

Bizz... Ness

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EMERGING TRENDS IN BUSINESS
ENVIRONMENT :
A GLOBAL PERSPECTIVE

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About the Journal

Bizz... Ness, A Multidisciplinary Double Blind Peer Reviewed Research Journal of the Ness Wadia College of Commerce, Pune is an annual research journal that aims to honing the research skills among the teaching community. Its objective is to encourage the Teachers, Research Scholars, Professionals and Corporates to write research papers and articles on various areas of business and finance studies.

The journal publishes research papers, case studies, book reviews and articles relating to Commerce, Economics, Banking, Business and other related areas.

All contributions to the journal are initially screened by the Editorial Board for their relevance and authenticity. The selected papers have been evaluated by “Double Blind Peer Review Committee”. The Editorial Board reserved the right to accept or reject papers on the basis of the referees' assessment.

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OPTIMIZING GLOBAL VALUE CHAINS : A STUDY OF INTERNATIONAL BUSINESS STRATEGIES AND BEST PRACTICES

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➤ ABSTRACT :

This study examines the concept of Global Value Chains (GVCs) and their impact on international business. We investigate the different models of GVCs and discuss their strengths and weaknesses. Our analysis reveals that a collaborative and flexible approach to GVC management is essential for success in the global marketplace.

This paper includes Impact and best practices of Global Value Chain. It will be helpful for new trends in business. In the global market strategies for Global Value Chain will play vital role.

Key Words - Global Value Chains, International Business, Management, Global Market Place,

1.1 INTRODUCTION :

Global Value Chains (GVCs) have become a crucial component of international business, enabling firms to access new markets, technologies, and skills. AGVC is a network of organizations that work together to design, produce, and deliver a product or service.

1.2 LITERATURE REVIEW : Literature studied for this study

Previous research has identified various GVC models, including linear, hub-and-spoke, and network models. Each model has its strengths and weaknesses, and the choice of model depends on the specific needs and goals of the firm

"Global Supply Chain Ecosystems" by Mark Millar provides a comprehensive look at modern supply chains, emphasizing emerging markets and offering both theoretical and practical advice. Another valuable resource, "Global Supply Chains: Evaluating Regions on an EPIC Framework," focuses on a structured approach to assessing different global regions for supply chain activities, using the EPIC framework (Economy, Politics, Infrastructure, and Competence). For a more in-depth understanding, "Global Supply Chain Management: Leveraging Processes, Measurements, and Tools for Competitive Advantage" delves into developing a core strategy and aligning it with industry conditions.

In Global Supply Chain Ecosystems industry leader Mark Millar presents detailed and practical insights that will help you capitalise on market opportunities, overcome supply chain challenges and make better informed business decisions. In addition to highlighting key supply chain shifts such as the move beyond globalisation back towards regionalisation, this

ground-breaking new publication explores several critical aspects of global supply chain ecosystems - including visibility, resilience, sustainability and collaboration.

Several excellent books delve into the complexities of global supply chains. Some highly recommended titles include Supply Chain Management by Sunil Chopra, The Goal by Eli Goldratt, The Supply Chain Revolution by Suman Sarkar, and The Box by Marc Levinson. These books cover various aspects, from foundational concepts to strategic considerations in a global context.

1.3 RESEARCH METHODOLOGY : This research is totally done on secondary data

1.4 IMPORTANCE OF GVC :

Global Value Chain refers to International production sharing, a phenomenon where production is broken into activities and tasks carried out in different countries. They can be thought of a large-scale extension of division of labour dating back to Adam Smith's time. In the famed example attributed to Smith, the production of a pin was divided into a number of distinct operations inside a factory, each performed by a dedicated worker. In GVCs, the operations are spread across national borders (instead of being confined to the same location) and the products made are much more complex than a pin.

Global value chain The full range of activities (design, production, marketing, distribution and support to the final consumer, etc) that are divided among multiple firms and workers across geographic spaces to bring a product from its conception to its end use and beyond.

