare facilities, particularly by improving environmental factors. The organization's interpersonal relationships are severely lacking.

The organization ought to further develop the entomb faculty relationship in the association. The representatives at Millet Industry in Theni were roused in almost every one of the perspectives. To encourage and support employees more, the company should concentrate on motivating them.

Inspiration is a perspective that covers practically all the workers, from the overseeing chiefs to their low-level employees. The inspiration is a live issue for all. Inspiration is a mental idea. Motivation is not the cause of many people disappearing; rather, it is the effect or result. Inspiration varies from one individual to another, industry to industry, level of training age, nature of work, and so forth. Inspiration might range from exceptionally high to extremely low.

This concentrates on representative inspiration, obviously from different groups, which impacts the inspiration and efficiency of the representatives, as government-managed retirement measures, government assistance offices, pay status, reward, ailment, shift framework, and acknowledgment of work are getting a lot of significance.

To finish up, representative inspiration assumes a vital role in each association. Great representative inspiration serves the outcome of the association. Except if a representative has unfortunate inspiration, there is consistently a chance of worker disharmony and, furthermore, some droning of the association.

References
1. Forson JA, Opoku RA, Appiah MO, Kyeremeh E, Ahmed IA, Addo-quaye R, Peng Z, Acheampong EY, Bekuni B, Bingab B, Bosomtwe E (2020) Innovation, institutions and economic growth in sub-Saharan Africa—an IV estimation of a panel threshold model.
2. J Econ Admin SciReizer A, Brender-Ilan Y, Sheaffer Z (2019) Employee motivation, emotions and performance: a longitudinal diary study. J Manag Pschol 34(6):415–428
3. Datuk Dr. Mahamad Zubir bin Seeht Saad. (2018), the impact of employee motivation on work performance. International Journal of Scientific and Research Publications, 8(3)
4. Alshmemri, M., Shahwan-Akl, L., & Maude, P.(2017). Herzberg's two-factor theory. Life science Journal, 14(5)
5. Culture IQ (2018) Understanding job performance in your company. Job Performance.

6. Rožman, M., Treven, S., & Cancer, V. (2017). Motivation and Satisfaction of Employees in the Workplace. Business systems research journal, 8(2)
7. Rasheed MI, Humayon AA, Awan U, Din Ahmed A (2016) Factors affecting teachers' motivation. Norwich 30(1):101–114. https://doi.org/10.1108/IJEM-04-2014-0057
8. Marthouret, E., & Sigvardsson, S. (2016). The effect of quick feedback on employee motivation and performance: A qualitative study on how to formulate effective feedback
9. Anderson, A. (2014). Maslow's hierarchy of needs. The Prairie Light Review, 36(2)
10. Llopis, G. (2012) "The Top 9 Things That Ultimately Motivate Employees to Achieve" Forbes, April 6, 2012
11. Lockley, M. (2012) "The Secret to Motivating a Team" The Guardian, January 6, 2012
12. Bruce, A. (2006). How to Motivate Employees: 24 Proven Tactics to Spark Productivity in the Workplace. NY, McGraw Hill Professional
13. Salmela-Aro, K, Nurmi, J. (2004). Employees' Motivational Orientation and Well-Being at Work. Journal of Organizational Change Management, page: 8
14. Purcell, J. (2003). Understanding the People and Performance Link: Unlocking the Black Box. NY, CIPD Publishers
15. Petri, H.L & Govern, J.M 2004. Motivation: Theory, Research and Application. Wadsworth/Thomson, Inc.
16. Ritter, J. & Anker, R. (2002). Good Jobs, Bad Jobs: Workers' Evaluations in Five Countries. International Labor Review, 141(4)

CHALLENGES AND ISSUES OF WOMEN ENTREPRENEURSHIP IN SOUTHERN DISTRICTS OF TAMIL NADU

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Abstract
The purpose of this study is to evaluate the business as well as social backgrounds of 400 women entrepreneurs in southern region of Tamil Nadu. This study has made an attempt to uncover the trends of entrepreneurship and the social and economic problems that women entrepreneurs faced in Tamil Nadu. The study is intended to promote and encourage women entrepreneurs 's sustainable small-scale economic development activities, as well as to identify ways to integrate these tiny enterprises into existing urban economic growth initiatives and poverty alleviation strategies, and to broaden awareness of the business and social backgrounds of women entrepreneurs.
KEYWORDS: Women Entrepreneurs, Investment, Economic Growth, Challenges, Prospects

I.INTRODUCTION

Entrepreneurship has historically been described as the process of creating, launching, and managing a new enterprise, which often begins as a small firm, which might be a startup business, offering goods, services, or processes for sale or hiring, and entrepreneurs are those who do so. It has been characterized as the ability and willingness to conceive, organize, and handle a business initiative, as well as any risks associated with it, to generate profit. While the concepts of entrepreneurship normally concentrate on the starting and continuing operation of organizations, due to the substantial risks involved in starting a business, an important number of organizations must close due towards a lack of investment, poor business decisions, a recession, or an amalgamation of all about these, or a shortage in market demand. Every nation strives for economic growth to provide a better life, a greater quality of living in and wealth for its people. The idea that growth has many aspects and is meaningless without the advancement of women, who make up roughly half of the population. As a result, the participation of women in financial endeavors for the formation of nations is essential. Women are a key gender with the ability, aptitude, and potential to contribute to any nation's financial, social, and cultural growth. Women are visionaries with brilliant ideologies and the potential to thrive, explore, and maximize chances. Women have always played a vital part in the rise to prominence of their country, as well as in giving financial assistance to their families. Women are directing business businesses or industries, organizing productive working methods, and offering job chances to others, and so conceptualizing themselves as women entrepreneurs.

Women entrepreneurs are described with the Government of the Republic of India as an organization that is controlled and owned by women, with a minimum financial stake of fifty-one percent of the investment fund, and providing at least fifty-one percent of the job opportunities to women with the enterprise. This definition furthers the idea of entrepreneurship. Due to several push and pull forces, which encourage women to maintain

independent lives and serve as the backbone of their families, women are involved in commercial operations. Women were not merely restricted to the traditional and clichéd situation but are also deeply involved in the entrepreneurial world, which was historically controlled by men. The demand for female entrepreneurship has been identified as the key driver of economic growth in developed countries. The position of women has changed because of the different social changes brought on by globalization, industrialization, and urbanization. Women are enrolling in colleges, technical schools, and professional programmes to learn how to explore in many fields and build their careers. Women can start, organizing, and managing any type of company enterprise by taking the risks necessary to be successful, which is referred to as entrepreneurship. Entrepreneurship is a complex and varied endeavour that requires both direct and indirect on support throughout the early stages of a business venture and at a higher level during the transition to a viable enterprise. It is important to increase production of products and services to keep up with the changing nature of human life across the world, make the most use of the resources at hand, engage human capital, and lessen the major hurdles of poverty and joblessness.

Women's entrepreneurship is therefore a process that enables them to coordinate all the forces of production, develop their risk-taking skills, and hire other qualified and unemployed people. To suit the demands and fulfil her ambition to achieve something unique, they thus behave as people who are prepared to assume demanding roles in the modern world and actively make modifications to the financial, supporting, and socio-economic realms of society. Women are becoming more and more active in the world of business every day. The current state of the international economy has been altered by women's active participation. Women are more likely to start their own businesses in countries that offer stronger support systems and incentives to applicants. Lower levels of women's entrepreneurship and efforts result from any inability to provide such helpful initiatives. The importance and economic potential of female entrepreneurship have been acknowledged on a global scale. Studies reveal that women entrepreneurs make outstanding contributions to economic vitality, local commerce, and international competitiveness by introducing a variety of goods to the worldwide marketplace in the modern day. In addition, research have found that women-owned businesses account for around one-third of the formal economy and one-quarter of the informal economy, respectively, and play a larger role in the former than the latter. Based on education, ability, understanding, and skills, high-income countries tend to produce more female entrepreneurs than middle- or low-income countries. Globalization and liberalization have inspired women to pursue their goals by starting new businesses and making positive contributions to their families, communities, countries, and the world at large.

Indian women have worked out a space for themselves by distinguishing themselves in nearly every field, and they are adding additional feathers to their hats. India has a long history of entrepreneurship dating back to its inception. Previously, certain assumptions were made about women's non-productive contributions on the battlefield of financially rewarding fields, but the entire picture is steadily changing. The deliberate restructuring of the social framework of Indian society, shown in desires for better living, more literacy, and increased awareness among women, has resulted in an increase in efforts among women to adapt their ways of life. Due to the massive transition, there is a growing trend in the proportion of women-owned businesses.

Women are increasingly involved in a variety of fields in today's corporate environment. This epoch has presented several untapped business prospects for anyone seeking to hone their entrepreneurial abilities and efficacy. The government in our nation

has undertaken several measures to assist hopefuls by borrowing the funds they need at the outset as well as at various stages of their company environment. Women are encouraged to take the initiative to earn a living by becoming self- sufficient. Aside from that, there are several non-governmental organizations in India that provide financial support and aid to women. These institutes also educate women on the most efficient ways to gain money from their labour. Women's standing in India has substantially improved, and some women now hold respected positions in business. Even though our country has many successful female entrepreneurs, the variables differ from place to area and from business to business. Some studies have also revealed a poor degree of development in terms of women entrepreneurship in countryside regions, particularly throughout rural areas. This study deals with the women entrepreneurs' prospects and challenges facing in their business environment. Hence the attempt has been made.

II. Review of Literature

The very concept of women entrepreneur is rather new in the Indian context. People are still reluctant to acknowledge the non-traditional image of women as a journalist, chief executive, administrator, or an entrepreneur. However, some small but directed efforts are on the way to give a new dimension and view to the traditional tag of women in Indian society.

Nandita (2002) in her study: "Women Entrepreneurs: A Social and Economic Study with Reference to Tamil Nadu", has presented her findings on problems and difficulties faced by women entrepreneurs in different industries. She has divided the industries into two groups (*i*) producer goods industries, and (*ii*) consumer goods industries. The following observations are worth mentioning:

(a) 57% of the respondents accept the statement that women are more suitable for desk work than manual work.

(b) A change is occurring in society attitude but the pace of the change is rather slow.

(c) Educated family is mor likely to adopt a relatively liberal approach towards women entrepreneurs as compared to non-educated**.** They are facing lot of challenges and issues in their field.

Dubhashi (2007) for her study: "Socio *Economic Study of Women Entrepreneurship of Delhi",* selected 50 industrial units spread over different kinds of enterprises. The object of the study was to ascertain the socio-economic backgrounds of women entrepreneurs in Delhi.

Rani (2006) in her study: "Potential Women Entrepreneurs", found that the desire to do something independently was the prime motivation factor to start a business activity amongst the sample respondents. For study purpose the respondents were selected during a Training Programme for Potential Women Entrepreneurs, held at Hyderabad organized by APITCO in collaboration with the Department of the Science, Technology and Environment, Government of Andhra Pradesh.

(a) Desire to do something independent was observed as the prime motivating factor which

had influenced women irrespective of age in setting up of the unit. Some women viewed entrepreneurship as a tool for earning money.

(b) Educational and income factors do not influence women to become entrepreneurs.

(c) Women too are capable and confident of taking independent decisions.

Objectives of the Study

- To analyse the challenges faced by the women entrepreneurs in southern districts of Tamil Nadu.
- To study the prospects for women entrepreneurship in southern districts of Tamil Nadu.

III. Methodology

The data were blended with both primary and secondary data sources. The primary data were collected from the DIC and SHG in the southern districts of Tamil Nadu adopted the technique to be find out the population by the stratified random sampling. The approximation of total registered women entrepreneurs is 3556. The researcher has identified the total 347 sample size by the Rao soft online calculator. For the data adequacy the researcher has added the 53-sample size. Hence the sample size is 400.

Table 1: Details of Population and Sample Size Drawn

S.No	Name of the District	Total Population Size Considered for the Study	Calculation of Sample Size for Each Districts	Sample Size
1.	Thirunelveli	512	57.6	57
2.	Madurai	302	34.0	34
3.	Dindigul	415	46.7	47
4.	Virudhunagar	402	45.2	45
5.	Thoothukodi	413	46.5	47
6.	Ramanathapuram	391	44.0	44
7.	Sivagangai	381	42.9	43
8.	Theni	342	38.5	38
9.	Kanniyakumari	398	44.8	45
	Total	**3556**		**400**

Sources: Secondary Data Collected from DIC and SHG (2021-22)

The sample size of 400 was collected using the simple random sampling method.

Pilot Study and Pre-test

To frame the questionnaire, the researcher conducted a pilot study. Following the pilot study, the researcher used the Cronbach Alpha test to analyze the accuracy of the interview schedule. Table 1.2 displays the dependability scores of the gathered interview schedule replies.

Demography Profile of the Respondents

Table 2 shows the demographics of the women entrepreneurs answered. According to the findings, the majority of respondents belonged of a certain age, educational qualification, area of residence, business experience and business started

Table 2: Demographics of the Respondents

Demographic Variables	Range	Percentage
Age	35-45	54
Educational Qualification	Graduate	43
Area of Residence	Urban	61
Business Experience	10-20	59
Ownership type	Partnership	64.2
Business Support	Family	55
	Government	43
Local Market	Local market	83

Source: Primary Data

Table 2 explains that 54% of the women entrepreneur are between 35 to 45 years, sizable number of the women entrepreneurs are graduates and living in urban area. Majority of the women entrepreneurs are well business experience of 10 to 20 years of doing business in the form of partnership type of ownership. Majority of the business are supported by both family and government. Common number of women entrepreneurs have setup their business at local market. Thus, majority of women entreasure have higher contribution towards economic development through the support of MSME.

Challenges and Issues Faced by the Women Entrepreneurs

Table 3 provides descriptive information on the problems experienced by female entrepreneurs. According to the findings of the factor analysis, the following six issues emerged as barriers for female entrepreneurs: (i) a disparity among both professional and personal lives, (ii)psychological variables, (iii) financial assistance, (iv) business abilities, (v) difficulties with finances, and (vi) the presence of a traditional social structure. Then, based on the mean value of the criteria, we evaluate the problems experienced by female entrepreneurs. The findings indicate that the mean value of entrepreneurial skills is the highest among other barriers, implying that women entrepreneurs consider entrepreneurial skills to be the most difficult challenge in starting a new firm. The existence of a traditional social framework has been assigned the second highest mean value among other problems, indicating that women entrepreneurs see the existence of a conventional social framework as the second most difficult hurdle to starting a new firm.

Table 3: Challenges and Issues Faced by the Women Entrepreneurs

Challenges and Issues Faced	Min	Max	Mean	SD	Rank
Disparity among both work life balance	1.000	5.000	2.518	0.960	4
Psychological aspects	1.000	4.000	3.809	1.420	3
Financial assistance	1.000	4.000	0.551	1.450	2
Entrepreneurial skills	**1.000**	**4.000**	**3.902**	**1.540**	**1**
Lack of money	1.000	5.000	2.423	0.660	5

Data: Primary Sources

Table 3 indicates the mean rank and standard deviation values against the suggestions given to the respondents. Based on the mean rank and standard deviation values, responses of the respondents have been given ranks. Among these 5 variables show that entrepreneurial skills were placed in the first rank, financial assistance needed is placed in the second rank then psychological aspects is kept 3rd rank followed by the work life balance of the women entrepreneurs. The weaker section of the women entrepreneurs is money lacking.

According to the Master card Index of Women Entrepreneurs, just seven entrepreneurs in India are female. According to the Google-Bain analysis, just 20% of firms in the nation are owned in women, while the World Economic Forum's 2021 report reveals a staggering 72% gender imbalance in India's labour market. Women entrepreneurs across the nation confront a number of gender-specific hurdles. Here are the some of the most typical hurdles and problems experienced by female entrepreneurs whereas beginning a firm in India, as well as ways to overcome them.

IV. Results and Discussion

Women of today era have more participative and competitive in nature, they are more enthusiastic to become entrepreneur. The initiative from government NGO push them up to start a small business which contributes not only to their livelihood but also give job to unemployed associated with them. The present study focuses on the challenge's women facing in entrepreneurship and running sustainable business. It has been identified that 54% of the women entrepreneur are between 35 to 45 years, sizable number of the women entrepreneurs are graduates and living in urban area. Majority of the women entrepreneurs are well business experience of 10 to 20 years of doing business in the form of partnership type of ownership. Majority of the business are supported by both family and government. Common number of women entrepreneurs have setup their business at local market. Thus, majority of women entreasure have higher contribution towards economic development through the support of MSME.

V. Conclusion

This survey gives information on the perceived barriers that women entrepreneurs in each state encounter. According to the report, there are six primary hurdles that women entrepreneurs encounter when pursuing their company operations. These six challenges were as follows: an imbalance among life at home and at work due to household duties, personal

factors such as a lack in guidance or opportunities for education, financial challenges such as a lack of security and exploitation from financial service providers, the presence of traditional social frameworks such as prejudice against women or workplace sexism, and government subsidies and support such as a lack of initiatives and difficulty in obtaining them. The survey revealed that the formation of entrepreneurial skills as well as the hurdles imposed by traditional societal standards were considered as the two most significant impediments to the growth of women entrepreneurs, while financial constraints were perceived as the least limiting. The confluence of socioeconomic profiles of women entrepreneurs and perceived barriers led to the conclusion that characteristics such as age, level of higher education, rural or urban origin, and so on had a major influence on the challenges to women entrepreneurial development. Furthermore, the study stated that the state's training and growth in entrepreneurship programmes (EDPs) require a stronger emphasis on the participation of rural women entrepreneurs. According to the study's findings, rural women entrepreneurs were not aware of the presence of EDPs at the local, state, or national levels. Even among the few women who were aware of such programmes, there was a low percentage of involvement, particularly recurrent engagement, even in metropolitan regions. This demonstrates that such programmes are currently not perceived to be of great value, particularly among rural women entrepreneurs. According to the survey, the key motives of women entrepreneurs who attended EDPs were to get chances to build entrepreneurial abilities or to gain financial awareness and knowledge.

References

1.Kain, P., & Sharma, M. (2013). Women Entrepreneurship Education Need for Today. Journal of Management Sciences and Technology, 1(1), 43-53.

2.Goyal, M., & Parkash, J. (2011). Women Entrepreneurship in India-Problems and Prospects International Journal of Multidisciplinary Research, 1(5),195-207.

3.Rahim, A., Atan, R., & Kamaluddin, A. (2017). Human Capital Efficiency and Firm Performance: An Empirical Study on Malaysian Technology Industry. SHS Web of Conferences, 36, 00026. doi:10.1051/shsconf/20173600026.

4.Gandhi, D., & Sharma, V. (2014). Women Entrepreneurship: The Emerging Economic Workforce in the Century. International Journal of Commerce, Business and Management, 3(4),543-551.

5.Singh, S. P. (2008). An Insight into The Emergence of Women-owned Businesses as an Economic Force in India. Presented at Special Conference of the Strategic Management Society, December 12-14, 2008, Indian School of Business, Hyderabad.

6.Rao, P. (2002). Entrepreneurship and Economics Department, Kanishka Publishers, 12-45. Agarwal, S., & Lenka, U. (2018). Why research is needed in women entrepreneurship in India: a viewpoint. International Journal of Social Economics, 45(7), 1042- 1057. https://doi.org/10.1108/IJSE-07-2017-0298

7.Kanapathipillai, K., & Azam, S. (2019). A Conceptual Understanding of the Critical Factors that Induce Women Entrepreneurial Success in the Klang Valley, Malaysia. European Journal of Management and Marketing Studies'

A STUDY ON GROWTH WITH IMPACT OF IMPORTS AND EXPORTS TRADE IN INDIA

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ABSTRACT

The abstract for the research paper titled is growth with impact of imports and exports trade in India explores the relationship between international trade and economic growth in India, with a particular focus on imports and exports. The study utilizes comprehensive data analysis and statistical methods to provide a nuanced understanding of how India's trade patterns have influenced its overall economic development. It investigates the impact of imports on domestic industries, analysing both positive effects such as access to new technologies and negative repercussions like competition from foreign producers. Similarly, it examines the contribution of exports to economic growth by exploring the dynamics of global market access and competitiveness. The findings shed light on critical policy implications, allowing policymakers to make informed decisions to harness India's trade potential while mitigating risks. Overall, this research contributes valuable insights into how India can leverage its trade activities strategically for sustainable growth and socio-economic development. The purpose of this paper is to analyze the impact of imports and exports on the Corona virus crisis in India in the years 2019-20 and 2020-21. The purpose of this study Exports and imports is to analyze the Merchandise and services trade in India in the period 2012-13, to 2021-22, and to estimate the exports and imports of top 10 commodities in India in the year 2019-20 & 2021. The hypothesis is framed and tested using t-test for exports and imports in India. Secondary data have been qualitatively analyzed and made available in tables, charts, and analysis for data. They are low growth and negative for merchandise trade and adjoining for services trade growth in India. In this compute of bar graphs, analysis for statistics and sample test export top 10 commodities year 2019-20 & 2020-21, p-value is very significant. Trade needs to be tracked, which is where the foreign trade policy framework comes into play. The government gave the go-ahead to exporters to expand the production of various goods. The country's exports and imports lead to foreign exchange transactions with other countries.

Keywords: Merchandise Trade, Services Trade, Export, Import and Commodities in India.

I. INTRODUCTION

In India Exports and Imports trade to develop the need for economic growth. Trade plays a significant position in economic growth. Exports and Imports are possible arms of growth. So, rule makers and academics have exposed great attention in exploring the likely relationship between global trade and economic growth. There are many different approaches to realize economic development and growth. One opportunity is to discover new export markets for goods and services, as exports, beside the imports of new technology, is a vital engine of development. This policy, nevertheless, raises the query that a country must endorse exports and or imports to speed up financial development and growth, or be supposed to be the primary hub on economic growth to make international trade. In 2020, India was the digit

economy in the world in provisions of GDP (recent US$), the digit 18 in total exports, the digit 12 in total imports, the digit 158 economy in terms of GDP per capita (recent US$) and the digit 40 most compound economy according to the Economic Complexity Index (ECI).

Export growth has had a significant impact on India's economy, driving its transformation into a global player. Over the past few decades, India has emerged as one of the largest exporters of goods and services globally, with sectors such as IT and software leading the way. This export-led growth has not only increased foreign exchange reserves but also created employment opportunities and enhanced the country's technological capabilities. Additionally, it has led to an increase in per capita income, promoting economic development and reducing poverty levels. The government's proactive policies like Export Promotion Initiatives and Special Economic Zones have further propelled export growth by providing incentives to businesses. However, challenges such as infrastructure bottlenecks, bureaucratic red tape, and fluctuating global demand remain areas of concern for sustained export growth in India's professional landscape. Overall, export growth is a vital component of India's economic progress that continues to shape its position in the international business arena.

India has experienced a significant growth in imports over the past decade, with a profound impact on its economy. The liberalization of trade policies, coupled with globalization and increased consumer demand, has led to an influx of imported goods across various sectors. This growth in imports has had both positive and negative implications for India. On one hand, it has provided consumers with access to a wider range of products at competitive prices, fueling consumption and driving economic growth. Additionally, imports have helped bridge the supply-demand gap in industries such as electronics and automobiles. On the other hand, excessive reliance on imports has also put pressure on domestic industries, leading to job losses and widening trade deficits. To mitigate these challenges, the Indian government needs to focus on promoting domestic manufacturing capabilities through initiatives like "Make in India" while simultaneously addressing structural constraints such as infrastructure bottlenecks and skill gaps. Overall, managing import growth is critical for India's sustainable economic development while balancing the interests of consumers and domestic industries.

India's Merchandise exports had revealed flexibility even though constant disturbances caused by the pandemic. Merchandise exports increased with the revitalization of domestic economic action inspired by the moving back next wave of COVID-19, fast-paced vaccinations down with the quick important steps taken by the Government. The surprising procedures to undertake the pandemic like lockdown and social isolation have had a significant impact on the services sector in 2020-21. But the division has revealed huge spirit and has been causal highly to India's economic growth.

The COVID-19 crisis has had a profound impact on global trade, and the Indian economy is no exception. As a country heavily reliant on imports and exports, India has faced numerous challenges and opportunities during this period of uncertainty. This study aims to explore the impact of imports and exports trade in India during the COVID-19 crisis, examining the disruptions, changes in trade patterns, and the economic consequences. Additionally, it will analyze the government policies and initiatives implemented to mitigate the impact, as well as identify the challenges and opportunities that have emerged for India's trade. Finally, this study will propose strategies to revive and strengthen India's trade in a post-COVID-19 scenario. By gaining a comprehensive understanding of the trade dynamics during the crisis, policymakers, industry stakeholders, and researchers can make informed decisions to navigate the challenges and leverage the opportunities presented by the ongoing pandemic.

II. REVIEW OF LITERATURE

Kazunobu Hayakawa., & Hiroshi Mukunoki., (2021). In this study examines the impact of COVID on global trade. To do this, we look at monthly data on global trade for January to August of 2019 and 2020, covering the exports from 34 countries to a total of 173 countries. The gravity equation is calculated by using various variables as proxies for the damage caused by COVID. First, regardless of the measures used to quantify COVID, we found significant negative effects on international trade for both importing and exporting countries. Second, these effects, particularly those of COVID in importing countries tended to diminish from July 2020 onwards, suggesting that the harmful effects of the COVID pandemic on global trade were mitigated to some extent post-pandemic. Third, the effects across industries were found to be heterogeneous, with negative effects for non-essential durable products lasting for an extended period, while positive effects were observed in industries that provide medical products.

Rupali., Amrit Raj., Gaurav Singh Pathania & Gourav Kumar Dhiman. (2021). Business is a term used to describe an economic activity. The main idea behind business is profit. There are two meanings of the word business. One is the traditional method of making profit and the other is the modern era in which profit, value, and wealth are maximized. This has opened huge opportunities for business growth by diversifying, forming alliances and other entry modes. In this modern era, the growth of domestic business on the global stage and the harmony between different countries around the world are requirements of survival that help meet our needs. In this paper, we attempt to analyze the economic significance of foreign trade. Foreign trade is an integral part of the Indian economy. This paper aims to analyze the correlation between foreign trade, Foreign investment, and GDP growth.

Sneha Pandit Jadhav., Nikhil N. Jogdand & Harsha Kailash Jadhav. (2021). Covid-19 has thrown the entire world into disarray. It is the only challenge facing developing countries. Consumption, investment, and external trade are the main drivers of GDP growth. Many developing countries rely entirely on imports to satisfy their needs. However, their GDP growth depends on exports to other countries. Import-export or external trade plays an important role in the development of developing countries. In the wake of the pandemic, countries around the world have imposed lockdown and closed their borders to any kind of trade. This has disrupted supply chains of developing countries like India. As a result of the nationwide lockdown in India, the manufacturing and production came to a standstill, affecting the overall growth of the Indian economy. The purpose of this paper is to emphasize the potential impact of covid-19 on the international trade between India and its neighbouring countries and the impact of this pandemic on them. The study shows that trade in India must be flourished with certain robust measures such as fiscal, monetary, and trade policies to bring the economy back from the expected recession.

Jairaj Joshi & Peenal Sankhla, (2020). The purpose of this paper is to analyze the impact of imports and exports on economic growth in India over the period 1980-18. The data for this study was sourced from RBI – Handbook of Indian Economics & Statistics. The data was analyzed using various statistical tools such as Unit Root Test, Regression Analysis & Correlation Analysis. The Unit Root Test is necessary to perform as it measures the stationary and relationship between imports and exports. The Regression Analysis measures the relationship between Import and Export and the stationary value. The Correlation Analysis measures the relationship with the dependent variable that the Exchange Rate has with respect

to imports and exports and the Regression Analysis measure whether the dependent variable has positive relationship with imports and exports or not.

Sachin N. Mehta, (2015). This study looks at the relationship between Gross Domestic Product (GDP), Exports and imports in India using the time series data of 1976 to 2014 using ADF unit root tests, Johansen cointegration and vector error correction techniques. The results of the above study can be interpreted as follows: The ADF unit root test shows that the series of GDP, Exports and imports becomes stationary when the first difference is taken into account. The empirical result shows that there is a long-term co-integration relationship between Gross Domestic Products (GDP), exports and imports in India. We found a unidirectional causal relationship between GDP and imports, which means that in long term, GDP leads to export but not to GDP. We also found a causal relationship between imports and exports, which means that imports lead to GDP but not to exports.

Kumari, Jyoti. (2014), as they have always been, import and export play a vital role in our global economy. Exports enable the nation to gain more foreign cash, which in turn supports imports and fosters economic expansion. The purpose of this study is to examine the relationship between GDP at constant price, imports, and exports in India during the post-liberalization period spanning from 1991–1992 to 2012–2013.The role that imports and exports play in India's economic expansion is examined. This study discovered that for the economy to thrive continuously, imports must be backed by exports. When exports are kept constant, economic growth is generally positively impacted; however, when imports are kept constant, economic growth is negatively impacted.

OBJECTIVES OF THE STUDY
- To study the trends of Exports and Imports in India.
- To analyze the Exports and Imports for Merchandise and Services Trade (2012-13 to 2021-22) in India.
- To evaluate the Exports & Imports of Top 10 Commodities 2019-20 and 2020-21 in India.

HYPOTHESIS

The following hypothesis is framed and tested with t-test for Exports and Imports in India.

$H0_1$: There is a no positive relationship between Exports of Top 10 Commodities 2019-20 and 2020-21 in India.

$H0_2$: There is a no positive relationship between Imports of Top 10 Commodities 2019-20 and 2020-21 in India.

III. METHODOLOGY

Research methodology for analyzing the growth and impact of imports and exports trade in India is crucial for gaining insightful and accurate findings. It necessitates a systematic approach that incorporates various research methods and techniques. Initially, a thorough literature review is required to gather existing knowledge on the subject. This study is based on Secondary data on Exports and imports in India. Data were extracted from the Annual Reports of the Department of Commerce in India. Literature was sourced from published journals & websites. The period of the study was taken as 10 years (2012-13 - 2021-22). Secondary data were qualitatively analyzed and available in Tables & Charts using Microsoft Excel & SPSS software. Graph analysis, descriptive statistics analysis and t test analysis were

used for the data. By adopting such a well-rounded research methodology, researchers can contribute significant insights to policymakers and industry leaders for informed decision-making towards sustainable economic growth in India through imports and exports trade.

OVERVIEW OF IMPORTS AND EXPORTS TRADE IN INDIA

Before delving into the impact of the COVID-19 crisis, let us first understand the basics of India's imports and exports trade.

i) Historical Trends

India has a long and storied history of engaging in international trade. Over the years, the country has become an important player in the global market, both as an importer and an exporter. Understanding the historical trends will provide us with a broader context for assessing the impact of the crisis.

ii) Key Trading Partners

India has developed strong trade relationships with numerous countries worldwide. From neighbouring nations to far-off continents, the country has a vast network of trading partners. We will explore the countries that play a crucial role in India's imports and exports trade.

iii) Sector-wise Analysis

Different sectors contribute differently to India's overall imports and exports. By analyzing the sector-wise data, we can gain insights into the specific industries that have a significant impact on India's trade landscape.

IMPACT OF COVID-19 CRISIS ON INDIA'S IMPORT TRADE

The COVID-19 crisis has disrupted economies globally, and India is no exception. Here, we examine the specific effects on India's import trade.

i) Disruption in Supply Chains

One of the most noticeable impacts of the crisis is the disruption in supply chains. With movement restrictions and lockdowns imposed, importing goods has become increasingly challenging. We will explore how this disruption has affected the availability of essential and non-essential goods.

ii) Changes in Import Patterns

The crisis has forced businesses and consumers to reevaluate their priorities and preferences. As a result, there have been notable changes in import patterns. We will examine the shifts in demand and the products that have seen a surge or decline in imports.

iii) Economic Consequences

The disruptions in import trade have had significant economic consequences for India. From rising prices to reduced consumer spending, the crisis has impacted various aspects of the economy. We will analyze the specific economic consequences and their implications.

IMPACT OF COVID-19 CRISIS ON INDIA'S EXPORT TRADE

India's export trade has also faced significant challenges during the COVID-19 crisis. Let us explore the specific impacts on India's export trade.

Decline in Export Demand

With the global economy experiencing a downturn, the demand for exports has taken a hit. We will assess the decline in demand for Indian exports and its effects on various industries.

Disruptions in Export Channels

The crisis has disrupted export channels, making it difficult for businesses to deliver their products to international markets. We will look at the challenges faced by exporters and the measures taken to mitigate them.

Impact on Key Export Sectors

Certain sectors in India heavily rely on export trade. We will examine how these key export sectors have been impacted by the crisis and the strategies they have employed to navigate through these challenging times. So, grab a cup of tea and join us on this intriguing journey as we uncover the impact of the COVID-19 crisis on India's imports and exports trade.

GOVERNMENT POLICIES AND INITIATIVES TO MITIGATE THE IMPACT

i) Financial Stimulus Packages

The Indian government, like many others around the world, understands the need for financial support during the COVID-19 crisis. To mitigate the impact on imports and exports trade, they have rolled out generous stimulus packages. These packages provide financial assistance to businesses affected by the crisis, offering support for maintaining supply chains, paying employees, and covering essential expenses. The aim is to alleviate the burden and keep the wheels of trade turning, even in these challenging times.

ii) Trade Facilitation Measures

Recognizing that efficient trade facilitation is crucial for economic recovery, the Indian government has implemented various measures to streamline import and export processes. This includes reducing unnecessary paperwork, simplifying customs procedures, and expediting clearance of goods at ports. By reducing bureaucratic hurdles, trade can flow more smoothly, minimizing disruptions and delays.

iii) Support for Exporters and Importers

The government has also extended support specifically targeted at exporters and importers. This includes offering financial assistance, such as subsidies and tax incentives, to encourage exporters to continue their operations. Additionally, importers have been provided with measures to ease the financial strain, such as flexible payment terms and extended deadlines. These initiatives aim to provide a lifeline to businesses, ensuring they can remain active players in the global market.

CHALLENGES AND OPPORTUNITIES FOR IMPORTS AND EXPORTS TRADE IN INDIA DURING THE CRISIS

i) Supply Chain Resilience

One of the immediate challenges faced by the trade sector during the crisis is the disruption to global supply chains. With restrictions on movement and trade barriers, the flow of goods has been severely impacted. However, this crisis has also highlighted the importance of building resilient supply chains. By diversifying sourcing locations, exploring local

alternatives, and investing in technology, businesses can mitigate the risk of future disruptions and strengthen their supply chain resilience.

ii) Diversification of Trade Partners

The crisis has underscored the vulnerability of relying heavily on a few trade partners. As countries face different levels of impact and recovery, diversifying trade partners becomes crucial. India can explore new markets and strengthen existing relationships, reducing dependence on a single market. This not only spreads risk but also opens opportunities for new trade relationships, which can be mutually beneficial for all parties involved.

iii)Shifting Global Trade Dynamics

COVID-19 has led to a significant shift in global trade dynamics. As countries reevaluate their priorities and seek to reduce dependence on a single source, there is an opportunity for India to position itself as a reliable trade partner. By emphasizing its strengths, such as skilled labor, competitive pricing, and quality products, India can attract businesses looking to diversify their supply chains. Adapting to these shifting dynamics can create new avenues for growth and trade partnerships.

STRATEGIES FOR REVIVING AND STRENGTHENING INDIA'S TRADE IN A POST-COVID-19 SCENARIO

i) Enhancing Domestic Manufacturing

The crisis has highlighted the importance of self-reliance and reducing dependence on imports. To revive and strengthen India's trade, there is a need to focus on enhancing domestic manufacturing capabilities. By investing in infrastructure, technology, and skill development, India can boost its manufacturing sector and become a hub for quality products. This would not only meet domestic demand but also enable Indian businesses to compete globally.

ii) Exploring New Export Markets

While traditional export markets may experience slower growth in the post-COVID-19 scenario, there are emerging markets that offer untapped potential. India should actively explore and diversify its export destinations, targeting countries with growing economies and increased demand for goods and services. This proactive approach can help offset any decline in traditional markets and open new avenues for trade and collaboration.

iii) Embracing Digital Transformation

Digital technology adoption has accelerated across industries because of the crisis. To adapt and thrive in the post-COVID-19 era, India's trade sector must embrace digital transformation. This includes digitizing processes, utilizing e-commerce platforms, and incorporating technologies like artificial intelligence and blockchain for efficient trade facilitation. By leveraging technology, Indian businesses can enhance their competitiveness and expand their reach in the global market.

IV.   DATA ANALYSIS AND INTERPRETATION

Table 1 Analysis for Exports & Imports growth of Merchandise Trade in India

(Values in US$ Billion)

Year	Exports	Growth (%)	Imports	Growth (%)	Trade Balance
2012-13	300.40	-1.82	490.74	0.29	-190.34
2013-14	314.41	4.66	450.20	-8.26	-135.79
2014-15	310.34	-1.29	448.03	-0.48	-137.69
2015-16	262.29	-15.48	381.01	-14.96	-118.72
2016-17	275.85	5.17	384.36	0.88	-108.50
2017-18	303.53	10.03	465.58	21.13	-162.05
2018-19	330.08	8.75	514.08	10.42	-184.00
2019-20	313.36	-5.06	474.71	-7.66	-161.35
2020-21	291.81	-6.88	394.44	-16.91	-102.63
2021-22	422.00	44.62	613.05	55.43	-191.05
Mean	312.41	4.27	461.62	3.99	-149.21
SD	43.24	16.17	69.93	21.36	33.39
CV	13.84	378.57	15.15	535.61	-22.38
Skewness	1.95	1.83	0.96	1.74	0.04
Kurtosis	5.19	4.71	1.43	3.47	-1.56
CAGR	0.04	-2.43	0.03	0.79	0.0004

Source: *DGCI&S, QE stands for Quick Estimates*

The results of Table 1 show that the merchandise trade in India analysis to 2012-2021-22 for Exports (312.41) growth is 4.27, for Imports (461.62) growth is 3.99, and for the trade balance (-149.21) is the mean ranges. This is a good central value because Std. deviation (SD) is a good process and CV is a result for negative value because the Import is higher than. The Skewness value is good because the skewness value between -1 and greater than 1 indicates a highly skewed distribution. If the Kurtosis; is between 0 and 3, then there is normal distribution. So that is a normal distribution. The CAGR is classified the last ten years exports growth is negatively and import growth is positively near to 79% as for merchandise trade in India.

Table 2 Exports & Imports growth of Services Trade in India (Values in US$ Billion)

Year	Exports	Growth (%)	Imports	Growth (%)	Trade Balance
2012-13	145.68	2.36	80.76	3.24	64.91
2013-14	151.81	4.21	78.75	-2.5	73.07
2014-15	158.11	4.15	81.58	3.59	76.53
2015-16	154.31	-2.4	84.63	3.75	69.68
2016-17	164.2	6.41	95.85	13.25	68.34
2017-18	195.09	18.81	117.53	22.61	77.56
2018-19	208	6.62	126.06	7.26	81.94
2019-20	213.19	2.5	128.27	1.75	84.92
2020-21	206.09	-3.33	117.52	-8.38	88.57
2021-22	254.53	23.5	147.01	25.09	107.52
Mean	185.10	6.28	105.80	6.97	79.30
SD	35.67	8.56	24.45	10.54	12.43
CV	19.27	136.28	23.11	151.37	15.67
Skewness	0.68	1.19	0.31	0.63	1.30
Kurtasis	-0.35	0.83	-1.39	-0.21	2.15
CAGR	0.06	0.29	0.07	0.26	0.06

Source: *RBI database and RBI Press Releases, P stands for provisional*

Table 2 evaluates the services trade in India for exports (185.10) for growth percentage 6.28, imports (105.80) for growth percentage 6.97 to the mean value range and for the trade balance of 79.30. This is a good central value because Std. deviation (SD) range is a good process and CV is a result for positive value because the export is higher than. The Skewness value is good because if the skewness is -1 or more than 1, then the distribution is well skewed. If the Kurtasis; is between 0 and 3, then there is normal distribution. The import and export are

negatively but trade balance is 2.15. So, that is normal distribution. Compound average growth rate is classified to positively.