Transnational corporation An enterprise (irrespective of its country of origin and ownership, including private, public or mixed) which comprises entities located in two or more countries that are linked, by ownership or otherwise, such that one or more of them may be able to exercise significant influence over the activities of the others and, in particular, to share knowledge, resources and responsibilities with them.

Cross-border production has been made possible by the liberalization of trade and investment, lower transport costs, advances in information and communication technology, and innovations in logistics (e.g. containerization). While cross-border production itself may not be new, it has expanded rapidly in many industries in recent decades. This development has largely been driven by transnational corporations (TNCs) in industrialized economies, which continuously restructure their businesses and reorganize/ relocate their operations for reasons of competition. The manifest example of relocation is the offshoring of labour-intensive stages of production from industrialized economies to low wage, labour abundant developing countries. Business operations are, however, also reshuffled among industrialized economies.

In addition to activities being sliced up and dispersed geographically, one feature that distinguishes GVCs from earlier waves of cross-border production is that production activities are also increasingly being undertaken by third parties with no equity links to the TNCs (in what is otherwise known as international outsourcing). In this regard, TNCs have consolidated their international operations in segments of industries reflecting their core strengths. They have also grown more powerful by controlling and coordinating their international production networks which consist of multiple firms. One estimate suggests that GVCs 'governed' by TNCs account for 80 per cent of world trade each year.

Outsourcing The procurement of material inputs or services by a firm from another, the outside supplier being located in another country in the case of international outsourcing.

Countries can participate in GVCs by engaging in either backward or forward linkages. Backward linkages are created when country A uses inputs from country B for domestic production. Firms in country A can source inputs from country B through direct as well as indirect imports, i.e. inputs are either supplied by local affiliates of TNCs from country B or by locally owned firms that import inputs from other countries. Being able to source foreign inputs is particularly advantageous if the inputs required for production are either not available locally or available but deficient in some aspects (e.g. quantity, quality and price).

Producing and supplying inputs for production can be especially important for developing countries seeking entry into new industries and learning to make things (however simple) for export markets. It is equally important for industrialised economies which supply complex, specialised and possibly high value inputs.

Forward linkages are created when country A supplies inputs that are used for production in country B. The goods produced in foreign countries may be final products (for local consumption and investment) or intermediate products which are exported further elsewhere for use as inputs. Being able to produce and supply inputs for production to firms in other countries can be especially important for developing countries seeking entry into new industries and that are in the process of learning how to produce goods (however simple) for export markets. These inputs are, however, equally important for industrialized economies that supply complex, specialized and high value inputs. A case in point is China which accounts for 80 per cent of world production of ballpoint pens, but has had to import the pen tips required for production from Japan, Germany and Switzerland – the few countries that actually know how to properly produce pen tips.

Products cross several borders in GVCs in different stages of production before they are turned into final goods. As such, trade in intermediate goods, which require further processing and are used as inputs for production – is often used as a proxy measure of GVCs. Since 1995, intermediate manufactures have consistently accounted for around half of manufactured exports and imports at the global level, providing evidence of the existence of GVC trade.

1.5 IMPACT OF GLOBAL VALUE CHAIN

GVCs represent a cross-border production process where different stages of production, from raw materials to final product, are spread across multiple countries. Analyzing GVCs involves understanding the various stages of production, the actors involved, the governance structures, and the resulting economic and social impacts. Key conceptual aspects include the fragmentation of production, the role of different countries in the chain, and the impact on trade, development, and firm strategies.

Here's a more detailed breakdown :

1. Fragmentation of Production :

GVCs involve breaking down the production process into distinct stages and locating each stage in the most suitable location, often driven by factors like cost, skills, or resource

availability.

This fragmentation leads to a more complex international division of labor, with different countries specializing in specific tasks or stages of production.

Examples include the production of automobiles, where parts may be sourced from multiple countries, assembled in another, and then distributed globally.

2. Role of Different Countries :

Countries can participate in GVCs in different ways, acting as suppliers of raw materials, intermediate inputs, or final products.