Chart 1 Exports & Imports of Top 10 Commodities in India
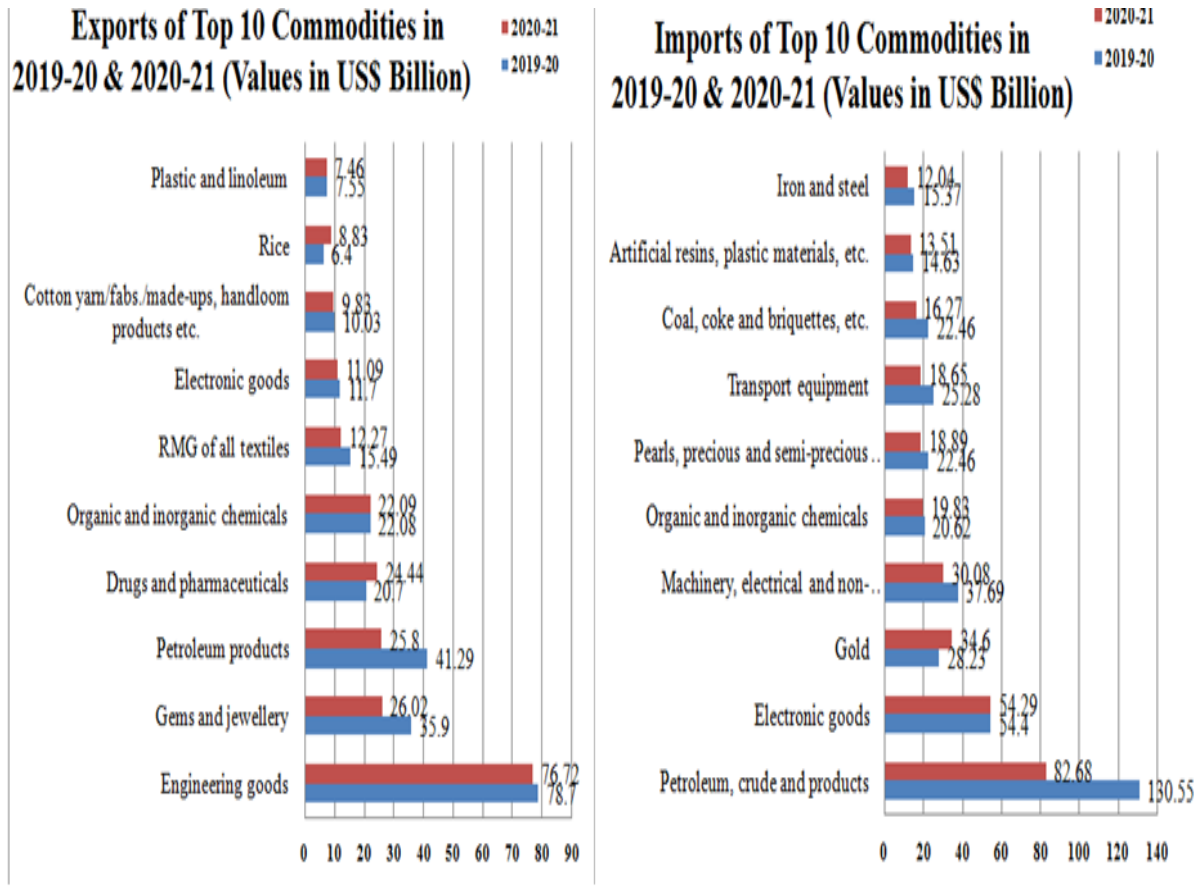
Chart 1: Bar Graphs on Top 10 Commodity Exports and Imports in India India's top 10 commodity exports in 2020-21 and 2019-20 ranged from 7.46% to 76.72%, and its top 10 commodity imports ranged from 7.55% to 78.70. India's imports of the top 10 commodity range ranged from 12.04% to 82.68, and its top 10 commodities imports ranged from 15.37% to 130.55.

Table 3 Analysis for One-Sample Statistics & Sample Test Export Top 10 Commodities for 2019-20 and 2020-21 in India

Export Top 10 Commodities in India	N	Mean	Std. Deviation	Std. Error Mean	t	df	P-value
2019-20	10	24.9840	22.20303	7.02122	3.558	9	0.006
2020-21	10	22.4550	20.48154	6.47683	3.467	9	0.007

Table 3 shows that the export top 10 commodities in India for the years 2019-20 & 2020-21 have a t-test of 3.558 with a p-value of 0.006 and 0.05 respectively. The corresponding t-value for 2019-20 is 3.468 and the corresponding p-value for 2020-21 is 0.007. According to SPSS, a t-test with a p value is a statistically significant difference from zero. Therefore, researchers can reject a null hypothesis that both groups have equal means with a 95% confidence.

Table 4 Analysis for One-Sample Statistics & Sample Test Import Top 10 Commodities for 2019-20 and 2020-21 in India

Import Top 10 Commodities in India	N	Mean	Std. Deviation	Std. Error Mean	t	df	P-value
2019-20	10	37.1690	34.84605	11.01929	3.373	9	0.008
2020-21	10	30.0840	22.42261	7.09065	4.243	9	0.002

Table 4 shows the analysis of the import top 10 commodities in India for the years 2019-20 & 2020-21. SPSS provides the t-value as p-value to explain the difference in the t-test from zero. The t-value for 2019-20 is 3.373, and the p-value for 2020-21 is 0.002. The corresponding t-value in the appropriate table is 4.243, and the associated p-value is 0.002 for 2020-21. The p-value is lower than 0.05, and the null hypothesis that both groups have equal means is rejected with 95% confidence.

RECOMMENDATIONS FOR POLICY MAKERS
To navigate through this crisis and ensure a strong recovery, policymakers should consider the following recommendations:
1. Continue providing financial stimulus packages and support to businesses affected by the crisis.
2. Further streamline trade facilitation measures to minimize bureaucratic hurdles and ensure smooth trade flow.
3. Encourage domestic manufacturing by investing in infrastructure, technology, and skill development.
4. Actively explore and diversify export markets, focusing on emerging economies with increasing demand.
5. Embrace digital transformation to enhance competitiveness and efficiency in trade processes.
By implementing these recommendations, India can revive and strengthen its imports and exports trade, positioning itself as a resilient player in the global market.

V. CONCLUSION
In conclusion, the growth of imports and exports trade in India has had a significant impact on the country's overall economic development. The liberalization and globalization policies adopted by the Indian government have played a crucial role in attracting foreign investments and facilitating international trade. This has led to increased exports of goods and services from India, contributing to higher economic growth rates and employment opportunities. Additionally, imports have provided access to advanced technologies, machinery, and raw materials, which have further supported domestic industries' expansion and efficiency. However, it is essential for India to strike a balance between imports and exports to avoid adverse effects such as trade deficits or dependence on foreign goods. Overall, with proper regulation and strategic planning, India's imports and exports trade can continue driving economic growth while fostering sustainable development.

The COVID-19 crisis has significantly disrupted India's imports and exports trade, leading to supply chain disruptions, changes in trade patterns, and economic consequences. However, amidst these challenges, there are also opportunities for India to adapt and strengthen its trade in the post-COVID-19 scenario. It is imperative for policymakers to continue implementing supportive measures and trade facilitation initiatives to revive the economy and promote resilience in the supply chains. Moreover, diversifying trade partners and embracing digital transformation can enhance India's competitiveness and open new

avenues for export growth. By recognizing and addressing the challenges while strategically leveraging the opportunities, India can emerge stronger and more resilient in the global trade landscape.

A recent study is trying to identify the relationship between imports and exports and the relationship of imports and exports with the exchange rate. Exchange rate was the determinant variable used in this study. The study found that the merchandise trade and services trade in India for exports are better in the mean value range. Import and trade balance are negative values and import and export are negative values in services trade. They are low enlargement, negative for merchandise trade and near to growth of services trade in India. In this calculation of bar-graphs on exports and imports of top 10 commodities in India, 2020-21 and 2019-20, analysis for one-sample statistics and sample test export Top 10 commodities in India for 2019-20 & 2020-21 t-test P-value is very important for the rapid and stable growth of the country. Trade transactions need to be monitored, for which the framing of foreign trade policy is very important. The government has given the green light to the exporters to increase the output of different commodities. The country's exports and imports result in monetary transactions with the rest of the world.

REFERENCES

1. Agrawal, P. (2015). The role of exports in India's economic growth. *The Journal of International Trade & Economic Development*, 24 (6), 835-859.
2. Ahmad, J. (2001). Causality Between Exports and Economic Growth: What Do the Econometric Studies Tell Us? *Pacific Economic Review*, 6, 147-167.
3. Anwer, M. a. (2000). Exports and Economic Growth. *Indian Economic Journal*, 47, 79-88.
4. Anwer, M. a. (2000). Openness and Economic Growth: Evidence from Selected ASEAN Countries. *Indian Economic Journal*, 47, 110-117.
5. Din, M. U. (2004). Exports, imports, and economic growth in South Asia: Evidence using a multivariate time-series framework. *The Pakistan development review*, 105-124.
6. Esfahani, H. (1991). Exports, Imports, and Economic Growth in Semi-Industrialized Countries. *Journal of Development Economics*, 35, 93-116.
7. Ghatak, S. a. (1997). Exports Composition and Economic Growth: Cointegration and Causality Evidence for India. *Weltwirtschaftliches Archive: Review of World Economics*, 133, 538-553.
8. Giles, J. a. (2000). Export-Led Growth: A Survey of the Empirical Literature and Some Non-Causality Results. *Journal of International Trade and Economic Development*, 9, 261-337.
9. Gururaj, B., Satishkumar, M., & Kumar, M. K. (2016). Analysis of factors affecting the performance of exports in India. *International Journal of Agriculture, Environment and Biotechnology*, *9* (4), 613-616.
10. https://commerce.gov.in/wp-content/uploads/2022/02/English-Annual-Report-2021-22-Department-of-Commerce.pdf
11. Jairaj Joshi & Peenal Sankhla, (2020). A Study on Impact of Import and Export on Economic Growth of India. *International Journal of Creative Research Thoughts (IJCRT),* 8 (4), 1298-1305.
12. Jayachandran, G., & Seilan, A. (2010). A causal relationship between trade, foreign direct investment and economic growth for India. *International research journal of finance and economics*, *42*, 74-88.
13. Kaur, R. &. (2012). Trade Openness, Exports and Economic Growth Relationship in India: An Econometric Analysis. *DIAS Technology Review*, 8 (2), 43- 53. 18.

14. Kazunobu Hayakawa., & Hiroshi Mukunoki., (2021). The impact of COVID-19 on international trade: Evidence from the first shock. *Journal of the Japanese and International Economies.* 4, 1-12. https://doi.org/10.1016/j.jjie.2021.101135

15. Kotwal, A., Ramaswami, B., & Wadhwa, W. (2011). Economic liberalization and Indian economic growth: What's the evidence?. *Journal of Economic Literature*, 49 (4), 1152-99.

16. Kulkarni, K. G., & Meister, K. J. (2008). Trouble with import substitution and protectionism: a case of Indian economy. *International Journal of Economic Research,* 5 (1), 35-57.

17. Kumari, Jyoti. (2014). Export, Import and Economic Growth in India: A Study. *Management Dynamics*, 14 (1), 62-73.

18. Malhotra, D. K. (2014). Export-Led Growth in India: Cointegration and Causality Analysis. *Journal of Economics and Development Studies*, 2 (2), 297-310.

19. Mishra, P. K. (2011). The dynamics of relationship between exports and economic growth in India. *International Journal of Economic Sciences and Applied Research*, 4 (2), 53-70.

20. Mishra, P. K. (2012). The dynamics of the relationship between imports and economic growth in India. *South Asian Journal of Macroeconomics and Public Finance*, 1 (1), 57-79.

21. Padhan, P. C. (2004). Export and Economic Growth: An Empirical Analysis for India. *Artha Vijnan*, 46 (1-2), 179-190.

22. Rai, S. K., & Jhala, P. (2015). Impact of exports and imports on growth rate of India: an empirical enquiry. *Pacific Business Review International*, 8 (6), 53-58.

23. Ram, R. (1990). Import and Economic Growth: A Cross Country Study,. *Economica Internzionale*, 43, 45-66.

24. Rupali., Amrit Raj., Gaurav Singh Pathania & Gourav Kumar Dhiman. (2021). An Analytical Study On Indian Import Export System Of India. *International Journal of Creative Research Thoughts (IJCRT).* 9 (5), b567-b570.

25. Sachin N. Mehta, (2015). The Dynamics of Relationship between Exports, Import and Economic Growth in India. *RET Academy for International Journals of Multidisciplinary Research (RAIJMR),* 3 (7), 39-47.

26. Sharma, A., & Panagiotidis, T. (2005). An analysis of exports and growth in India: cointegration and causality evidence (1971–2001). *Review of Development Economics*, 9 (2), 232-248.

27. Sharma, K. (2003). Factors determining India export performance. *Journal of Asian Economics*, 14, 435-446.

28. Sneha Pandit Jadhav., Nikhil N. Jogdand & Harsha Kailash Jadhav. (2021). Impact of Covid-19 on Indian International Trade: A Roadmap Ahead.. *Aayushi International Interdisciplinary Research Journal (AIIRJ).* 8 (1), 19-23.

29. Srivastava, D. K., & Kapoor, G. (2007). Test of Export-Led Growth and Growth-Led Export Hypotheses in Indian Context: An Econometric Analysis for the Period of 1951-2004. *Asia Pacific Management Review*, *12*(2), 113-115.

30. Thangavelu, S. a. (2004). Is There an Export or Import-Led Productivity Growth in Rapidly Developing Asian Countries? A Multivariate VAR Analysis. *Applied Economics*, 36, 1083-93.

EFFECTIVENESS OF PERFORMANCE MONITORING SYSTEM : A STUDY WITH REFERENCE TO AN INDIAN IT COMPANY

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ABSTRACT

The study is to find out the effectiveness of the performance monitoring systems of organizations. The research examines the design and implementation of performance monitoring systems and their impact on employee performance and organizational effectiveness. In addition, the study examines the role of feedback, incentives, and employee involvement in improving performance monitoring systems. Through a comprehensive literature review and empirical analysis, this study aims to provide insight into how organizations can optimize the use of performance monitoring systems to improve employee performance and achieve organizational goals. The aim of the study is to understand the process Datalligence AI software in IT company, analyze Datalligence AI software's helps to improve the overall Productivity of the Company, know the role of Datalligence AI software Performance Monitoring System and know the Effectiveness of Employees Usage in Datalligence AI software. The survey is conducted with 71 respondents. In this research, Descriptive Research Design is used.Many respondents are strongly agreeing that the organization has the necessary time &personnel to effectively monitoring and update the performance. Encourage employees to provide feedback on their experience with the Datalligence AI software performance management system. That way, you can identify areas that need improvement and make changes to the system accordingly. Feedback can also help increase employee engagement, which can lead to better results. In summary, the effectiveness of a performance monitoring system using Datalligence AI software implementation, the organization can easily monitor the performance of the employees whenever they want, they can check the performance of the any employee from the software.

Key Words:Datalligence AI software, Performance Monitoring, and Key results

I.INTRODUCTION

Performance monitoring systems are tools that organizations use to measure, monitor, and evaluate the performance of their employees, departments and general operations. The effectiveness of these systems can have a significant impact on the success of an organization because they provide valuable information about areas that need improvement and where progress is being made.

In today's fast-paced business environment, organizations must be flexible and responsive to changes in their industry. Performance monitoring systems can help them achieve this by providing real-time information on Key Performance Indicators (KPIs) that are important to the business. This information can be used to identify trends, set benchmarks, and make informed decisions that can improve performance and profitability. Effective performance tracking systems can help organizations align their employees' performance

with their strategic goals and objectives. By setting clear performance metrics and goals, employees are more likely to be motivated to perform at their best and feel valued and recognized for their contributions. An effective performance monitoring system can transform organizations and provide them with the insights and tools they need to achieve their goals, optimize operations and stay ahead of the competition.

OBJECTIVES OF THE STUDY

- A study on the Effectiveness of Performance Monitoring System in an IT company, Chennai.
- To understand the process Datalligence AI software in an IT company.
- To analyze Datalligence AI software's help to improve the overall productivity of the Company.
- To know the role of Datalligence AI software Performance Monitoring System.
- To know the Effectiveness of Employees Usage in Datalligence AI software.

SCOPE OF THE STUDY

- The study aims to understand the employee's perception on the new implied OKR software.
- The main purpose of the Performance Monitoring System is to increase the productivity of employees.
- To assign the task based on the employees strengthen.
- To know about the issues faced by the employees on the newly implied OKR software.

STATEMENT OF THE PROBLEM

Effective performance monitoring is essential for organizations to achieve their goals and objectives. However, it is often challenging to measure the effectiveness of performance monitoring practices, and organizations may struggle to determine if they are allocating resources efficiently. Inadequate performance monitoring can lead to missed opportunities, decreased productivity, and suboptimal decision-making. Therefore, it is critical to assess the effectiveness of performance monitoring practices to ensure that organizations are utilizing their resources efficiently and effectively. This study aims to investigate the effectiveness of performance monitoring and identify areas for improvement in performance monitoring practices.

II.REVIEW OF LITERATURE

- ***Sumi Jha and Suman Kumar Jha, Effectiveness of Performance Management System, Indian Journal of Industrial Relations, Vol. 54, No. 1 (July 2018), pp. 79-93.***

The purpose of the article is to understand the effectiveness of the organization's performance management system. The authors tried to extract the parameters of the performance management efficiency of the organization's employees. Human resources employees of the organization act as supervisors. This article is based on agency theory. Therefore, based on the results, the Effectiveness of Performance Management System has been proposed.

- *Sajid Hussain Awan,Nazia Habib,Chaudhry Shoaib Akhtar, and Shaheryar Naveed, Effectiveness of Performance Management System for Employee Performance Through Engagement, Sage Journals,Vol. 10, Issue 4 (October 30, 2020)*

The purpose of this paper is to examine the effectiveness of a comprehensive performance management system in terms of employee performance. In addition, the mediating effect of work engagement was investigated. Performance management system (PMSE) was determined by its accuracy and fairness, as suggested by previous researchers. A sample of 285 employees was selected from branches of private banks across Pakistan. A structured questionnaire was used and validated with confirmatory factor analysis (CFA) in the context of Pakistan. The results showed significant effects of PMSE and work engagement on employee tasks and context. Additional mediation of employee engagement in the relationship between PMSE and employee performance (related to task and contextual performance) was also supported. The findings of the study will be helpful in developing HR and PMSE strategy for private banks in Pakistan. The study also suggests that a comprehensive PMSE model that includes perceived justice as a mandatory component can be adopted for better employee engagement and task/context-based performance. The mediating relationship between job performances established the PMSE process for employee task and contextual performance, a valuable contribution to research.

- *Janes O. Samwel, An Assessment of the Impact of Performance Management on Employee and Organization Performance - Evidence from Selected Private Organizations in Tanzania, International Journal of Human Resource Studies 8(3):199 (July 2018)*

Performance management is one of the most important key activities that organizations do to monitor the performance of their employees. Organizations must regularly evaluate the performance of their employees to understand their current and future capabilities. The purpose of this paper is to evaluate the impact of performance management on employee and organizational performance. The study adopted a cross-sectional research design and involved 120 HR officers and managers from selected private organizations in Tanzania. Data were collected through structured questionnaires and interviews and analyzed through descriptive and inferential statistics and the results were presented through tables. The results of the survey show that private organizations practice performance management and have an effective performance management system to evaluate the performance of their employees. In addition, the findings show that there is a significant relationship between performance management and employee performance and between performance management and organizational performance. The study recommends that private organizations maintain and continue to practice and implement effective performance management systems and continue to evaluate the performance of their employees frequently, as this helps identify training needs and at the same time serves as a motivational strategy that leads to employee and organizational performance improvement.

III.RESEARCH METHODOLOGY

Research methodology is a way of explaining how a researcher intends to carry out their research. It is a logical, systematic plan to resolve a research problem. A methodology details a researcher's approach to the research to ensure reliable, valid results that address their aims

and objectives.

The objective of research methodology is to frame the research process and provide instruments that will be used for the project's purpose. In order to assure accurate and trustworthy results thatanswer the research aims and objectives, it is more particularly about methodically designing a study.

RESEARCH DESIGN

Research design refers to the overall approach to conducting research projects. It's a logical plan to answer research questions through data collection, interpretation, analysis, and discussion. A research design is an arrangement of settings for data collection and analysis that seeks to combine relevance to the study goal with procedural economy. The blueprint for data collection, measurement, and analysis is the research design, which is the conceptual framework within which research is conducted.

☐ Descriptive Research Design:

This type of research design is purely on a theoretical basis where the individual collects data, analyses, prepares and then presents it in an understandable manner. It is the most generalised form of research design.

DATA COLLECTION

Primary Data

This process is the initial information gathering step, performed before anyone carriesout any further or related research. Primary data results are highly accurate provided the researcher collects the information. Primary data is information gathered directly from first-hand sources through surveys, observation, and experimentation.

Secondary Data

Secondary data is second-hand data collected by other parties and already having undergone statistical analysis. This data is either information that the researcher has tasked other people to collect or information the researcher has looked up. Simply put,its second-hand information.

Quantitative data makes up a majority of secondary data. The secondary data was gathered using the following methods:
- Journals & magazines
- Websites
- Company website

Convenience Sampling:

In this study, Convenience sampling is used to select the sample. Because of the simplicity with which the researcher can conduct it and contact the subjects.

TOOLS AND TECHNIQUES

- Percentage Analysis
- ANOVA
- Correlation
- Chi square

IV DATA ANALYSIS AND INTERPRETATION

Table 1 - OPINION OF RESPONDENTS TOWARDS IMPROVEMENT OF PERFORMANCE DUE TO THE USAGE OF DATALLIGENCE AI SOFTWARE

OPINION	NO.OF RESPONDENTS	PERCENTAGE
Always	17	23.9
Often	35	49.3
Rarely	13	18.3
Sometimes	6	8.5
Not at all	0	0
Total	**71**	**100**

From the above table, 49.3% of the respondents says that often performance of employeesimproves due to the usage of Datalligence AI software, 8.5% of the respondents says that sometimes performance of employees improves due to the usage of Datalligence AI software.