Upstream activities: These involve the initial stages of production, such as resource extraction or component manufacturing.

Downstream activities: These are the final stages, including assembly, marketing, and distribution.

Countries can also specialize in providing specific services, such as design, logistics, or customer support, within the GVC.

3. Governance Structures :

GVCs are governed by various mechanisms, including buyer-driven (where large retailers or brands lead the chain) or producer-driven (where manufacturers or lead firms control the chain). The governance structure influences the distribution of power, risks, and benefits within the chain.

Factors like intellectual property rights, contract enforcement, and regulations also play a crucial role in shaping GVC governance.

4. Economic and Social Impacts:

GVCs can create opportunities for economic growth, job creation, and technology transfer in participating countries.

However, they can also lead to income inequality, job displacement in some sectors, and environmental degradation if not managed properly. The ability of countries to benefit from GVCs depends on their capacity to upgrade their production capabilities, improve their governance structures, and address social and environmental challenges.

5. Implications for Trade and Development:

GVCs have transformed the nature of international trade, with a greater share of global trade consisting of intermediate goods rather than final products. Developing countries can use GVCs as a pathway to economic development by upgrading their production capabilities and moving up the value chain.

However, they also need to be aware of the risks associated with GVC participation, such as dependence on lead firms, price volatility, and potential exploitation of workers.

In essence, understanding GVCs requires a multi-faceted approach that considers the fragmentation of production, the roles of different countries, the governance structures, and the resulting economic and social impacts, while also recognizing the implications for trade and development.

1.6 BEST PRACTICES FOR RUNNING A GVC-

Based on our research, we commend the following best practices for running a GVC:

1. Collaborate with partners : Encourage collaboration among partners to share knowledge, expertise, and resources.
2. Foster flexibility : Design the GVC to be flexible and adaptable to changing market conditions and customer needs.
3. Ensure transparency : Ensure transparency throughout the GVC, including visibility into production processes, inventory levels, and shipping schedules.
4. Manage risk : Develop a comprehensive risk management strategy to mitigate potential disruptions to the GVC.
5. Continuously improve : Encourage a culture of continuous improvement throughout the GVC, with a focus on innovation, quality, and efficiency.

1.7 FINDINGS

Our findings suggest that a collaborative and flexible approach to GVC management is essential for success in the global marketplace. This approach enables firms to respond quickly to changing market conditions and customer needs.

1.8 CONCLUSION

In conclusion, our research highlights the importance of a collaborative and flexible approach to GVC management. By following the best practices outlined in this study, firms can

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MACRO - ECONOMIC VARIABLES AND HAPPINESS : AN ANALYSIS

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➤ ABSTRACT

This research paper delves into the intricate relationship between macroeconomic variables and the multifaceted concept of human happiness. While traditional economic indicators like GDP have long been the primary focus of national policy, a growing body of research highlights their limitations in capturing the true well-being of a population. This paper aims to explore how key macroeconomic factors—such as GDP per capita, inflation, unemployment, income inequality, and economic growth—interact with and influence the happiness levels of individuals and societies. By synthesizing empirical findings and theoretical frameworks, including the Easterlin Paradox, Adaptation Theory, and Social Comparison Theory, this study seeks to provide a comprehensive understanding of this complex relationship. Furthermore, it examines various measures of happiness, including self-reported happiness, life satisfaction, and positive affect, and discusses their relevance in assessing national well-being. The paper concludes by outlining crucial policy implications that advocate for a shift towards incorporating happiness and well-being metrics into national policy-making, fostering sustainable development, and implementing targeted interventions to address specific impediments to societal happiness. This holistic approach is essential for designing policies that not only promote economic prosperity but also genuinely enhance the quality of life and overall happiness of citizens.

Keywords : Macroeconomic variables, Happiness, GDP, Inflation, Unemployment

1. Introduction: The Pursuit of Happiness in Economic Discourse

The ultimate goal of any society is to foster the well-being and happiness of its citizens. For decades, economic policy has predominantly focused on metrics such as Gross Domestic Product (GDP) and economic growth, assuming a direct correlation between material prosperity and societal welfare. However, this assumption has increasingly been challenged by empirical evidence and a deeper understanding of human psychology and social dynamics. While economic stability and growth undoubtedly contribute to improved living standards, they do not automatically translate into higher levels of happiness for all individuals or across all stages of development.

This research paper aims to bridge the gap between traditional economic analysis and the burgeoning field of happiness economics. It investigates how various macroeconomic variables, far from being mere abstract figures, directly impact the daily lives and emotional states of people. Understanding these relationships is critical for policymakers to develop more effective and humane economic strategies that prioritize genuine human well-being

alongside conventional economic objectives. By examining the interplay between economic conditions and happiness, this paper seeks to contribute to a more nuanced and holistic approach to national development.

2. Macroeconomic Variables and Its Influence on Happiness

Macroeconomic variables are the large-scale economic factors that affect national or global economies. Their fluctuations and long-term trends have profound implications for individuals' economic security, opportunities, and overall quality of life, thereby influencing their happiness levels.

2.1. GDP per Capita

GDP per capita, often considered a proxy for the average economic well-being of a country's population, generally exhibits a positive relationship with happiness. In countries with very low GDP per capita, increases in income often lead to significant improvements in happiness, as they enable individuals to meet basic needs such as food, shelter, healthcare, and education. This initial surge in happiness is attributable to the alleviation of fundamental stressors and improved living conditions.

However, research, notably the "Easterlin Paradox," suggests that this positive correlation holds true only up to a certain point. Beyond a moderate level of income, the marginal utility of additional wealth in terms of happiness diminishes significantly. This means that once basic needs are comfortably met, further increases in GDP per capita do not necessarily lead to proportional increases in happiness. For instance, highly developed nations, despite having significantly higher GDP per capita, do not always report substantially higher levels of happiness compared to moderately affluent countries. This phenomenon can be explained by factors such as rising aspirations, social comparison, and the increasing importance of non-material factors once basic material security is achieved.

Table No: 1 GDP per Capita (Billion USD)

Year	India	China	Pakistan	Japan	Thailand	Vietnam	Taiwan
2016	\$1,707.51	\$8,079.20	\$1,460.00	\$34,942.00	\$6,009.00	\$2,185.00	\$22,892.00
2017	\$1,950.10	\$8,837.70	\$1,556.00	\$38,550.00	\$6,589.00	\$2,342.00	\$25,123.00
2018	\$1,966.25	\$9,956.10	\$1,617.00	\$39,788.00	\$6,971.00	\$2,581.00	\$27,159.00
2019	\$2,041.43	\$10,261.60	\$1,539.00	\$40,847.00	\$7,173.00	\$2,785.00	\$28,506.00
2020	\$1,907.04	\$10,500.40	\$1,402.00	\$39,836.00	\$6,881.00	\$2,785.00	\$29,088.00
2023	\$2,480.79	\$12,614.06	\$1,647.00	\$33,766.52	\$7,815.61	\$3,775.46	\$34,059.00
2024	\$2,480.79	\$13,121.68	\$1,647.00	\$37,144.91	\$7,985.33	\$4,017.75	\$34,059.00

(Note: Data for 2024 GDP per capita might be estimates or provisional figures, and can vary slightly across sources. Some sources only provide GDP in USD, not per capita directly.)

2.2. INFLATION

Inflation, the rate at which the general level of prices for goods and services is rising, has a demonstrably negative impact on happiness. High and volatile inflation erodes the purchasing power of individuals, making it harder for them to afford essential goods and

services. This creates economic insecurity, reduces real incomes, and disproportionately affects those with fixed incomes or limited savings. The uncertainty associated with unpredictable price increases also makes financial planning difficult, leading to stress and anxiety. Stable and low inflation, conversely, contributes to economic predictability and allows individuals to plan their expenditures and savings with greater confidence, thereby supporting higher levels of happiness.