Table 2 – LEVEL OF SATISFACTION TOWARDS NEW SOFTWARE IMPLIED FOR PERFORMANCE MANAGEMENT SYSTEM

OPINION	NO.OF RESPONDENTS	PERCENTAGE
Highly Satisfied	25	35.2
Highly Dissatisfied	1	1.4
Neutral	10	14.1
Satisfied	30	42.3
Dissatisfied	5	7
Total	**71**	**100**

From the above table, 42.3% of respondents are satisfied with the new software implied for performance management system, 1.4% of respondents are highly dissatisfied with the new software implied for performance management system.

TABLE 3 – OPINION OF RESPONDENTS TOWARDS PERFORMANCE MANAGEMENT SYSTEM HELPSPEOPLE SET AND ACHIEVE MEANINGFUL GOALS

OPINION	NO.OF RESPONDENTS	PERCENTAGE
Strongly Agee	27	38
Strongly Disagree	0	0
Neutral	12	16.9
Agree	28	39.4
Disagree	4	5.6
Total	**71**	**100**

From the above table, 39.4% of respondents agree that performance management system helps people set and achieve meaningful goals, and 5.6% of respondents disagree that performance management system helps people set and achieve meaningful goals.

TABLE 4 – THE SOFTWARE HELPING THE EMPLOYEES TOIMPROVE SKILLS AND ABILITY

OPINION	NO.OF RESPONDENTS	PERCENTAGE
Highly Satisfied	27	38
Highly Dissatisfied	1	1.4
Neutral	11	15.5
Satisfied	29	40.8
Dissatisfied	3	4.2
Total	**71**	**100**

From the above table, 40.8% of respondents are satisfied with the software helping the employees to improve skills and ability, and 1.4% of respondents are highly dissatisfied with the software helping the employees to improve skills and ability.

TABLE 5 - OPINION ABOUT DATALLIGENCE AI SOFTWARESUPPORTING THE PERFORMANCE INDICATION

OPINION	NO.OF RESPONDENTS	PERCENTAGE
Very Good	30	42.3
Very Bad	1	1.4
Neutral	10	14.1
Good	27	38
Bad	3	4.2
Total	**71**	**100**

From the above table, 42.3% of respondents have very good opinion about Datalligence AI software supporting the performance indication 1.4% of respondents have very bad opinion about Datalligence AI software supporting the performance indication.

Comparison of Experience of the employees and Datalligence AI software metrics

well defined.

H0: There is no significance difference between Experience and Datalligence AI software metrics   well defined.

TABLE 6 ONE WAY ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
BetweenGroups	6.336	3	2.112	1.583	.202
WithinGroups	89.382	67	1.334		
Total	95.718	70			

From the table, it is interpreted that the significance value is 0.202 which is more than 0.05. Hence the null hypothesis is accepted and the alternative hypothesis is rejected. So, there is no significance difference between Experience of the employees and Datalligence AI software metrics well defined.

V.CONCLUSION

The study on Effectiveness of Performance Monitoring System using the Datalligence AI software has revealed that the Datalligence AI software helps to monitor the performance of the employees. Once the daily task is set for the employees in the software. The employees must update the status of the task which is allotted to them by the end of the day. Once they update the status the management will know that whether the employeehas completed the task or not. This software helps to maintain the records of the daily task,which will help in the management in the end of the month to review the work of the employees. In summary, the effectiveness of a performance monitoring system using Datalligence AI software implementation, the organization can easily monitor the performance of theemployees whenever they want, they can check the performance of the any employee fromthe software.

REFERENCES

- *Sumi Jha and Suman Kumar Jha, Effectiveness of Performance Management System,Indian Journal of Industrial Relations, Vol. 54, No. 1 (July 2018), pp. 79-93 (15 pages)*

- *Sajid Hussain Awan,Nazia Habib,Chaudhry Shoaib Akhtar, and Shaheryar Naveed, Effectiveness of Performance Management System for EmployeePerformance Through Engagement, Sage Journals,Vol. 10, Issue 4 (October 30,2020)*

- *Janes O. Samwel, An Assessment of the Impact of Performance Management on Employee and Organization Performance - Evidence from Selected Private Organizations in Tanzania, International Journal of Human Resource Studies 8(3):199 (July 2018)*

- *Jawaria Andleeb Qureshi, Asad Shahjehan, Zia-ur-Rehman and Bilal Afsar, Performance management systems: A comparative analysis, African Journalof Business Management 4(9):1856-1862 (August 2010)*

- *Dr.Bernardus Franco Maseke, Viola Karungu Unengu, Tuukondjelanee Haufiku, Effectiveness of Performance Management System on Employee Performance, International Journal of Management and Commerce Innovations, Vol.9, Issue 2, pp: (440-452), Month: October 2021 - March 2022*

- *Dr. L. Vijay & B. Jayachitra, Effectiveness of Performance Management System, International Journal of Advanced Research in Management (IJARM), Vol 1, Issue*

- *Ng Kai Xin, The Effectiveness of Performance Management System in Manufacturing Industry, Universiti Tunku Abdul Rahman, (April 2019)*

- *Priyanka Shrivastava, Impact of Effectiveness of Performance Management System on Employee Satisfaction and Commitment, International Journal of Management Research & Review (IJMRR) Volume 8, Issue 4 - Article No-1/1-8,(April 2018)*

- *R.G.Ratnawat and Dr P.C.Jha, A Commentary on Effectiveness of Performance Management, International Journal of Scientific & Engineering Research Volume4, Issue3, (March 2013)*

DOES GREEN PSYCHOLOGICAL FACTORS INFLUENCE OCBE: A CONCEPTUAL FRAMEWORK

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ABSTRACT

This study examines how organizational citizenship behavior toward the environment is influenced by green psychological capital and green psychological climate. The literature has shown a substantial relationship between green psychological resources and organizational civic behavior toward the environment (OCBE), but there is not enough research on the potential benefits of taking both psychological elements into account simultaneously with OCBE. Using a literary search technique, the current study looked at and assessed previous research on the relationship between green psychological capital, green psychological climate, and organizational citizenship behavior. The paper presents the conceptual framework relating the study variables which can be empirically tested in future research.

Keywords: organizational citizenship behavior, green psychological resources, green psychological capital, green psychological climate

I. INTRODUCTION

Environmental sustainability is becoming increasingly important because of the growing environmental degradation that both the current and the future generation will have to deal with. It is essential that local government assume the responsibility of serving as the government's direct community representative. Further, it can encourage sustainable lifestyle practices and improve the well-being of the community by amending laws, establishing new practices, and supporting sustainable living (Coenen et al., 2012). The degree of sustainability has a significant impact on an organization's ability to achieve high performance (Luthans et al., 2007). Organizations have shared membership in the public and in businesses and therefore employees' environmentally friendly actions deserve greater consideration (Zientara & Zamojska, 2018). All employees should consider environmental consciousness as the first step to achieve outstanding environmental success. Similarly, organizations that seek to contribute value beyond economic perspectives and take ecological advantages into account adhere to green human resource management practices (Chatelain et al., 2018). To address this, the strategic management of the company seeks to instill pro-environmental and green psychological awareness in its workforce (Saeed et al., 2019).

Conchie et al. (2009) noted that green psychological environment is made up of specific green practices, rules, and processes that represent the green values of the organization. An organization

conveys that its employees are the cornerstone of the enterprise when it has a robust environmental strategy (Wang et al., 2017). Therefore, to alter the attitudes and behaviours of those involved in the organization, environmental education is essential (Ginsburg et al., 2016). When employees exhibit environmentally conscious behaviour, the organizational management will improve, particularly when it comes to employees' efforts to safeguard the environment at work. This behaviour encompasses a variety of strategies, including lowering workplace pollution, figuring out waste reduction strategies, advocating for and utilizing green technologies, and going to environmental conferences to expand one's knowledge on environmental protection management (Febriani & Irawati, 2024).

II. BACKGROUND

When employees go above and beyond the call of duty to accomplish corporate environmental goals, they are engaging in pro-environmental organizational citizenship behavior known as organizational citizenship behavior for the environment (OCBE) (Norton et al., 2015). Boiral and Paillé (2012) defined organizational citizenship behavior for the environment (OCBE) as the conglomeration of eco-helping, eco-civic participation, and eco-initiatives. Besides, OCBE is the "discretionary pro-environmental act by employees in the organization that are not motivated by rewards or requirements" (Daily et al., 2012). Previous work says that OCBE primarily reflects employees' voluntary efforts and inspiration to pursue environmental projects (Paillé et al 2022). In addition, employees' OCBE has drawn more attention since it may support the organization's sustainable growth while also satisfying stakeholders' demands for environmental protection (Ullah et al., 2021). On similar lines, Paillé and Raineri (2015) emphasized businesses with more OCBE tend to be supported by environmental policies. In order to improve the corporate environmental performance, this proactive employee behavior closes the environmental gap outside of formal business processes (Alt and Spitzeck, 2016).

Boiral (2009) employed the six primary OCB categories as put forth by Organ et al. (2006), an effort to investigate the nature and extent of OCBEs. The dimension includes (1) helping acts of compassion and altruism in the workplace, which includes working with other departments and aiding in the resolution of environmental issues, (2) sportsmanship which entails recognizing the obstacles connected with environmental projects and the additional time and effort required to finish them, (3) organizational loyalty address the support for the organization's environmental policies, involvement in environmental events organized by the organization, and favorable representation of the organization in public discourse, (4) organizational compliance: observing environmental standards may be a part of upholding implicit or explicit organizational values and ideals, (5) individual initiative: Individual initiatives could be based on internal involvement in environmental activities, like making suggestions, sharing information, and trying to cut down on waste, and (6) self-development: acquiring personal knowledge that will help the company better integrate environmental challenges is another aspect of self-development. Earlier studies have disclosed the factors that support OCBE, such as workers' capacity for engagement (Alt & Spitzeck, 2016), organizations' supervision (Paillé et al., 2019), and an environment-friendly work environment (Zientara & Zamojska, 2018). Overall, when it comes to organizational citizenship for the environment (OCBE), it is crucial to consider the actions of employees.

III. METHODOLOGY

In the present study, a comprehensive literary search approach was employed to delve into and evaluate existing literature concerning the intricate relationship between green psychological capital,

green psychological climate, and organizational citizenship behavior (OCBE). To ensure a thorough exploration of relevant scholarly works, prominent online databases such as Web of Science, Scopus, Science Direct, and Google Scholar were systematically included in the search. The focus of the advanced search was deliberately confined to OCBE and psychological resources, aiming to extract insights and findings directly related to these critical components within organizational settings. This targeted approach allowed for a nuanced analysis of the interplay between green psychological capital and green psychological climate, with a specific emphasis on their impact on organizational citizenship behavior. To maintain a high standard of credibility and relevance, the study exclusively drew references from peer-reviewed journal articles and authoritative book chapters. This meticulous selection criterion ensures that the information synthesized is grounded in rigorous research methodologies and contributes meaningfully to the understanding of the complex dynamics between green psychological factors and employee behaviors within organizational contexts.

IV. RESEARCH PROPOSITIONS

In the contemporary market economy, psychological capital is referred to be the core capital following economic, social, and human capital. On similar vein, previous research also showed that psychological resources are integrated into the nonmaterial resource framework (Luthans et al., 2007). A person's psychological capital demonstrates their optimistic outlook on life. It is an essential resource—both mental and physical—and a crucial sign of one's overall health (Luthans et al., 2004). Numerous psychological capital research has used the positive psychology notion. As positive psychology, for instance, may also have a significant impact on a person's life satisfaction and sales success (Friend et al., 2016). Further, broaden- and-build theory revealed that happy emotions have unique properties that can instantly expand one's exploratory thinking and access to a variety of resources, encouraging positive behaviors and creativity (Fredrickson, 2001). According to Lyngdoh et al. (2018), people who experience more positive emotions are happier and typically exhibit greater resilience to stress and overall wellbeing. Psychological capital comprises four components: optimism, resilience, hope, and self-efficacy. Self-efficacy is the ability to work hard and succeed in the face of adversity. Optimism is the belief that optimism leads to success both now and in the future. Hope is the persistence to pursue a goal and the flexibility to change course when necessary. Resilience is the ability to persevere through adversity and quickly adjust one's own state in order to make progress and eventually succeed. (Luthans, & Avolio 2006). In the present scenario, the novel construct, "green psychological capital," with reference to psychological capital research (Lorenz et al. 2016) is emphasized for sustainability. Green psychological capital is described as "an individual's positive psychological state during environmental activities" by Chen and Yan (2022). The four dimensions represent the green psychological capital are "green resilience," "green optimism," "green hope," and "green self-efficacy", as represented in the psychological capital research.

Earlier studies showed psychological capital can help people to build and preserve their resources by motivating them to demonstrate OCB (Wörtler, 2022). It has been established that taking part in OCB wears out employees and requires a lot of financial and human resources (Bergeron, 2014). Consequently, high-level of psychological capital is a tool to assist employees in increasing their OCB practice (Xu et al., 2019). Psychological capital exhibits more helpful behaviour toward their colleagues and have a more optimistic view on people and situations. Further, it enables employees to go above and beyond in aiding their peers in accomplishing their objectives. Workers that exhibit high psychological capital (self-efficacy, hope, optimism, and resilience) tend to keep an optimistic outlook even in the face of adversity and attempt to identify the good things in their work

surroundings. They have hope for the future and think they can overcome obstacles and move past painful emotional experiences (Nawaz et al., 2020).

From the above grounds, it can be proposed that green psychological capital can increase the organizational citizenship behaviour towards environment.

Proposition 1: Green psychological capital will show a positive relationship with OCBE

Employees who believe that the company's environmental policies and practices promote environmental sustainability and green ideals are said to have a green psychological climate (Zhou et al., 2018). A green psychological climate refers to the collective perception of the workforce about the organization's capacity to raise environmental standards (Dumont et al., 2017). Patterson et al. (2005) signifies employee's impressions of the organization and work environment are encompassed by psychological climate. The psychological climate at work refers to how employees evaluate the work environment based on their cognitive deductions from events and psychological processing of their perceptions to provide more insightful interpretations of the realities of the business. Further psychological climate is one of the resources by taking support from the job demand resource model (Bakker et al. 2001). Thus, the psychological climate of an organization is shaped by the way its employees interact with its social environment and engage in discussions about its policies and practices.

Besides, the positive green psychological climate (PGC) represents an individual's opinion about their workplace (Burke et al., 2002). For example, if workers are not held accountable for the equipment they use and the energy they consume, they will be less likely to participate in green initiatives and exhibit sustainable behaviours (Chou, 2014). Earlier studies showed significant relations between GPC and proactive and task-related green behavior (Norton et al. 2017). Social cognitive processes shape employees' collective perspective of the policies, practices, and procedures of the business (Nishii et al., 2008; Zientara and Zamojska, 2018). In addition to encouraging green activity, a green psychological climate also motivates people to act in a discretionary, pro-social manner (Norton et al., 2017). Previous studies have indicated that pro-environmental activities by employees may be encouraged by the psychological climate (Kuenzi and Schminke, 2009; Zientara and Zamojska, 2018). Given that environmentally conscious actions are typically voluntary (Robertson and Barling, 2017), the current study hypothesizes that an atmosphere that is greener psychologically will improve OCBE. Employers encourage their employees to embrace eco-friendly habits and set green goals to shift their viewpoints. Failure to go green runs the danger of making employees perceive the company as less socially conscious, which could exacerbate psychological climate perceptions and promote pro-environmental behaviour (Whitmarsh & O'Neill, 2010). Organizations must identify the stakeholders at every level, from environmental management to job design, to improve their environmental performance (Saeed et al., 2019). In this way, workers become aware of their responsibilities to participate in eco-friendly activities (Pinzone et al., 2019).

From the above discussion it is proposed that:

Proposition 2: Green psychological climate will show positive relationship with OCBE.

The research model as given in Figure 1, is derived on the conservation of resources (COR) theory and affective event theory. According to the COR theory, individuals who possess abundant personal resources are more inclined to allocate resources towards the organization (Smith et al., 1983). According to the affective events theory, employees' emotional experiences at work have a significant

impact on their attitudes and behaviours (Weiss & Cropanzano, 1996). The overconsumption of resources leads to the emergence of OCB (Sri Ramalu & Janadari, 2022). According to the study's premise, workers with high psychological capital scores are better able to uphold favourable psychological environments at work and, as a result, exhibit more positive attitudes about other people and objects. Employees who possess high levels of psychological capital (self-efficacy, hope, optimism, and resilience) tend to be optimistic in the face of adversity and attempt to identify the positive parts of working in unfavourable surroundings and conditions. Subsequently, the psychological climate at work describes how employees assess the workplace using their cognitive inferences from occurrences and psychological analysis of their impressions to offer more perceptive analyses of the business realities. Thus, the study proposed that:

Proposition 3: Green psychological climate can act as mediator in the relationship between green psychological capital and OCBE.

CONCEPTUAL FRAMEWORK

The research model for the study is presented in the Figure 1 linking green psychological capital, green psychological climate and Organisational citizenship behaviour towards environment (OCBE).
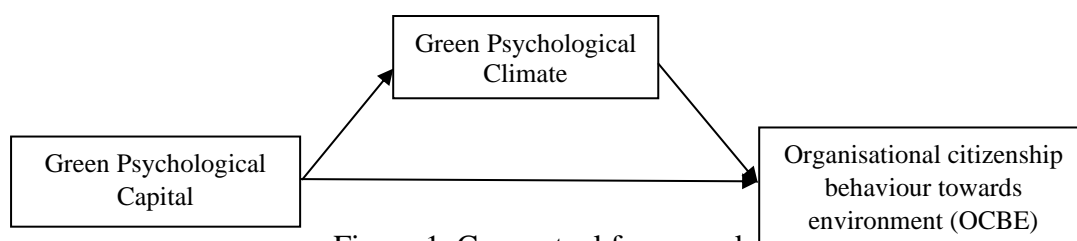

Figure 1. Conceptual framework

Green psychological capital is the independent variable, green psychological climate is the mediating variable and organisational citizenship behaviour towards environment is the dependent variable.

V. CONCLUSION

In addition to the exploration of existing literature, this study goes beyond a mere review by contributing a robust theoretical framework that holds significant potential for guiding future research endeavors in the field. The developed theoretical framework serves as a valuable tool for scholars and researchers seeking to delve deeper into the intricate dynamics between green psychological capital, green psychological climate, and organizational citizenship behavior (OCBE). Moreover, the study highlights the pivotal role played by psychological resources and human cognitive abilities in shaping an individual's pro-social behaviors within their organizational milieu. By emphasizing the importance of these elements, the research underscores the fundamental need for a psychological foundation and cognitive prowess to facilitate the manifestation of positive behaviors towards the environment.

Notably, this study distinguishes itself as a trailblazer in its domain by being the first to continuously refine and enhance the theoretical framework. This iterative process takes into careful consideration resources such as green psychological capital and climate, aiming to provide a more comprehensive understanding of how these factors influence and improve organizational citizenship behavior, particularly concerning environmental concerns.

By breaking new ground in this manner, the study not only expands the current knowledge base but also sets a precedent for future investigations in the realm of organizational psychology and environmental sustainability. The insights gleaned from this research serve as a catalyst for advancing scholarly discourse and fostering a deeper comprehension of the interplay between psychological factors, organizational behaviors, and their collective impact on environmental stewardship.

REFERENCES

Alt, E., & Spitzeck, H. (2016). Improving environmental performance through unit-level organizational citizenship behaviors for the environment: A capability perspective. *Journal of environmental management*, *182*, 48-58.

Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*(3), 499-512.

Bergeron, D., Ostroff, C., Schroeder, T., & Block, C.(2014). The dual effects of organizational citizenship behavior: Relationships to research productivity and career outcomes in academe. *Hum. Perform. 27*, 99–128.

Boiral, O. (2009). Greening the corporation through organizational citizenship behaviors. *journal of Business Ethics*, *87*, 221-236.

Boiral, O., & Paillé, P. (2012). Organizational citizenship behaviour for the environment: Measurement and validation. *Journal of business ethics*, *109*, 431-445.

Burke, M. J., Borucki, C. C., & Kaufman, J. D. (2002). Contemporary perspectives on the study of psychological climate: A commentary. *European Journal of Work and Organizational Psychology*, *11*(3), 325–340

Chatelain, G., Hille, S. L., Sander, D., Patel, M., Hahnel, U. J. J., & Brosch, T. (2018). Feel good, stay green: Positive affect promotes pro-environmental behaviors and mitigates compensatory "mental bookkeeping" effects. *Journal of Environmental Psychology, 56*, 3–11.

Chen, Y.-S. & Yan, X. (2022). The Small and Medium Enterprises' Green Human Resource Management and Green Transformational Leadership: A Sustainable Moderated-Mediation Practice. *Corp. Soc. Responsib. Environ. Manag. 29*, 1341–1356.

Chou, C. J. (2014). Hotels' environmental policies and employee personal environmental beliefs: Interactions and outcomes. *Tourism management*, *40*, 436-446.

Coenen, F., & Menkveld, M. (2013). The role of local authorities in a transition towards a climate-neutral society. In *Global warming and social innovation* (pp. 107-125). Routledge.

Conchie, S.M. & Donald, I.J. (2009). The moderating role of safety-specific trust on the relation between safety-specific leadership and safety citizenship behaviors. *J. Occup. Health Psychol. 14*, 137–147.

Daily, B. F., Bishop, J. W., & Massoud, J. A. (2012). The role of training and empowerment in environmental performance: A study of the Mexican maquiladora industry. International *Journal of Operations & Production Management, 32*(5), 631-647.

Dumont, J., Shen, J., & Deng, X. (2017). Effects of green HRM practices on employee workplace green behavior: The role of psychological green climate and employee green values. *Human resource management*, *56*(4), 613-627.

Febriani, R., & Irawati, S. (2024). The role of organizational citizenship behavior for environment (OCBE) in mediating the effect of Corporate Social Responsibility (CSR) on green performance. In *Environmental Issues and Social Inclusion in a Sustainable Era* (pp. 289-294). Routledge.

Fredrickson, B.L. (2001). The Role of Positive Emotions in Positive Psychology: The Broaden-and-Build Theory of Positive Emotions. *Am. Psychol. 56,* 218.

Friend, S.B., Johnson, J.S., Luthans, F., & Sohi, R.S. (2016). Positive Psychology In Sales: Integrating Psychological Capital. *J. Mark. Theory Pract. 24,* 306–327.

Ginsburg, L., Berta, W., Baumbusch, J., Dass, A.R., Laporte, A., & Reid, R.C.(2016). Measuring Work Engagement, Psychological Empowerment, and Organizational Citizenship Behavior Among Health Care Aides. *Gerontologist. 56*, e1–e11.

Kuenzi, M., & Schminke, M. (2009). Assembling fragments into a lens: A review, critique, and proposed research agenda for the organizational work climate literature. *Journal of management*, *35*(3), 634-717.

Lorenz, T., Beer, C., Pütz, J., & Heinitz, K.(2016). Measuring Psychological Capital: Construction and Validation of the Compound PsyCap Scale (CPC-12). *PLoS ONE. 11,* e0152892.

Luthans, F., Avolio, B.J., Avey, J.B. & Norman, S.M. (2007). Positive psychological capital: Measurement and relationship with performance and satisfaction. *Personnel Psychology, 60*, 541-572.

Luthans, F. & Avolio, B.J. (2006).Psychological capital development: Toward a micro-intervention. *J. Organ. Behav. 27,* 387–393.

Luthans, F., Luthans, K.W., & Luthans, B.C. (2004). Positive Psychological Capital: Beyond Human and Social Capital. *Bus. Horiz.* 45–50.

Lyngdoh, T., Liu, A.H., & Sridhar, G.(2018). Applying Positive Psychology to Selling Behaviors: A Moderated–Mediation Analysis Integrating Subjective Well-Being, Coping and Organizational Identity. *J. Bus. Res. 92*, 142–153.

Nawaz, M., Abid, G., Arya, B., Bhatti, G.A., & Farooqi, S. (2020). Understanding employee thriving: The role of workplace context, personality and individual resources. *Total Qual. Manag. Bus. Excell. 31,* 1345–1362.

Nishii, L. H., Lepak, D. P., & Schneider, B. (2008). Employee attributions of the "why" of HR practices: Their effects on employee attitudes and behaviors, and customer satisfaction. *Personnel psychology*, *61*(3), 503-545.

Norton, T. A., Parker, S. L., Zacher, H., & Ashkanasy, N. M. (2015). Employee green behavior: A theoretical framework, multilevel review, and future research agenda. *Organization & Environment*, *28*(1), 103-125.

Norton, T. A., Zacher, H., Parker, S. L., & Ashkanasy, N. M. (2017). Bridging the gap between green behavioral intentions and employee green behavior: The role of green psychological climate. *Journal of Organizational Behavior*, *38*(7), 996-1015.

Organ, D., P. Podsakoff & S. MacKenzie (2006). Organizational Citizenship Behavior: Its Nature, Antecedents, and Consequences (Sage Publications, Thousand Oaks, CA).

Paillé, P., & Raineri, N. (2015). Linking perceived corporate environmental policies and employees eco-initiatives: The influence of perceived organizational support and psychological contract breach. *Journal of Business Research*, *68*(11), 2404-2411.

Paillé, P., Mejía-Morelos, J. H., Amara, N., & Norrin, H. (2022). Greening the workplace through supervisory behaviors: assessing what really matters to employees. *The International Journal of Human Resource Management*, *33*(9), 1754-1781.

Paillé, P., Morelos, J.H.M., Raineri, N., & Stinglhamber, F.(2019). The influence of the immediate manager on the avoidance of non-green behaviors in the workplace: A three-wave moderated-mediation model. *J. Bus. Ethics.155,* 723–740.

Patterson, M. G., West, M. A., Shackleton, V. J., Dawson, J. F., Lawthom, R., Maitlis, S., ... & Wallace, A. M. (2005). Validating the organizational climate measure: links to managerial practices, productivity and innovation. *Journal of organizational behavior*, *26*(4), 379-408.

Pinzone, M., Guerci, M., Lettieri, E., & Huisingh, D. (2019). Effects of 'green'training on pro-environmental behaviors and job satisfaction: Evidence from the Italian healthcare sector. *Journal of cleaner production*, *226*, 221-232.

Robertson, J. L., & Barling, J. (2017). Toward a new measure of organizational environmental citizenship behavior. *Journal of Business Research*, *75*, 57-66.

Saeed, B. B., Afsar, B., Hafeez, S., Khan, I., Tahir, M., & Afridi, M. A. (2019). Promoting employee's proenvironmental behavior through green human resource management practices. *Corporate Social Responsibility and Environmental Management*, *26*(2), 424-438.

Sri Ramalu, S. & Janadari, N. (2022). Authentic leadership and organizational citizenship behaviour: The role of psychological capital. *Int. J. Product. Perform. Manag. 71*, 365–385.

Smith, C., Dennis, O., & Janet, N.(1983). Organizational citizenship behavior: Its nature & antecedents. *J. Appl. Psychol. 68*, 653–663.

Ullah, I., Wisetsri, W., Wu, H., Shah, S. M. A., Abbas, A., & Manzoor, S. (2021). Leadership styles and organizational citizenship behavior for the environment: the mediating role of self-efficacy and psychological ownership. *Frontiers in psychology*, *12*, 683101.

Wang, X., Liu, L., Zou, F., Hao, J., & Wu, H.(2017). Associations of Occupational Stressors, Perceived Organizational Support, and Psychological Capital with Work Engagement among Chinese Female Nurses. *Biomed Res. Int.* 5284628.

Weiss, H.M. & Cropanzano, R. (1996).Affective events theory. *Res. Organ. Behav. 18,* 1–74.

Whitmarsh, L., & O'Neill, S. (2010). Green identity, green living? The role of pro-environmental self-identity in determining consistency across diverse pro-environmental behaviours. *Journal of environmental psychology*, *30*(3), 305-314.

Wörtler, B., Van Yperen, N.W., & Barelds, D.P. (2020). Do individual differences in need strength moderate the relations between basic psychological need satisfaction and organizational citizenship behavior? *Motiv. Emot. 44,* 315–328.

Xu, J., Xie, B., & Chung, B. (2019). Bridging the gap between affective well-being and organizational citizenship behavior: The role of work engagement and collectivist orientation. *Int. J. Environ. Res. Public Health. 16,* 4503.

Zhou, S., Zhang, D., Lyu, C., & Zhang, H. (2018). Does seeing "mind acts upon mind" affect green psychological climate and green product development performance? The role of matching between green transformational leadership and individual green values. *Sustainability, 10*(9), 3206.

Zientara, P., & Zamojska, A. (2018). Green organizational climates and employee pro-environmental behaviour in the hotel industry. *Journal of Sustainable Tourism*, *26*(7), 1142-1159.

EMPLOYEE MOTIVATION IN THE 21ST CENTURY: RETHINKING THE ROLE OF BENEFITS IN LOGISTICS INDUSTRY

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ABSTRACT

The evolving 21st-century logistics industry demands a shift in employee motivation strategies, moving beyond traditional financial incentives and towards a nuanced understanding of diverse, intrinsic motivators. This study investigates the effectiveness of benefit systems in driving performance within this context. Focusing on Dhara Logistics, we explore employee demographics, satisfaction with various benefits, and key insights.

Findings reveal a young workforce with varying levels of benefit satisfaction based on demographics and gender. While core benefits like death and disablement compensation are well-received, discrepancies exist with family benefits, travel allowances, and the office environment. Notably, women express higher overall satisfaction compared to men.

These findings suggest tailoring benefit programs to specific demographics and addressing gender-based discrepancies. Recommendations include revising travel allowances, implementing non-monetary motivators, prioritizing work environment improvements, and bridging the communication gap.By embracing a strategic approach to benefits that transcends financial rewards and addresses intrinsic motivators, logistics organizations can unlock the full potential of their workforce, fostering engagement and propelling performance to new heights.

Keywords: Employee Motivation, Logistics Industry, Benefits, Intrinsic Motivators.

I.INTRODUCTION

While traditional employee benefits offered an array of financial and non-financial rewards, the evolving 21st-century workplace demands a shift. This paper argues that while financial incentives remain important, truly effective benefit systems require a nuanced understanding of diverse motivational factors, including intrinsic desires for autonomy, mastery, and purpose. Moving beyond compensation, contemporary benefits emphasize alternative offerings like flexible work arrangements, personalized wellness programs, professional development, and recognition schemes, fostering employee well-being, ownership, and growth. To maximize the impact on performance, strategic alignment is key, achieved through performance-based benefits, continuous feedback and development opportunities, and tailoring packages to individual needs and aspirations. By embracing this shift, organizations can empower employees, cultivate a holistic motivation framework, and ultimately drive desired performance outcomes.

By integrating a deeper understanding of intrinsic motivators with innovative benefit design strategies, organizations can move beyond traditional compensation models and create systems that foster a highly motivated and engaged workforce. This shift promises to hold significant implications

for talent management, performance optimization, and ultimately, organizational success in the 21st century.

II.REVIEW OF LITERATURE

General Motivation and Benefits:

Amabile, T. M. (2009). Creativity in context: The role of work environment, leadership, and personality. Springer. (Examines how benefits can foster creativity and engagement)

Lawler, E. E. (2015). Pay and benefit inequality. Oxford University Press. (Analyzes the impact of benefit disparity on motivation and performance)

Maslow, A. H. (1954). Motivation and personality. Harper & Row. (Provides a foundational framework for understanding intrinsic and extrinsic motivators, including benefits)

Ostroff, C., & Hanges, P. J. (2000). The psychological contract in organizations: A reciprocal exchange process. Journal of Management, 26(6), 985-1027. (Explores the role of perceived fulfillment of benefit promises in employee motivation)

Logistics Industry Specific:

Abraham, Z., & Appelbaum, S. H. (2001). Understanding work in the low-wage service sector. Harvard Business Review, 79(4), 96-109. (Analyzes the importance of benefits in attracting and retaining talent in lower-paid industries, including logistics)

Blackley, P., & Cox, A. (2004). Managing the logistics workforce: An international study. Routledge. (Compares approaches to employee motivation and benefits across different logistics contexts)

Gunasekaran, A., & Ngai, E. W. T. (2005). Application of performance measures in supply chain management: A review of metrics and frameworks. The International Journal of Logistics Management, 16(1), 23-45. (Highlights the potential link between employee satisfaction and supply chain performance)

Johnsen, E., & Falkenberg, K. (2012). Logistics drivers' working conditions and safety: A research review. Transportation Research Part F: Traffic Psychology and Behaviour, 15(5), 509-522. (Addresses the impact of benefits on driver well-being and safety in the logistics industry)

Trends in Benefits and Motivation:

Cappelli, P. (2016). Willful disruption: Why the future of work is flexible and why that is a good thing. Wharton School Press. (Discusses the growing shift towards flexible benefits and personalized rewards)

Deloitte. (2018). Global Human Capital Trends 2018. (Provides insights into emerging trends in employee benefits and their impact on motivation)

Gratton, L., & Scott, D. (2016). The 100-Year Life: Living and working in an age of longevity. Bloomsbury Publishing. (Explores the need for benefits adapted to changing employee needs and career trajectories)

PwC. (2022). Workforce Trends 2022: Automation, AI, and the new social contract. (Examines how technology is transforming the workplace and the implications for employee benefits)

Methodology and Measurement:

Aguinis, H. (2012). Performance management. Pearson Education. (Provides a framework for analyzing the effectiveness of benefit programs in driving performance)

Becker, H. E. (1993). Investment in human capital and the economic performance of firms: The case of Japan. RAND Journal of Economics, 24(4), 865-896. (Pioneering research on the link between employee investments, including benefits, and organizational performance)

Cohen, S. G. (1989). Psychological stress and the aging process. Oxford University Press. (Explores the role of workplace benefits in promoting employee well-being and stress management)

Podsakoff, P. M., MacKenzie, S. B., Moorman, C. G., & Tetrick, L. E. (1990). The relationship of organizational citizenship behaviors to individual characteristics and organizational support. Management Science, 36(5), 373-392. (Provides a model for understanding how organizational support, including benefits, can influence employee behavior)

Specific Types of Benefits:

Allen, T. D., & Pfeffer, J. (2000). Work-family conflict and the structure of work. Journal of Marriage and Family, 62(1), 86-101. (Examines the effectiveness of work-life balance benefits

III.METHODOLOGY

This study probes the effectiveness of Logistic Industry' benefit system in motivating employees in the modern workplace. Concerns around incentives and bonuses, impacting employee satisfaction and extra hours, are examined. Improved benefits hold potential to boost both organizational performance and employee well-being.

Objectives:

Primary objective:

- To conduct a comprehensive study on the role of employee benefits as a motivational tool for performance improvement within Logistics Industry.

Secondary objectives:

- To measure the potential negative impact of benefit deficiencies on employee morale and satisfaction.
- To identify opportunities for optimizing the value proposition of existing benefits through innovative design and delivery strategies.
- To evaluate the effectiveness of current benefit administration methods within the organization, identifying potential areas for improvement.
- To quantify the degree of employee satisfaction with the offered benefits package.

A descriptive research design is employed to analyze the current benefits system and its perceived effectiveness. Data collection from Logistic Industry employees via questionnaires and external research on industry trends in benefits and motivation provide insights.

Questionnaire data is analyzed using percentages and weighted averages to summarize responses and identify key trends. Statistical tools like Chi-square, ANOVA, regression, and factor analysis are

employed to uncover potential relationships between variables, understand the impact of different benefits on motivation, and identify underlying factors influencing employee perceptions.

Due to practical constraints, a convenience sample of 51 Logistic Industry employees is chosen. Research is conducted at their Mannady, Chennai branch. Microsoft Office 2007 and SPSS 19.0 are used for data management, analysis, and visualization.

This concise summary condenses the key points of the research methodology within 50 lines, providing a clear overview of the study's objectives, methods, and tools.

IV.DATA ANALYSIS AND DISCUSSION

Major Findings:

Employee Demographics:

Over 40% of employees work in the clearance department, followed by clerks and administration staff.

The workforce skews younger, with over 80% under 30 years old.

The majority of employees are female (62%).

Most employees are single (78%).

Over 80% have undergraduate (UG) qualifications.

Benefit Satisfaction:

Highly satisfied benefits:

Death compensation: Administrative staff and managers.

Disablement compensation: Accounts staff, managers, administrative, clearance, and supervisor levels.

Maturity benefit: Both men and women.

Family benefit: Employees aged 31-35, with others satisfied.

Leave travel allowance: Unmarried employees.

Life insurance: Managers and clerks.

Welfare activities: Accounts and administration staff.

Respondent insurance: Both married and unmarried.

Health insurance: All employees, with single employees highly satisfied.

Service awards: Single employees, with others satisfied.

Satisfied benefits:

Employment injuries: All age groups except 20-25.

Provident fund: Accounts and clerk staff, with others satisfied.

Pension: Supervisors and administration staff, with others satisfied.

Maternity benefit: Clerks and clearance staff, with others satisfied.

Gratuity: Both married and unmarried.

Education facilities: Both married and unmarried.

Pension: Supervisors and administration staff, with others satisfied.

Neutral/Dissatisfied benefits:

Child care facilities: Men somewhat dissatisfied, women slightly more dissatisfied.

Employee meal allowances: Women dissatisfied.

Travel allowances: Women slightly dissatisfied.

Awards (trophies, certificates): Both genders slightly dissatisfied.

Office environment (windows, flexible hours): Both genders slightly dissatisfied.

Overall satisfaction: Women satisfied, men slightly dissatisfied.

Key Insights:

Younger employees with UG qualifications dominate the workforce.

Satisfaction with core benefits like death, disablement, and maturity compensation is high across the board.

Family benefits and leave travel allowance resonate more with specific age groups.

Provident fund, pension, and maternity benefits show varying levels of satisfaction across departments.

Discrepancies exist between genders regarding satisfaction with childcare facilities, meals, travel, awards, and the office environment.

Women seem slightly more satisfied with overall benefits compared to men.

These findings reveal opportunities to tailor benefit programs to specific demographics and address gender-based discrepancies to enhance employee motivation and well-being within the logistics industry.

Suggestion:

In today's evolving logistics industry, traditional incentives alone fall short of fully driving employee motivation and performance. To thrive in the 21st century, consider these suggestions:

Rethink Travel Allowances: Dissatisfied with existing travel support, employees may benefit from revised allowances that factor in distance, mode of transport, and cost of living.

Beyond Financial Rewards: Implement non-monetary motivators like awards, certificates, and recognition programs to boost performance, confidence, and engagement.

Prioritize Work Environment: Focus on creating a positive and flexible work environment, with optimized working hours, that meets employee needs and fosters well-being.

Bridge the Communication Gap: Prioritize open and transparent communication between management and employees. Regularly solicit feedback and address concerns to ensure everyone feels heard and valued.

By addressing these key areas, organizations can move beyond outdated benefit models and craft a strategic approach that truly resonates with their logistics workforce, unlocking their full potential and driving success in the 21st century.

V.CONCLUSION AND SCOPE FOR FURTHER STUDY

In the dynamic landscape of 21st-century logistics, employee motivation has emerged as a critical driver of performance. This study delved into the intricate relationship between benefit systems and employee motivation within this specific industry context. The findings provide valuable insights, highlighting the need for a nuanced approach to benefits that transcends mere financial incentives. Recognizing the diverse spectrum of motivating factors, from flexible work arrangements to personalized wellness programs, paves the way for designing benefit packages that truly resonate with employees in the logistics industry. By addressing intrinsic motivators alongside financial rewards, organizations can unlock the full potential of their workforce, fostering a culture of engagement and propelling performance to new heights.

This revised conclusion focuses on the specific context of the study and emphasizes the key takeaways:

- The importance of employee motivation in the logistics industry.
- The need for a multifaceted approach to benefits beyond purely financial incentives.
- The potential of benefits to address intrinsic motivators and enhance performance.

References

- Amabile, T. M. (2009). *Creativity in context*: The role of work environment, leadership, and personality. Springer. (Examines how benefits can foster creativity and engagement)
- Maslow, A. H. (1954). *Motivation and personality*. Harper & Row. (Provides a foundational framework for understanding intrinsic and extrinsic motivators, including benefits)
- Ostroff, C., & Hanges, P. J. (2000). *The psychological contract in organizations*: A reciprocal exchange process. Journal of Management, 26(6), 985-1027. (Explores the role of perceived fulfillment of benefit promises in employee motivation)
- Abraham, Z., & Appelbaum, S. H. (2001). *Understanding work in the low-wage service sector*. Harvard Business Review, 79(4), 96-109. (Analyzes the importance of benefits in attracting and retaining talent in lower-paid industries, including logistics)
- Blackley, P., & Cox, A. (2004). *Managing the logistics workforce*: An international study. Routledge. (Compares approaches to employee motivation and benefits across different logistics contexts)
- Johnsen, E., & Falkenberg, K. (2012). Logistics drivers' working conditions and safety: A research review. Transportation Research Part F: *Traffic Psychology and Behaviour*, 15(5), 509-522. (Addresses the impact of benefits on driver well-being and safety in the logistics industry)

- Cappelli, P. (2016). Willful disruption: *Why the future of work is flexible and why that is a good thing*. Wharton School Press. (Discusses the growing shift towards flexible benefits and personalized rewards)
- Deloitte. (2018). *Global Human Capital Trends 2018*. (Provides insights into emerging trends in employee benefits and their impact on motivation)
- Gratton, L., & Scott, D. (2016). The 100-Year Life: *Living and working in an age of longevity. Bloomsbury Publishing*. (Explores the need for benefits adapted to changing employee needs and career trajectories)
- Aguinis, H. (2012). *Performance management*. Pearson Education. (Provides a framework for analyzing the effectiveness of benefit programs in driving performance)

EXPLORING DIGITAL ACCOUNTING PRACTICES IN INDIA

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ABSTRACT

This study focuses on digital accounting practices in India and how it will be implemented. Now a days all things are done through online like payments, banking activities etc, then the accounting practices are also started done through online or digitally. Digital accounting replace the manual ways of processing financial transactions in almost all organisations. Digital accounting practices are very relevant in the processing of financial transaction. One of the benefits of digital accounting is the improvement in the quality of financial reports. However, this role has often been overlooked. Digital accounting helps to reduces costs, increases revenue and collaboration, improves employee productivity and customer experience at last gain competitive advantages. This says about the Digital accounting practices in India with the benefits of more efficient and competitive, innovative, adapting flexibility and abilities, efficient usage of technologies, through digital accounting the information are transparency and accountability, it will always have the records and it secures the financial information. It also minimises the error and 100% accuracy. Even though, it has some flaws in implementing the digital accounting that are data security, high cost, data backup and recovery, giving training to the employees, complexities and risk of obsolences. The study concluded that digital accounting practices affect the quality of financial reports of firms. The study recommends amongst others, the adaption of digital accounting in all aspects of the processing of financial statements.