Table No: 2 Inflation Rate in Percentage

Year	India (%)	China (%)	Pakistan (%)	Japan (%)	Thailand (%)	Vietnam (%)	Taiwan (%)
2016	4.90	2.00	4.10	-0.13	0.20	2.67	1.40
2017	3.60	1.59	4.20	0.48	0.70	3.52	0.60
2018	3.40	2.07	6.90	0.99	1.10	3.54	1.40
2019	4.80	2.90	10.70	0.47	0.70	2.80	0.50
2020	6.60	2.42	8.90	-0.02	-0.80	3.22	-0.20
2023	5.50	0.23	29.20	3.27	1.20	3.25	2.50
2024	5.22	0.22	17.34	2.74	0.40	3.62	2.20

(Note: Inflation data for 2024 often reflects current year-on-year or average figures available at the time of compilation, and can vary. Pakistan's 2024 figure is for April, 2024 year-on-year.)

➤ 2.3. UNEMPLOYMENT

Unemployment is one of the most detrimental macroeconomic factors for individual happiness. Beyond the immediate financial hardship, job loss often leads to a significant decline in self-esteem, social status, and mental well-being. The psychological impact of unemployment can be profound, including feelings of worthlessness, isolation, and depression. Long-term unemployment can further exacerbate these issues, making it difficult for individuals to re-enter the workforce and maintain their social connections. Even for those who remain employed, high unemployment rates can create a climate of fear and insecurity, as job retention becomes a constant concern. Therefore, policies aimed at maintaining full employment and providing robust support for the unemployed are crucial for fostering societal happiness.

Table No: 3 Unemployment Rate in Percentage

Year	India (%)	China (%)	Pakistan (%)	Japan (%)	Thailand (%)	Vietnam (%)	Taiwan (%)
2016	3.50	4.00	5.90	3.10	0.90	2.30	3.90
2017	3.50	3.90	5.80	2.80	1.20	2.20	3.80
2018	5.30	3.80	5.70	2.40	1.00	2.20	3.70
2019	5.30	3.60	5.80	2.40	1.00	2.10	3.70
2020	8.00	5.00	4.40	2.80	1.70	2.20	3.80
2023	3.20	4.67	5.70	2.60	0.73	2.30	3.50
2024	3.20	4.57	5.50	2.56	0.69	2.20	3.37

(Note: Data for 2024 unemployment rates might be provisional or based on current trends. India's 2023-24 unemployment rate is 3.2% as per Economic Survey 2024-25. Taiwan's 2024 data is for January 2025 as the latest available. Vietnam's 2016-2024 unemployment rates were not directly available in the search results and thus approximated based on available information).

2.4. Income Inequality

Income inequality, measured by indicators such as the Gini coefficient, has a significant and often negative impact on happiness. While individual income levels contribute to happiness, the distribution of wealth within a society also plays a crucial role. High levels of income inequality can lead to feelings of unfairness, resentment, and social division. People tend to compare themselves to others, and if they perceive a vast disparity in opportunities and outcomes, it can diminish their sense of well-being, even if their absolute income is rising. This social comparison can foster insecurity, poverty, anxiety, and a sense of hopelessness, which collectively hinder overall happiness. Moreover, extreme inequality can undermine social cohesion, trust in institutions, and access to essential services for marginalized groups, all of which are vital for a happy society.

2.5. Economic Growth

Sustained economic growth, particularly in developing economies, can be a significant contributor to increased happiness by facilitating improvements in infrastructure, technology, and public services. Economic growth can lead to job creation, higher wages, and greater investment in education and healthcare, all of which enhance quality of life. However, the positive impact of economic growth on happiness is not unconditional. Its benefits can be severely limited by factors such as rising income inequality, which concentrates wealth in the hands of a few, and environmental degradation, which negatively affects public health and quality of life. Unsustainable growth models can lead to pollution, resource depletion, and climate change, ultimately diminishing long-term well-being. Therefore, the *nature* of economic growth—whether it is inclusive and environmentally sustainable—is as important as its rate in determining its impact on happiness.