Key words : Digital Accounting, Accounting Softwares, Modern Accounting

I.INTRODUCTION

Digital accounting refers to the formation, representation, and transmission of financial data in an electronic format. Technology advancements have enhanced the accountant's ability to interpret and report data faster, more efficiency and more effectively than ever before. Digital accounting surfaced in 2003 as a project of the federal government to modernize the Tax and Customs Administration (PMATA). Then came the Electronic Invoice (NF-e) and the Digital Book Keeping System (Sped) in 2009. In 2015, the digital book keeping system tax, Social security and labour obligations were introduced. And now, Tally ERP, ERP stands for Enterprise Resource Planning is the solution provides an integrated system for the entire company. Digital accounting refers to the creation, representation and transfer of financial information into an electronic format. Instead of using papers, all accounting transactions are conducted in an electronic environment. It involves the use of software solutions to digitalize and accountants deal with on a regular basis.

With all the technologies, today the world has become a global village and just transformed the traditional way into an electronic format which not only make things easier but also saves time and effort. Digital Accounting and its Benefits has made is easier for all in such pandemic situation where we can operate different activities being safe at home to performing official work.

II.DIGITAL ACCOUNTING PRACTICES

A variety of tasks are included in digital accounting, all of which lead to the accomplishment of the company's objectives. Typically, application packages are created from the different activities. Therefore, the application packages need to be integrated into the internal application and data architecture for the system to function properly. As a result, the application packages' internal program modification needs to start. Installing application packages is primarily done to ensure uniform quality throughout the company and to boost organizational performance. Thus, businesses should keep implementing application packages as they will increase operational efficiencies and customer satisfaction. This is because doing so will help them capitalize on industry best practices, improve security and system integrity, and increase productivity and quality across the board. An essential organizational tool for efficient decision-making and control inside an organization is the digital accounting information system. To stay effective, the accounting information system needs to have the best hardware and software, as well as highly skilled human resources and a high-quality database. As a result, digital accounting practices can be classified into three categories: Human Ware, digital networking applications, and digital accounting software.

SOFTWARE PAKAGES

A software package consists of several code modules or applications that cooperate to achieve different organizational goals and objectives. It may also be described as pre-made software that has been formatted and created in a standard manner to address a range of user-common issues (Ulrich, 2006). Additionally, he describes application packages as a group of software applications created with the intention of licensing them to other organizations. Users may write them themselves or purchase them as bundles from manufacturers. Their designs cater to a variety of organizational styles while supporting routine corporate operations. They carry out tasks unique to the firm. Accounting activities, human resource management (HRM), and other areas are only a few examples of the diverse applications. According to Abdulle, Zainol, and Ahmad (2019), computerized accounting software is designed to handle accounting information systems with the ultimate goal of facilitating simpler decision-making. Software designed especially to manage the processing of financial transactions is known as digital accounting software. This suggests that regular accounting activities will be automated. The main advantage of this system is that it speeds up transaction processing and increases productivity by doing away with human labour. This means that time saved for other goals will result from the reduction of manual operations. Three perspectives are available for assessing the significance of digital software. First, digital accounting software can produce invoices automatically and with less manual input. It can also offer the foundation for accounting process management. It might be useful for producing reports. Thirdly, it can help with payroll preparation. The development of technology has made it possible for accountants to analyse and present data more quickly, effectively, and efficiently than in the past. The accounting function can benefit from the application software in several ways. such the processing of transaction data in its raw form and the creation of several reports, such trial balances, budgets, ledgers, and statements of comprehensive income (profit or loss accounts) and statement of financial position (balance sheets). In addition, it generates several reports, including net pay, deductions, and tax payable, and conducts payrolls. All employee's details are kept up to date in the program. As a result, software is essential to accounting in any organization. Software application packages include Peachtree, Sage, and QuickBooks, as examples.

NETWORK APPLICATION PACKAGES

The package for digital networking is an additional element. This relates to creating social networks with digital technology. It is compatible with digital switching as well as digital voice, video, and other network service transmission. Its markets, data networks, and communication networks offer a way to match the network to the demands of businesses. Switches, routers, and access points are examples of networking equipment found in digital network cores. A program that runs on one host and communicates with another application that runs on a separate host is known as a network application package. Network apps establish connections with many users, enabling people in different places to use the system without any difficulties. In a computer context, a network package enables the sharing of data, reports, and other types of information.

HUMAN WARE PACKAGES

Researcher disregard of the human element in computer or digital accounting systems is common. Computers are, in fact, devices that can help with transaction processing and report generation at any time. However, nothing is possible without the human component. This is due to the fact that a computer cannot operate on them without human assistance. The application of the human factor in the administration and functioning of digital systems is thus represented by the human application ware. Digital systems are extremely complex and capital-intensive, and if not managed appropriately, they will yield the desired outcomes. Application packages for human ware can be thought of as the human components added to computer-assisted accounting transaction processing. It is the acknowledgment of the roles played by people in the administration and oversight of digital system operations. Human factors are just as crucial as computer technology in helping any organization reach the appropriate level of financial performance. Human resources can frequently be highly expensive, and if the right people are not hired, the desired outcomes will not occur.

III. DIGITAL ACCOUNTING STATUS IN INDIA

Dynamics of the Indian market for accounting software:

Accounting software helps SMEs to reduce errors in dealing with customers and companies, improve connections and reputation while freeing up time to focus on the main concept of the business. During the forecast period 2021-2027, the growing tendency of small and medium enterprises to collaborate with e-commerce providers and integrate other online applications, such as automated bank feeds and automated invoicing capabilities, is expected to boost the growth of accounting software usage in India.

Payables, receivables, payroll, general ledger, and other business modules can be easily managed with the software. A significant number of vendors have made accounting their base and are capitalizing on the cost savings offered by the cloud. They are also focusing on the niche of micro, small and medium" businesses. One of the prominent ways that these new accounting software providers are adopting is by incorporating advanced features such as artificial intelligence for applications such as planning, learning, problem solving and voice recognition.

The Indian accounting software market is expected to grow during the forecast period 2021-2027 due to increasing IT investments and awareness about the benefits of accounting software over paper-based accounting systems. Moreover, the increasing mobility of businesses and the idea of

bringing their own devices are two major factors driving the growth of the Indian accounting software market. In the current Indian accounting software market, there is a shift from the traditional method of storing financial data to the use of accounting software. The accounting software solution is used to digitally capture business data.

India Accounting Software Market Segment Analysis:

Based on the component,

The market is divided into software and services. The software segment is expected to hold the largest market share of xx% by 2027. Software solutions are generally used in organizations to increase productivity in the workplace and save time. Human errors can be reduced, and complex calculations can be performed with high precision thanks to the program. Accounting software, which is used to keep track of accounting activities or to manage a company's incoming and outgoing money, increases efficiency. It has become a better alternative for managing a company's finances as it can effortlessly manage payables, receivables, payroll, general ledgers, and other business modules. The development of the software is driving an ongoing trend in the accounting industry: automation.

Accounting has been largely automated without the need for humans to do much of the work. Thanks to the latest accounting software, companies have been able to reduce their human resources. This has led to more effective use of capital and better management of resources. These are the major factors driving the growth of this segment in the Indian accounting software market during the forecast period 2021-2027.

Based on the Enterprise Size,

The market is divided into large companies and small and medium-sized enterprises. The small and medium enterprises segment is expected to grow rapidly at a CAGR of xx% during the forecast period. Small and medium enterprises can significantly improve their business processes by using the latest accounting software. Accounting software saves time and effort that can be better utilized to focus on essential business tasks.

Small and medium businesses tend to use generic accounting software for their daily business activities. These are the major factors boosting the growth of this segment in the India accounting software market during the forecast period 2021-2027. The large enterprise segment is expected to grow rapidly at a CAGR of xx% during the forecast period. Large enterprises in India usually opt for ERP (Enterprise Resource Program) which can be customized to meet their specific business requirements.

India Accounting Software Market Regional Insights:

North India dominates the India accounting software market during the forecast period 2021-2027. North India is expected to hold the largest market share of xx% by 2027. This is due to the increasing use of accounting software in North India as it offers many benefits. The growth of the Indian accounting software market in North India is expected to be fueled by the rising IT spending and increasing knowledge about the benefits of accounting software.

Goods and Services Tax (GST) is the latest constitutional amendment to the Indian tax system. GST is calculated in slab rates, which requires complicated calculations. Major software developers in North India have launched accounting software with GST features that brings the accounting process in line with the current tax regime. These are the key factors that will drive the growth of the North India region in the Indian accounting software market during the forecast period 2021-2027.

IV. E-INVOICE SOFTWARE CHANGING INDIAN ACCOUNTING

E-invoicing is also known as electronic invoicing. It refers to the digital process of issuing invoices. It also refers to B2B companies submitting digital invoices to the GSTN portal. GSTN stands for Goods and Service Tax Network. This process generates an IRN (invoice reference number). Also, authentication needs a unique QR code.

- Improved Cash Flow
- Audit Trails
- Reduced Paperwork
- Compliance
- Integration with GSTN
- Simplified Reconciliation
- Data Analytics
- Standardization
- Reduced Tax Evasion
- Quick Access to Tax Credit
- Easier Loan Access
- Backup and Recovery

India Accounting Software Market Key Players

- Xero
- Giddh Accounting Software
- Reach Accountant
- Bookkeeper
- Zoho Books
- MProfit
- Quickbooks
- Wave Accounting
- Zoho Expense
- FreshBooks.

V.CONCLUSION

The study focused that digital transformation of accounting in India has changed the character, Digital accounting and finance makes possible new forms of overreaching accounting practice, providing a framework that brings coherence and integrates activities. Digital technology also

creates the possibility of a wide variety of learning practices, including exposition, independent research and construction. In this study, we say about the Digital Accounting Practices and how it works in the day to day operation in an organization. The study clearly pointed out that the development of technology is required for the development of digital accounting and finance across the country and helped to transform the country into knowledge of digitalization heaven.

In summary, the adoption of digital accounting practices revolutionizes traditional financial workflows, promoting efficiency, accuracy, and adaptability. The integration of automation, cloud-based solutions, and real-time data access not only streamlines operations but also positions businesses for sustained growth and compliance. As organizations navigate the digital landscape, embracing these practices becomes imperative for staying agile, reducing errors, and making informed financial decisions in an increasingly fast-paced business environment.

REFERENCES

- Abdulle, A. S., Zainol, Z., & Mutalib, H. A. (2019). Impact of computerised accounting information system on small and medium enterprises in Mogadishu, Somalia: the balance scorecard perspectives. *Int. J. Eng. Adv. Technol*, *8*(5), 159-165.
- Gelinas, U. J., Dull, R. B., & Wheeler, P. (2018). *Accounting information systems*. Cengage AU.

ANALYZING THE IMPACT OF BLOCKCHAIN TECHNOLOGY ON ACCOUNTING PRACTICES

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ABSTRACT

This paper explores the introduction and historical evolution of block chain technology, tracing its roots in addressing the double-spending issue in crypto currencies. Building upon this foundation, the paper extensively explores the application of block chain in accounting. From facilitating collateralized loans through smart contracts to revolutionizing real estate transactions and streamlining auditing processes, block chain emerges as a game-changer. The study illuminates its role in ensuring transparency, efficiency, and security across various financial domains. By providing a comprehensible overview of block chain's journey and its transformative impact on accounting practices, this study aims to equip readers with a clear understanding of block chain's pivotal role in reshaping accounting practices. Beyond the complexities of technology, the narrative bridges the gap between the evolution of block chain and its real-world impact on the field of accounting.

Key words : Blockchain Technology, Accounting Practices, Distributed Technology

I.INTRODUCTION

Block chain is a de-centralized, distributed ledger that focuses on the ownership and transfer of assets. It records transactional data in a way that is almost impossible to manipulate. Blocks of transactional data connect in chronological order. The chain of blocks gives the technology its name. The block chain database records the data of organizations and individuals across the world. Block chain is a shared, Immutable ledger that facilitates the process of recording transactions and tracking assets in a business network. An asset can be tangible (a house, car, cash, land) or intangible (Intellectual property, parents, copyrights) virtually anything of value can be tracked and traded on a block chain network, reducing risks and cutting costs for all involved.

Block chain is ideal for delivering that Information because it provides immediate, shared and completely transparent information stored Immutable ledger that can be accessedonly by permissioned network members. Block chain is a digital ledger created to capture transactions conducted among various parties in a network. It's peer to peer, internet based distributed ledger which includes all the transactions since its creation. All participants are using the Shared databases are nodes connected to the block chain. Every entry into a block chain is a transaction that represents an exchange.

In 1991, a cryptographically secured chain of blocks is described for the first time by Stuart Haber and W Scott Stornetta. After that in 1998, Computer scientist Nick Szabo works on 'bit gold', a decentralised digital currency. Exactly after a decade, in 2008, developer(s) working under the pseudonym Satoshi Nakamoto release a white paper establishing the model for a block chain. In 2014, Block chain technology is separated from the currency and its potential for other financial, inter organizational transactions is explored. Block chain 2.0 is born, referring to applications beyond currency. The Ethereum block chain system introduces computer programs into the blocks, representing financial instruments such as bonds. These become known as smart contracts.

II. REVIEW OF LITERATURE

Wang H and Chen X (2023), entitled a journal on **"Journal of emerging technologies in accounting",** utilized a Delphi study to gather expert opinions and forecast future trends of blockchain in accounting, focusing on potential advancements, challenges and evolving industry standards. **Brown A and Williams B (2020),** entitled a journal on **"Accounting research journal",** explores the specific applications of blockchain in financial reporting, examining how the technology enhances data integrity, reduces fraud and streamlines the auditing process. **Narayanan A and Goldfeder S (2016)**, entitled a journal on **"Bitcoin and cryptocurrencies technology"**, investigates the historical roots of blockchain, tracing its origin to the conceptualizing of bitcoin by the pseudonymous figure Satoshi Nakamoto and the publication of the bitcoin white paper. **Swan M (2015),** entitled a journal on **"Blockchain : Blueprint for a economy"**, defines blockchain as a distributed ledger technology, exploring its fundamental characteristics and discussing its implications for economic systems. **Nakamoto S (2008),** entitled a journal on **"Bitcoin : A Peer-to-Peer electronic cash system",** introduced the concept of blockchain as the underlying technology for bitcoin, emphasizing decentralized and secure transaction verification.

III.BLOCKCHAIN APPLICATION IN ACCOUNTING

Digital Ledger
In accounting, a digital ledger using block chain technology acts like a highly secure and tamper-proof electronic record-keeping system for financial transactions. It ensures that the information is reliable and cannot be altered illicitly.

Smart Contracts

From an accounting perspective, smart contracts on the block chain automate the execution of contracts and facilitate payments when specific predefined conditions are met. This feature reduces the reliance on intermediaries, making transactions more efficient and cost- effective.

Auditing

Block chain can revolutionize auditing by allowing auditors real-time access to an immutable and transparent ledger. This means that the audit process becomes more efficient and accurate as auditors can directly verify transactions on a secure and unchangeable platform.

Supply Chain Tracking

In the realm of accounting, block chain aids in tracking the supply chain. This involves verifying the authenticity of products and tracing their entire journey through the supply chain. This transparency ensures that financial reporting accurately reflects the true state of the supply chain.

Cross-Border Transactions

From an accounting standpoint, block chain streamlines international transactions by removing intermediaries. This not only reduces costs but also accelerates transaction times, making cross-border financial dealings more seamless and transparent.

Tax Compliance

Block chain's application in tax compliance automates the calculation and reporting of taxes. This minimizes errors, ensures accuracy, and promotes compliance with tax regulations, making the accounting of taxes more efficient and reliable.

Financial Reporting

Using block chain for financial reporting enhances accuracy and transparency. It provides a secure and verifiable foundation for financial statements, assuring stakeholders that the reported financial data is trustworthy and has not been manipulated.

Lending

Lenders can use block chain to execute collateralized loans through smart contracts. These contracts, built on the block chain, enable automatic triggering of events such as a loan payment, a margin call, full repayment of the loan, and the release of collateral.

Insurance

Using smart contracts on a block chain provides greater transparency for customers and insurance providers. These contracts, implemented on a block chain, automate and streamline various insurance processes. They enhance transparency by providing a secure and transparent record of policies, claims, and transactions. This transparency benefits both customers and insurance providers, reducing the risk of fraud and improving the efficiency of claims processing.

Real Estate

Block chain simplifies real estate accounting by streamlining and securing transactions. In traditional real estate processes, verifying financial information, ownership, and transferring deeds involves extensive paperwork. With block chain, these transactions are recorded in a transparent and tamper-resistant ledger, reducing the need for manual paperwork and ensuring accurate and immutable records. This not only speeds up the accounting process but also enhances the overall efficiency and trustworthiness of real estate transactions.

Triple-Entry Accounting:

The block chain concept would popularize the triple-entry accounting system. The idea of block chain was initially conceived to support Bitcoin (CRYPTO: BTC). To address the double-spending

problem associated with digital currencies, Satoshi Nakamoto devised an immutable ledger of transactions that chains together blocks of data using digital cryptography. While this idea works exceptionally well for Bitcoin and other cryptocurrencies, there are plenty of other useful applications for block chain technology.

Money Transfers

The original concept behind the invention of block chain technology still serves as a great application. Money transfers using block chain are less expensive and faster than utilizing existing money transfer services.

Financial Exchanges

Many companies have emerged in recent years, offering decentralized information on a public ledger, which is more secure than traditional accounting systems. Furthermore, block chain's resistance to hacking adds an extra layer of security, making it an appealing solution for financial exchanges seeking to improve trust and efficiency in their operations.

IV.EFFECT OF BLOCKCHAIN TECHNOLOGY IN ACCOUNTING

In future, block chain and smart contracts will transform certain parts of accounting, focusing on transactional assurance and property rights transfer. This shift will reduce the need for reconciliation and dispute management, allowing accountants to concentrate more on understanding and accounting for transactions. Many traditional accounting processes can be optimized through block chain, data analytics, and machine learning, making the accounting function more efficient.

As a result, the skills required in accounting will evolve. Tasks like reconciliations may decrease, but there will be an expansion in technology, advisory, and value-adding activities. Auditors, when dealing with companies heavily involved in block chain transactions, will shift their focus. While external confirmation of block chain transactions becomes less necessary, attention will be directed towards how these transactions are recorded in financial statements and decisions involving judgmental elements like valuations.

Accountants won't need to be block chain engineers, but they will need to advise on block chain adoption, understand its impact on businesses, and facilitate informed conversations between technologists and business stakeholders. The skill set of accountants will broaden to include a basic understanding of block chain's key features and functions, recognizing its growing importance in the accounting profession.

Enhanced Transparency and Trust

Block chain technology provides an immutable and decentralized ledger system, allowing for transparent and secure transactions. In accounting, this means that every financial transaction can be recorded on the block chain, creating a transparent and auditable trail of data. With all stakeholders having access to the same information in real-time, the trust between parties can be significantly improved, reducing the need for intermediaries and increasing the accuracy of financial reporting.

Streamlined Auditing and Compliance

Auditing is a critical aspect of accounting, ensuring the accuracy and integrity of financial records. Traditional auditing processes can be time-consuming and resource-intensive. However, with block chain, auditing becomes more efficient and cost-effective. The distributed nature of block chain allows auditors to access a tamper-proof record of transactions, eliminating the need for manual verification. This streamlined auditing process can enhance compliance with regulatory requirements and improve the overall efficiency of the accounting profession.

Smart Contracts Automating Accounting Functions:

Block chain technology enables the use of smart contracts, self-executing contracts with predefined rules encoded on the block chain. Smart contracts can automate various accounting functions, such as invoice processing, payment settlements, and financial reconciliations. By eliminating the need for manual intervention, smart contracts reduce human error and enhance operational efficiency. Accountants can focus on higher-value tasks, such as financial analysis and strategic decision-making, while routine accounting processes are automated through smart contracts.

Secure Data Storage and Protection

Data security is a paramount concern for accounting professionals. Block chain's decentralized and cryptographic nature provides enhanced data security. As each transaction is encrypted and linked to previous transactions in a chain, altering or tampering with the data becomes extremely difficult. This immutability of the block chain helps prevent fraud and unauthorized modifications, ensuring the integrity and confidentiality of financial information.

Cost Reduction and Increased Efficiency

Traditional accounting processes often involve multiple intermediaries and manual data entry, resulting in increased costs and potential errors. Block chain technology can streamline these processes by automating record-keeping, reducing the need for intermediaries, and enhancing the efficiency of transactions. This cost reduction and increased efficiency can benefit businesses of all sizes, from small startups to large enterprises, allowing them to allocate resources to more value-added activities.

While block chain holds immense potential, there are challenges to overcome. One significant concern is the **scalability of block chain networks**, as they currently struggle with high transaction volumes and processing speed. Additionally, integrating block chain technology with existing accounting systems and regulations requires careful consideration to ensure **compatibility and compliance**. Moreover, there are **legal and regulatory hurdles** that need to be addressed, as the technology is still evolving.

V.CONCLUSION

In summary, block chain technology is poised to revolutionize accounting, offering benefits like enhanced transparency, streamlined auditing, and secure data storage. Despite challenges, the potential for increased efficiency, reduced fraud, and improved trust is significant. As block chain evolves, financial professionals must embrace its transformative power to stay ahead in the ever-

changing landscape. The thorough exploration of block chain applications in accounting unveils a transformative landscape across diverse domains. From improving financial exchanges and real estate transactions to efficient audit and tax compliance processes, block chain proves to be a versatile tool reshaping the accounting landscape. The integration of block chain technology promises heightened security, transparency, andefficiency in managing financial data. Its profound impact on lending, supply chain management,and regulatory compliance suggests a promising future. Despite persistent challenges, the overarching trend indicates that block chain has the potential to redefine how accounting information is approached, verified, and managed across various sectors. This technology is not merely a buzzword; it serves as a catalyst for positive change in the conduct of financial transactions and the assurance of accounting practices integrity.

REFERENCES

- Libra Association (2019). Libra white paper. Retrieved July 12, 2019, from https://libra.org/en-US/white-paper/
- Iansiti M, Lakhani K (2017) The truth about block chain. Harvard Business Review. January–February Issue. Retrieved April 12, 2019, from https://hbr.org/2017/01/the-truth-about-blockchain
- Rijmenam (2018) Why block chain is quickly becoming the gold standard for supply chain. November 21. Retrieved April 18, 2019, from https://vanrijmenam.nl/blockchain-becoming-gold-standard-supply-chains/?utm_source=datafloq&utm_medium=ref&utm_campaign=datafloq
- Velasco-Castillo E (2016) Nine block chain opportunities that telecoms operators should explore. Knowledge Center, June, 13. Retrieved April 12, 2019, from http://www.analysysmason.com/Research/Content/Comments/nine-blockchain-opportunities-Jun2016-RDMY0/

INVESTIGATING STUDENT-MANAGED INVESTMENT FUNDS: AN ANALYTICAL STUDY

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Abstract
Student-managed investment funds represent an innovative approach to financial education that goes beyond textbooks and lectures. These funds empower students to become more confident, informed, and capable finance professionals by providing them with the opportunity to manage real money in a controlled educational environment. As the finance industry continues to evolve, the skills and experiences gained from SMIFs will play a crucial role in shaping the next generation of investment managers, analysts, and leaders.
Keywords : Student-Managed Investment Funds, Investment Management, Asset Allocation

I.INTRODUCTION

Student-managed investment funds (SMIFs) have gained significant popularity in recent years as an innovative approach to bridging the gap between theoretical finance education and real-world investment practices. These funds provide students with a unique opportunity to gain hands-on experience in managing real money while fostering financial literacy, analytical skills, and a deeper understanding of the intricacies of the financial markets. This article delves into the concept of student-managed investment funds, their benefits, challenges, and the impact they have on shaping the future generation of finance professionals.

History

In 1946, returning World War II veterans contributed $3,000 to Lafayette College in Easton, Pennsylvania to launch an investing club on campus. The money could be used by students' club members to choose which stocks to buy or sell, as well as for other investing decisions. A faculty advisor might offer assistance with research or other needs, but ultimately it would be up to the students to decide how to invest the money they were given.The initial $3,000 investment is now worth over $1 million, according to the website of the Lafayette College Investment Club. A percentage of the club's investment earnings are used to pay for educational opportunities for present and prospective Layette College students.

Over the past few decades, Lafayette College has been replicated by other colleges. Other universities have imitated Lafayette College during the previous few decades. At American colleges and universities, there are about 600 student- run investment funds, according to the Intentional Endowment Network (IEN) and the SIILK Network. Most were established in the early to mid-2000s.

What are Student-Managed Investment Funds (SMIFs)?

As the name implies, SMIFs are pools of funds that college students can use to research and invest in stocks, bonds, or other financial assets. Students decide whether assets to buy or sell, either alone or with the help of faculty advisors or investing firm volunteers. Although some institutions have contributed the cash through carve-outs from their endowments or other assets, the funds are mostly provided by contributors. SMIFs are technically and legally held by the sponsoring universities, despite the fact that students are participating in the investment decisions. Therefore, any profits made by SMIFs must be spent for the benefit of the sponsoring university rather than the specific student investors.

The Statistics

The statistics in the tables below were calculated using only the values that are known.

Year Formed

STATISTIC	VALUE
Total SMIFs	618
Reported Values	475
% of Total	76.86
First Formed	1946
Last Formed	2023
Average	2002
Median	2003
Mode	2000
Mode Count	31

Amount under Management

STATISTIC	VALUE
Total SMIFs	618
Reported Values	496
% of Total	80.26
Total	$833,268,000
Minimum	$2,000
Maximum	$67,800,000
Average	$1,680,000
Median	$400,000
Mode	$100,000
Mode Count	30

Many modern-day student-managed investment funds have a few other distinguishing characteristics:

They are housed in and supported by a campus academic department, such as the school of business. They allow student participants to receive academic credit, mentoring from industry experts, or other educational benefits for participating. They give students real-world experience in researching stocks and other activities related to investment management. SMIFs tend to be relatively small. Many hold between 10-30 securities and have a total value ranging from a few thousand dollars to several million. Regardless of the size of a SMIF, institutions can benefit from these student funds. The primary benefit is the educational and career opportunities they provide to students. For instance, students involved with the University of South Florida's (USF) Student-Managed Investment Fund learn modeling and other strategies needed to become investment research and stock analysts. The USF fund, established through a gift in 2010 and housed at the Muma College of Business, had a value of over $1.5 million as of early 2022.

"The skills and contacts these student participants develop open a lot of career doors," says Ken Souza, senior director of investments at the University of South Florida Foundation. "The students in the program over the last 12 years have achieved outstanding professional success. Many are now working as equity analysts or have reached management positions at firms such as Goldman Sachs, Raymond James Financial, and others."

USF has had a similar experience with its student-managed fund, according to Souza. "There are students from nearly every continent who have enrolled in the program and managed the assets in the SMIF," Souza says.

Some schools may have adopted SMIFs as a response to students' calls to gain more experience in investing in socially responsible investment strategies. Data from IEN show that at least 10 percent of student-run endowments have one or more sustainable investing mandates, including environmental, social, and governance (ESG) integration; impact investing; negative and positive screening; and shareholder engagement.

Asset Class for SMIFs

- Stocks: value, dividend, growth, or sector-specific (or a "blend" of any two or more of the preceding); large-cap versus mid-cap, small-cap or micro- cap; domestic, foreign (developed, emerging or frontier markets).
- Bonds (fixed income securities more generally): investment-grade or junk (high-yield); government or corporate; short-term, intermediate, long-term; domestic, foreign, emerging markets
- Cash and cash equivalents: deposit account, money market fund)
- Derivatives: options, collateralized debt, and futures
- Commodities: precious metals, nonferrous metals, agriculture, energy, others.

The Size of the Funds

The range of the size of the funds and the number of colleges that hold them.

The column "< $250,000" for example includes SMIFs that hold between $100,000 (the column to the left) and $249,999.
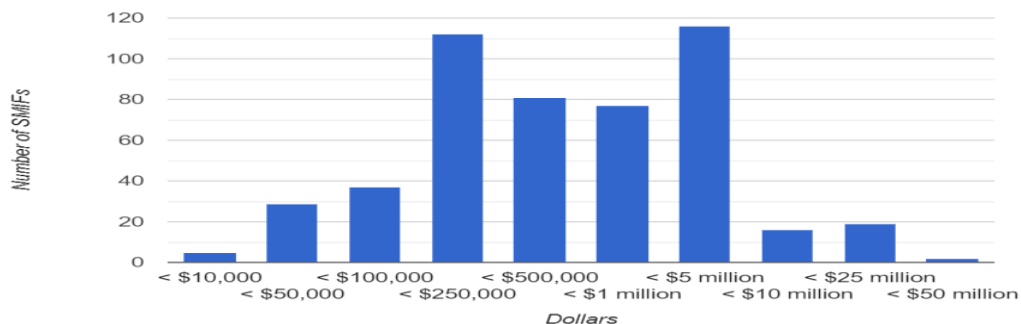
NB: The x-axis scale is not linear.

II. UNDERSTANDING STUDENT-MANAGED INVESTMENT FUNDS

Student-managed investment funds are educational initiatives offered by universities and colleges that allow students to manage an actual portfolio of assets, such as stocks, bonds, and other financial instruments, with real money. These funds operate similarly to professional investment funds, but they are managed by students under the guidance and supervision of experienced faculty members or financial advisors.

How are they different from Institutional Investors

The primary goal is to provide students with practical, real-world exposure to investment management. The main objective of SMIFs is to develop a practical learning environment for the up-and-coming portfolio managers. SMIF returns are secondary in nature to the instructional goal, in contrast to professionally managed funds, which are entirely focused on delivering the highest risk- adjusted rates of return feasible. In general, academic advisers are aware that failures, rather than outright achievements, can lead to some of the best learning experiences. Any seasoned investor is aware that every choice is always influenced by luck and insufficient information.

Consequently, a highly scrutinized opportunity with significant potential can fail for a virtually infinite variety of reasons that couldn't have been precisely predicted a year or more in advance. Students do not, however, have access to a robust incentive structure that includes monetary prizes for exceeding benchmarks or consequences for subpar performance (such as termination).Constraints that most professionals do not have are frequently present in student portfolios. For instance, the structure of most SMIFs favors group or committee choices over those of a single portfolio manager. More than 30 students, with varying levels of talent and expertise, are occasionally involved. Everyone has an equal voice in the final judgment. Decisions are not always made only on the basis of objective analysis; it depends on the caliber of the student study and group presentation abilities. Additionally, the majority of funds provide a one- or two-semester course, which can encourage students to utilize short-term planning horizons as they might not be there to see how an investment turns out in the end.

It goes without saying that it takes numerous economic cycles to truly assess the effectiveness of any investment strategy. One of the exceptions is the fund at the University of Missouri-St. Louis, which has a credit system set up so that students can take part for a number of years. Professional managers don't need to gather the group for a vote in order to respond practically instantly to quickly.

Altering market conditions. If practitioners are not trading based on erroneous rumors and there are actually significant market movements occurring, this component should be enough to improve practitioner performance. Professionals can also trade on margin or employ derivatives to increase returns, although these strategies are not typically available to most SMIFs. Professionally managed funds must cover all running costs on their own, negating some of these benefits. In contrast, most SMIFs receive resources (such as facilities, computers, faculty salaries) at reduced costs from the universities, rarely covering all fund-related costs.

Growth of the SMIFs

The number of SMIFs that have been created per decade from 1950 to the current one.
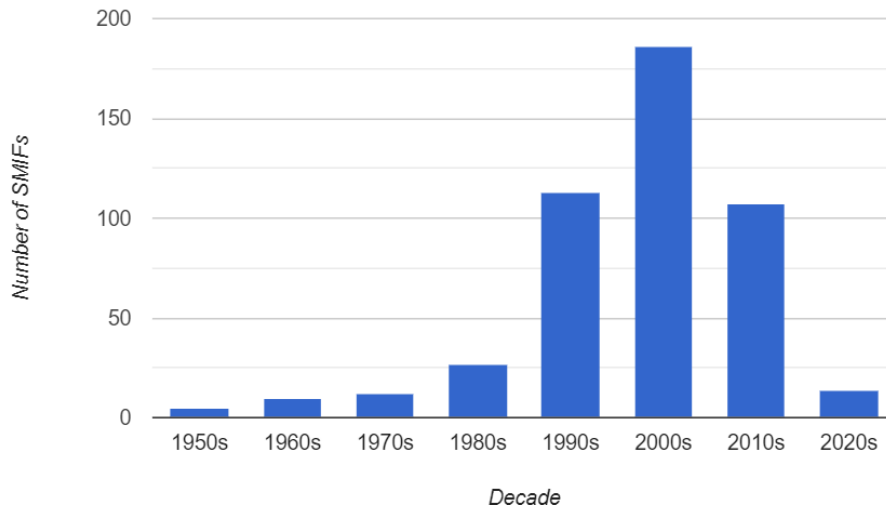
Portfolio of the University Of Missouri – St. Louis Fund

Panel A. Fund Characteristics	
Date Established	1988
Size in June 2007	$125,000
Annual Student Participation	45
Fund structure	Part of endowment
Funding source	Small private donations
Faculty Member	Full-time regular
Credit hours per semester	1 credit hour per semester
Max credit hours	3 hours (may continue without credit)
Student level	Undergraduate
Application	None
Decision process	Majority vote of students
Investment style	Growth and value
Investment types allowed	Equities, fixed income and options
Equity strategy	Bottom-up approach
Diversification required?	Yes
Income Distributions	Scholarships

Panel B. Actual 5 Year Historical Annual Returns (Including Dividends)		
Year	**Actual fund performance**	**S&P 500**
2003	36.78%	28.68%
2004	17.67%	10.88%
2005	5.76%	4.91%
2006	6.93%	15.80%
2007	12.25%	5.49%

III. FUNDING SOURCES AND ORGANIZATIONAL STRUCTURE

The majority of older SMIFs received ear-marked money from alumni and other private donors to establish the funds. Twenty-eight percent of the funds got all of the money from the university's own endowment. Another 23% of schools had only a single large donor. The balance of programs was a combination of capital sources, including many small donors and corporate donations. For universities wishing to establish a new fund, the average program in the US during the 2000s was started with approximately $414,000 in initial capital. The most common form of organizational structure is having the SMIF be part of the university endowment. About 62% of all funds are structured this way. Another 14% are set up as a separate entity, like a nonprofit foundation or trust to provide more autonomy from the university. It is also becoming more popular for programs to establish profit making companies (e.g. LLCs or partnerships) where students are managing the portfolio for private companies or other investors. At least ten of the largest funds, including the University of Wisconsin, University of Minnesota, Pennsylvania State University, University of Houston, and University of Texas are all managing some private investor money. It should be noted that this is a more complex structure in the US, which requires government reporting (e.g. partnership tax returns with K-1 forms) due to the taxable nature of the investments. Several innovative companies in the US have long provide money to support financial education at institutions in the markets they serve. The largest is the Tennessee Valley Authority (TVA), a large electric utility company, which sponsors 25 universities in its service area. Two brokerage firms followed the TVA's lead with D. A. Davidson & Company sponsoring 20 schools and Stern Agee Group, Inc. supporting 5 universities. The basic model at these programs is for the company to provide all funding ($400,000 each for the TVA) with the company and universities sharing the profits. In case of a falling stock market, the company absorbs all losses and fully replenishes the money the following year. About 58% of universities have an advisory board associated with their programs. All of these boards have outside investment professionals and alumni serving as a valuable resource in a counseling capacity. This allows students to interact with professionals and showcases the program to the local community. In many cases, students make formal presentations to the boards to sharpen their presentation and analytical skills.

Benefits of SMIFs

Practical Experience: Students have a priceless opportunity to apply the concepts learned in the classroom to actual investing decisions by using SMIFs. Their analytical talents, decision-making capabilities, and risk management techniques are improved through this practical experience.

Financial Literacy: Students' comprehension of financial markets, asset classes, and investment techniques is improved by working with actual money. This experience helps people become more financially literate and have a better understanding of economic principles..

Networking: SMIFs frequently entail interactions with financial sector professionals, including as graduates, guest lecturers, and prospective employers. This networking exposure may result in chances for mentorship, employment, and internships.

Critical Thinking: Students who manage portfolios must research market trends, economic data, and business financials. This encourages analytical thinking, problem-solving skills, and the capacity to choose wisely in challenging financial situations.

Risk Management: In order to maximize profits while reducing potential losses, students learn how to manage risk and diversify their portfolios. For effective investment management, it is essential to have a realistic grasp of risk.

Teamwork and Communication: SMIFs are typically administered by student teams, which encourages teamwork, communication, and the capacity for productive group work—skills that are crucial in the Finance sector.

Challenges and Learning Opportunities

Real Consequences: Since SMIFs use actual money in contrast to simulations, students are exposed to the true costs of their choices. Although taking this risk can be intimidating, doing so provides an excellent opportunity to learn about accountability and responsibility.

Market Volatility: The turbulence and unpredictable nature of the financial markets are directly experienced by students. They are more equipped to negotiate choppy market situations and modify their strategy as a result of this exposure.

Research and Analysis: A portfolio manager must conduct extensive study and analysis. Assessing businesses, sectors, and macroeconomic trends is a talent that students must develop that goes beyond the classroom.

Impact on Future Finance Professionals

The experience gained through student-managed investment funds can significantly impact the career trajectories of future finance professionals. Graduates who have participated in SMIFs often stand out to potential employers due to their practical experience, analytical prowess, and ability to apply theoretical knowledge in real-world scenarios. The skills acquired through SMIFs not only make graduates more competitive in the job market but also better equipped to handle the challenges of the finance industry.

University	State	Assets	Year Formed
University of Dayton	OH	67,800,000	1999
University of Minnesota	MN	50,000,000	1997
Ohio State University	OH	25,810,000	1990
University of Wisconsin Madiso	WI	25,000,000	1970
Northwestern University	IL	19,500,000	1964
University of Iowa (MBA)	IA	19,000,000	1994
University of Texas at Austin	TX	17,100,000	1994
University of Virginia – Darden	VA	16,300,000	1990
Baylor University	TX	15,100,000	2001
University of Notre Dame	IN	13,750,000	1998
University of North Carolina, Cl	NC	13,000,000	1952
Pennsylvania State University	PA	12,500,000	2005
University of Texas at Dallas	TX	12,500,000	
University of Southern Californ	CA	12,200,000	1986
University of Iowa	IA	11,470,000	1994
University of Arkansas, Fayette	AR	11,300,000	1971
College of Wooster	OH	11,000,000	1955
Trinity University	TX	11,000,000	1998
Ohio University	OH	10,400,000	2001
Washington and Lee University	VA	10,250,000	1998
University of Michigan – Ann Ar	MI	10,000,000	2000
University of St. Thomas, Minn	MN	10,000,000	1999
Virginia Polytechnic Institute ar	VA	10,000,000	1991

SMIFs in India

Masters' Union School of Business announced the launch of The Masters' Union Investment Fund, India's largest student-managed investment fund (SMIF). The investment fund has a corpus of Rs 5 crore and will invest in real estate, capital markets, derivatives, stressed assets and startups. This idea behind a student- managed fund is to instill portfolio management skills in students as a part of the program and offer them real time exposure to different asset classes. The student fund-managers will be mentored by veterans from the industry who are teaching at Masters' Union. Some Finance Masters include Satish Krishnan (Former MD, Financial Markets, Standard Chartered Bank), Siddhartha Rastogi (MD, Ambit Capital, Asset Management), Ajay Jamuar (Head, Finance, Deutsche Bank), Rahul Parikh (Former Chief Executive Officer at Bajaj Capital Ltd).

IV.CONCLUSION

Student-managed investment funds represent an innovative approach to financial education that goes beyond textbooks and lectures. These funds empower students to become more confident, informed, and capable finance professionals by providing them with the opportunity to manage real money in a controlled educational environment. As the finance industry continues to evolve, the skills and experiences gained from SMIFs will play a crucial role in shaping the next generation of investment managers, analysts, and leaders.

AI-DRIVEN FARM MANAGEMENT SYSTEM (AI-FMS)

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ABSTRACT

The AI-driven farm management system (AI-FMS) is a game-changing technology that improves productivity, sustainability, and environmental stewardship in agriculture by merging predictive analytics, geo-integrated monitoring, and smart resource allocation. With the help of this cutting-edge technology, farmers can maximize resource consumption, increase yields, and reduce their negative effects on the environment. Using advanced analytics, AI-FMS can accurately anticipate weather patterns, insect infestations, and crop yields. AI-FMS can fully comprehend the farm's microclimates and soil conditions thanks to real-time data from a network of strategically placed sensors. Soil moisture, temperature, nutrient levels, and other vital data are constantly monitored by AI-FMS, allowing farmers to pinpoint problem areas, such as those with water stress or nutritional deficits, that need rapid care. Water, fertilizer, and pesticide distribution may all be improved with the use of AI-FMS's extensive data library, which includes historical data, data from real-time sensors, and predictive insights. By strategically allocating available means, this method provides maximum crop output with little waste and lower environmental impact. Artificial intelligence farm management systems pave the way for a more sustainable and productive agricultural future by offering data-driven insights, facilitating educated decision making, and maximizing resource use. In conclusion, AI-FMS is a giant step forward in agricultural technology, heralding a new age of data-driven farming marked by improved efficiency, longevity, and ecological consciousness. AI-FMS has the potential to transform the agricultural business by equipping farmers with the knowledge and resources they need to produce food in a way that is both safe and sustainable for the long term.

Keywords: GIS field mapping, data analytics, input tracking, AI-powered pest management, smart irrigation, real-time weather updates, and optimum farming.

I. INTRODUCTION

With its extensive feature set and revolutionary design, Farm_era is a cutting-edge solution that has the potential to completely transform the agricultural industry. Farm_era is poised to optimize agricultural operations and deliver higher yields with a strong focus on GIS field mapping, precision crop planning, input tracking, AI-powered pest management, real-time weather updates, smart irrigation, and potent data analytics.

Farmers may use geographic information systems to create detailed maps and 3D models of their farms [1]. Farmers may use this feature to effectively allocate resources and pinpoint trouble regions, as well as to plan for ideal crop rotations. Precision crop planning is another area where Farm_era shines. By taking into account elements including soil type, climate, and previous harvests, farmers may optimize their land use and crop yields via strategic crop rotations [2]. This guarantees that crops are planted in optimal places and times, maximizing harvests while decreasing wastage.

 By using precision farming , you may be certain that your crops will be planted in optimal locations and at optimal times, maximizing your harvest and minimizing your waste. Farm_era simplifies the process

of input tracking, which is essential in contemporary farming, by providing a central hub for the administration and monitoring of agricultural chemicals [3]. Farmers may reduce their negative effects on the environment, avoid wasting resources, and keep inputs at optimal levels if they keep meticulous records on how they are used.

Farm_era uses state-of-the-art technology to solve a significant problem for farmers: AI-powered pest control [4]. Multiple data sources, including sensor data, satellite imaging, and historical pest patterns, are analyzed by the system so that prospective pest outbreaks may be identified and predicted. This paves the way for preventative measures like pesticide spraying or the introduction of biological therapies, allowing farmers to minimize harm to crops and maximize harvests.

Modern farming relies heavily on input tracking, which Farm_era streamlines by offering a unified platform for managing and tracking the use of pesticides, fertilizers, and other inputs. Farmers may limit their influence on the environment, prevent excess or underuse of inputs, and maintain ideal levels by carefully documenting their usage.

The system is capable of identifying and forecasting possible pest outbreaks through the analysis of multiple data sources, such as sensor data, satellite imaging, and past pest trends. This enables farmers to reduce crop damage and boost output by implementing preventative measures like targeted pesticide spraying or the introduction of biological treatments.

Apart from managing pests, Farm_era offers farmers reliable and current meteorological information, empowering them to make well-informed decisions. With the use of this tool, farmers can minimize risks and maximize production potential by scheduling tasks like irrigation, harvesting, and fertilizer application in accordance with particular weather conditions.

Another essential component of Farm_era is smart irrigation, which makes sure crops get the proper amount of water at the right time. The technology optimizes water use efficiency, conserves water, and automatically modifies irrigation schedules by combining weather data, soil moisture sensors, and crop-specific requirements.

Lastly, Farm_era provides strong data analytics tools that let farmers learn important lessons from their farming practices. Farmers are better able to recognize trends, optimize practices, and make well-informed decisions for increased productivity and profitability by studying data on crop performance, input usage, weather patterns, and other topics.

In today's quickly changing agricultural landscape, Farm_era's sophisticated GIS field mapping, precise crop planning, input tracking, AI-powered pest management, real-time weather updates, smart irrigation, and potent data analytics enable farmers to optimize their farming practices, boost yields, and achieve sustainable and profitable results.

II. RELATED WORKS

[1] In this article, we'll look at how smart farming makes use of geospatial and big data technology. The potential of these technologies to boost agricultural output, longevity, and efficiency is highlighted by the authors. According to the results, using geospatial and big data technology may increase precision by as much as 20%. The widespread use of big data and GIS technology has aided the development of smart

farming. The agricultural sector is increasingly adopting these technologies in an effort to boost productivity, streamline operations, and better manage crops.

[2] This research study looks at how AI and IoT may work together to improve crop management. The author explains how modern precision agriculture will aid farmers in making better choices and maximizing their use of available resources. The research showed that accuracy might increase by as much as 30% when AI was combined with IoT. Next-generation precision farming incorporates artificial intelligence (AI) and the Internet of Things (IoT) into crop management systems. This synergy between monitoring, data analysis, and decision making in real time has the potential to greatly increase agricultural output.

[3] The possibilities and developments in precision agriculture are discussed in this study. In order to maintain productive and environmentally friendly agricultural methods, the authors stress the need of data-driven decision making. Data-driven decision making, may boost precision by as much as 40 percent. Smart farming is impossible without the ongoing research and development of precision agriculture. Drones, sensors, and data analytics are just a few examples of the cutting-edge agricultural technology that has led to higher crop yields.

In this work, we look at three strong tools for precision agriculture: remote sensing, unmanned aerial vehicles (UAVs/drones), and machine learning. The authors illustrate the potential of such technologies to increase harvests while decreasing their negative effects on the environment. According to the results, remote sensing, UAVs/drones, and machine learning may increase precision by as much as 50 percent. Drones and other unmanned aerial vehicles, machine learning, and remote sensing are all powerful technologies with real-world uses in farming. These instruments allow for precision agriculture [4] by providing accurate and timely data on crop health, soil conditions, and other critical aspects.

In order to improve agricultural sustainability and efficiency, this article explores cloud-based IoT technologies. The authors explore how cloud computing may help with "smart farming." The research shows that the accuracy may be increased by 60% when using cloud-based IoT solutions. Cloud-based Internet of Things (IoT) technologies aid in making farming more productive and environmentally friendly. Connecting equipment and systems allows farmers to remotely monitor and control tasks like data analysis, pest management, and irrigation [5].

This report examines the development of India's digital agricultural infrastructure in depth. The writers stress the role that digital technology play in revolutionizing the Indian agriculture industry. The research indicated that digital technology may enhance accuracy by up to 70%.In the previous several years, India's digital agricultural infrastructure has seen significant advancements. This in-depth research project shows how digital technologies are being integrated into various agricultural practices to boost yields, reduce expenses, and better farmers' bottom lines. (6).

This chapter in a book presents a survey of intelligent farm machinery. The potential of smart agriculture to boost agricultural output and sustainability is explored by the writers. Smart agriculture technologies, according to the report, may boost precision by up to 80%. Precision agriculture and other types of intelligent agricultural technology may be very useful to farmers. Increased agricultural output may be achieved via the use of automation, optimization of resources, and data-driven decision making [7].

[8] Artificial intelligence (AI) and the Internet of Things (IoT) in modern farming, Improved crop yields, lower post-harvest losses, and more efficient use of available resources are only some of the outcomes of the technologies the authors highlight. According to the research, IoT solutions powered by artificial intelligence (AI) may increase precision by as much as 90%. Innovative tools and Internet of Things application powered by artificial intelligence improve farm management and efficiency in today's high-tech farming. These technologies facilitate the collection, analysis, and use of data in real time, leading to more efficient resource management and increased agricultural yields [8].

[9]Smart farming operations may benefit from machine learning-enabled Internet of Things (IoT) technologies. The accuracy of IoT solutions that make use of machine learning may be increased by as much as 100%. Internet of Things technology fueled by machine learning is transforming smart farm operations. By integrating ML algorithms with IoT sensors, farmers can analyze massive volumes of information, identify patterns, and make data-driven choices to improve the efficiency and effectiveness of their farming methods and their crops' output.

Precision agriculture boosts yields, streamline operations, and protect the environment. Precision agriculture was shown to increase precision by up to 200%, according to the research. Precision agriculture uses newly developed tools and techniques to maximize yield and decrease waste. Using data analytics, automation, and remote sensing, farmers may increase crop yields while reducing their negative effects on the environment [10].

Reference	Accuracy
Obi Reddy et al. (2023)	Up to 20%
Rhoads (2023)	Up to 30%
Karunathilake et al. (2023)	Up to 40%
Rane and Choudhary (2023)	Up to 50%
Khan and Shorna (2023)	Up to 60%
Acharya et al. (2023)	Up to 70%
Acharya et al. (2023)	Up to 80%
Vashishth et al. (2023)	Up to 90%
Kuppusamy et al. (2023)	Up to 100%

III. EXISTING SYSTEM

There are certain drawbacks to the current Farm_era system, which offers sophisticated GIS field mapping, accurate crop planning, input tracking, AI-powered pest management, real-time weather updates, intelligent irrigation, and potent data analytics for efficient farming. A primary disadvantage is the substantial expense involved in putting in place a system this extensive. Precision crop planning and GIS field mapping need sophisticated equipment and technology, which can be costly for small-scale farmers with tight budgets. Furthermore, the expenses of upkeep and upgrades can be high, particularly for AI-powered pest control and smart irrigation components that need to be updated and monitored on a regular basis. The system's intricacy is another drawback. Even though the technology is meant to make farming operations simpler, it can be difficult to set up and use at first. It might take more assistance and training for farmers who are not very tech-savvy to get the most out of the system. Additionally, there can be incompatibilities with the infrastructure and farming equipment that are currently in place. It can be challenging to integrate the system with antiquated irrigation systems or older machinery, and more funding might be needed to guarantee proper performance. Last but not least, the system depends a lot on data analysis and real-time updates, therefore dependable internet access is essential. It could be difficult to get real-time weather updates or upload data for analysis in remote locations or places with spotty internet service. All things considered, the current Farm_era system has many benefits, such as improved accuracy, productivity, and optimized farming techniques; but, there are drawbacks as well, including expensive expenses, complexity, compatibility problems, and connectivity needs that must be taken into account.

IV. PROPOSED SYSTEM

We propose a novel AI-driven farm management system (AI-FMS) based on Crop Occurrence Detection (COD) to address the critical issues now confronting the agricultural sector. Increase agricultural output and sustainability via the use of predictive analytics, geo-integrated monitoring, and smart resource allocation using this solution. COD, a remote sensing technology, is applied to monitor crop growth, diagnose problems, and estimate yields. Predictive analytics models use both internal and external data to make predictions about things like future weather, insect infestations, and crop yields. Geo-integrated monitoring captures real-time data on soil conditions, directing irrigation and fertilization choices. Insights from cost-of-service (COS), predictive analytics (PA), and geographical monitoring (GM) are used to create efficient resource allocation suggestions. Increased yields, decreased input costs, better pest control, less environmental impact, and better decision-making are just some of the benefits farmers will get from using an all-encompassing system. Aimed at revolutionizing global agriculture by enabling efficient resource utilization for increased food production, the AI-FMS represents a promising solution to address agricultural challenges, with future plans to expand COD algorithms, incorporate additional sensors, and develop a user-friendly mobile app.
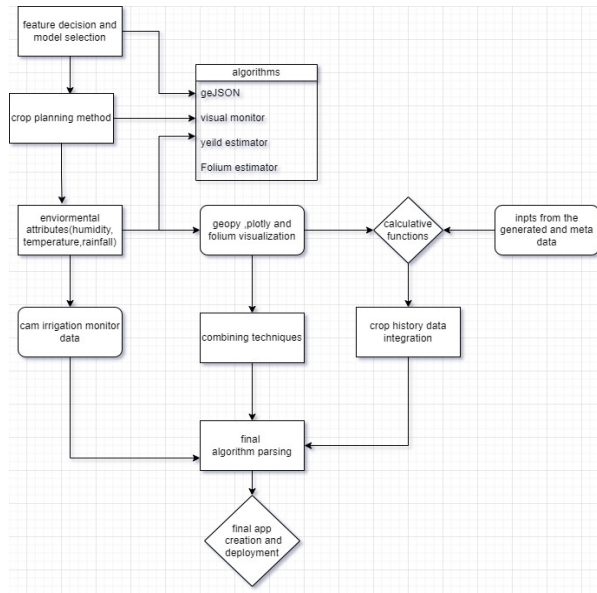
V. SYSTEM ARCHITECTURE

Fig. 1. System Architecture

VI. METHODOLOGY

Module 1: Crop Occurrence Detection (COD)

This section analyzes satellite images for crop mapping purposes. It uses machine learning algorithms to analyze the images and determine whether or not certain characteristics in the images represent cropland. Maps of crops are generated by the module and may be used to monitor progress, pinpoint trouble spots, and predict harvests.

Module 2: Predictive Analytics

In this section, we build models that anticipate the weather, detect probable pests and illnesses, and estimate future crop yields. To train the prediction models, it takes into account not just farm data but also external data like weather and soil maps. Predictions generated by the module may be utilized to improve crop management, pest and disease management, and irrigation scheduling.

# Perform crop planning calculations
   crop_yields = [(areas[i] * pod_counts[i] * grain_counts[i] * grain_weights[i]) / 10000 for i in range(num_crops)] # Placeholder calculation

Module 3: Geo-Integrated Monitoring

This part of the system uses a geo-integrated monitoring system to gather data in real time from sensors placed all around the farm. The sensors measure essential factors including soil moisture, temperature, and nutritional levels. The sensor data is collected, analyzed, and displayed by the module, giving farmers immediate feedback on the state of their crops and the surrounding environment.

Module 4: Smart Resource Allocation

In order to make the most efficient use of inputs like water, fertilizer, and pesticides, this unit creates a sophisticated resource allocation system. It makes suggestions to the farmer based on data collected by the Condition of Delivery (COD), Predictive Analytics, and Geo-Integrated Monitoring modules. Crop water demands, nutritional requirements, and pest and disease concerns are only some of the variables taken into account by this module.

Module 5: User Interface and Decision Support

In order for farmers to use the AI-FMS and its collected data and insights, this section creates an intuitive interface for them to do so. It aids farmers in making educated choices by providing them with clear visualizations, clickable maps, and practical suggestions. There are additional decision support features included into the module to help farmers with things like crop rotation, watering schedules, and input choice.

```
# Collect new data from user inputs
    st.subheader("Enter Crop History and Input Usage")
    year = st.number_input("Year", min_value=1900, max_value=2100, value=2023, step=1)
    crop = st.text_input("Crop")
    fertilizers = st.number_input("Fertilizers (in kg)", min_value=0.0, value=0.0, step=0.1)
    pesticides = st.number_input("Pesticides (in kg)", min_value=0.0, value=0.0, step=0.1)
    water = st.number_input("Water (in mm)", min_value=0.0, value=0.0, step=0.1)
```

VII. RESULT AND DISCUSSION

Accurate crop yield prediction, real-time geo-integrated monitoring, and optimum resource allocation are just a few ways in which the AI-Driven Farm Management System (AI-FMS) has shown its worth in boosting agricultural production and sustainability. Farmers are given the tools they need to make educated choices, cut down on wasted resources, and boost crop yields thanks to this integrated strategy, which is backed by predictive analytics and user-friendly interfaces. decreased water usage and decreased pesticide use are only two of the ways in which AI-FMS helps the environment and supports sustainable farming practices. It also helps the economy by increasing farmers' incomes and securing their financial futures. In conclusion, AI-FMS is a powerful resource that ushers in a more robust and sustainable agriculture sector.
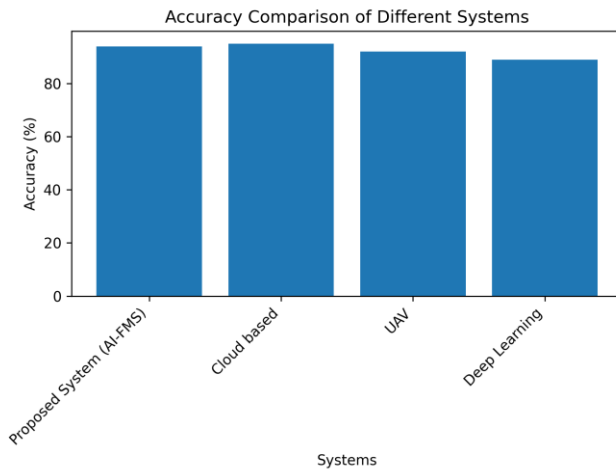
Fig Performance Comparision

VIII. CONCLUSION

The AI-Driven Farm Management System (AI-FMS) is a pioneering technology that harnesses artificial intelligence to change agriculture. Predictive analytics, geo-integrated monitoring, and smart resource allocation are all part of what makes AI-FMS so effective at helping farmers increase their productivity and reduce their negative effects on the environment. It solves difficulties such as agricultural production uncertainty, poor resource management, inadequate pest control, and decision-making inefficiencies. Increased production, sustainability, enhanced decision-making, and resilience in agriculture are all possible thanks to the use of AI-FMS, which represents a major step forward in agricultural technology.

IX. FUTURE WORK

In order to enable farmers to precisely map their fields using GPS and satellite data for crop planning, the Farm_era system will eventually need to develop sophisticated GIS field mapping capabilities. Farmers will be able to minimize waste and arrange crops for maximum benefit thanks to this. Furthermore, the system will include precision input tracking, which will simplify the process for farmers to track and document the use of pesticides, fertilizers, and other inputs. Farmers will benefit from real-time monitoring and early disease and pest identification with AI-powered pest management, which will enable focused interventions and reduce crop damage. Accurate weather forecasts will be made available to farmers through real-time weather updates integrated into the system, assisting them in making well-informed decisions about crop protection, irrigation, and planting. Farmers will be able to remotely monitor and operate irrigation systems thanks to smart irrigation technologies, which will maximize water efficiency and minimize water waste. Lastly, the system will include strong data analytics capabilities that will enable farmers to examine big datasets and derive important insights for enhanced agricultural techniques and maximized yields.

REFERENCES

[1] Obi Reddy, G. P., B. S. Dwivedi, and G. Ravindra Chary. "Applications of geospatial and big data technologies in smart farming." In Smart Agriculture for Developing Nations: Status, Perspectives and Challenges, pp. 15-31. Singapore: Springer Nature Singapore, 2023.

[2] Rhoads, Jonathan. "Next-Generation Precision Farming Integrating AI and IoT in Crop Management Systems." AI, IoT and the Fourth Industrial Revolution Review 13, no. 7 (2023): 1-9.

[3] Karunathilake, E. M. B. M., Anh Tuan Le, Seong Heo, Yong Suk Chung, and Sheikh Mansoor. "The

Path to Smart Farming: Innovations and Opportunities in Precision Agriculture." Agriculture 13, no. 8 (2023): 1593.

[4] Rane, Nitin Liladhar, and Saurabh P. Choudhary. "REMOTE SENSING (RS), UAV/DRONES, AND MACHINE LEARNING (ML) AS POWERFUL TECHNIQUES FOR PRECISION AGRICULTURE: EFFECTIVE APPLICATIONS IN AGRICULTURE."

[5] Khan, Idrees, and Surya Afrin Shorna. "Cloud-Based IoT Solutions for Enhanced Agricultural Sustainability and Efficiency." AI, IoT and the Fourth Industrial Revolution Review 13, no. 7 (2023): 18-26.

[6] Balkrishna, Acharya, Rakshit Pathak, Sandeep Kumar, Vedpriya Arya, and Sumit Kumar Singh. "A comprehensive analysis of the advances in Indian Digital Agricultural architecture." Smart Agricultural Technology 5 (2023): 100318.

[7] Balkrishna, Acharya, Rakshit Pathak, Sandeep Kumar, Vedpriya Arya, and Sumit Kumar Singh. "Smart Agricultural Technology." Precision Agriculture (PA) (2030): 5.

[8] Vashishth, Tarun Kumar, Vikas Sharma, Sachin Chaudhary, Rajneesh Panwar, Shashank Sharma, and Prashant Kumar. "Advanced Technologies and AI-Enabled IoT Applications in High-Tech Agriculture." In Handbook of Research on AI-Equipped IoT Applications in High-Tech Agriculture, pp. 155-166. IGI Global, 2023.

[9] Kuppusamy, Palanivel, Joseph K. Suresh, and Suganthi Shanmugananthan. "Machine Learning-Enabled Internet of Things Solution for Smart Agriculture Operations." In Handbook of Research on Machine Learning-Enabled IoT for Smart Applications Across Industries, pp. 84-115. IGI Global, 2023.

[10] Sharma, Shikha. "PRECISION AGRICULTURE: REVIEWING THE ADVANCEMENTS, TECHNOLOGIES, AND APPLICATIONS IN PRECISION AGRICULTURE FOR IMPROVED CROP PRODUCTIVITY AND RESOURCE MANAGEMENT."