3. Happiness Measures: Quantifying an Elusive Concept

Measuring happiness is a complex endeavor, as it is a subjective and multifaceted human experience. Researchers employ various methods to quantify and assess happiness, recognizing that no single measure can capture its entirety.

3.1. Self-Reported Happiness

Self-reported happiness is perhaps the most direct and widely used measure. It involves surveys and questionnaires that ask individuals to rate their own happiness levels, often on a numerical scale (e.g., "On a scale of 1 to 10, how happy are you?"). This method relies on individuals' subjective assessment of their current emotional state. While seemingly straightforward, self-reported happiness can be influenced by transient moods, cultural biases, and the immediate context in which the question is asked. However, when collected systematically across large populations and over time, these measures can provide valuable insights into general trends and patterns of well-being.

3.2. Life Satisfaction

Life satisfaction measures assess individuals' overall satisfaction with their lives as a whole, rather than their momentary emotional state. Questions typically ask individuals to

evaluate how satisfied they are with their life circumstances, achievements, relationships, and future prospects. This measure tends to be more stable than self-reported happiness, as it reflects a more cognitive and evaluative judgment of one's life rather than just fleeting emotions. It provides a broader perspective on well-being, encompassing an individual's sense of purpose, meaning, and fulfillment.

3.3. Positive Affect

Positive affect refers to the frequency and intensity of positive emotions experienced by individuals, such as joy, contentment, enthusiasm, and affection. Measures of positive affect often involve asking respondents about their emotional experiences over a specific period (e.g., "How often did you feel joyful in the past week?"). This approach captures the hedonic component of happiness, focusing on the pleasure and enjoyment derived from daily life. While distinct from life satisfaction, positive affect is a crucial component of overall happiness and contributes significantly to an individual's psychological well-being.

4. Theories and Models of Happiness

The relationship between economic factors and happiness has given rise to several influential theories and models that attempt to explain the observed patterns.

4.1. Easterlin Paradox

The Easterlin Paradox, first proposed by economist Richard Easterlin in the 1970s, is a seminal concept in happiness economics. It posits that, beyond a certain threshold of income necessary to meet basic needs, additional income does not lead to a sustained increase in average national happiness. While individuals within a country may report higher happiness levels as their income increases relative to others, the average happiness across the entire nation does not rise proportionally over long periods, even with significant economic growth. This phenomenon suggests that once fundamental needs are met, people's aspirations and comparison points tend to rise with their income, effectively neutralizing the long-term impact of further material gains on aggregate happiness. Psychologists often attribute this to individuals' adaptability to new circumstances, a concept further explored by Adaptation Theory.

4.2. Adaptation Theory

Adaptation theory suggests that individuals tend to adapt to changes in their circumstances, whether positive or negative, and eventually return to a baseline level of happiness. This "hedonic treadmill" implies that while a rise in income or a new positive life event might initially boost happiness, the effect is often temporary as people become accustomed to their new situation. Similarly, negative events, while initially causing distress, often see individuals adapting and regaining their previous happiness levels over time. This theory helps explain why even substantial economic progress may not lead to long-term increases in happiness, as people continuously adjust their expectations and desires.

4.3. Social Comparison Theory

Social comparison theory, developed by Leon Festinger, posits that individuals evaluate their own opinions, abilities, and experiences by comparing themselves to others. In the context of happiness and economics, this theory suggests that a person's happiness is not solely determined by their absolute income or wealth but also by how their economic status compares to that of their peers, social groups, or even the general population. Greater income inequality can lead to lower happiness levels because it amplifies these social comparisons, creating feelings of envy, deprivation, and unfairness among those who perceive themselves

as less fortunate. This constant upward comparison, fueled by visible disparities in wealth and lifestyle, can undermine individual and collective well-being, even in economically growing societies.

5. Policy Implications: Towards a Happiness-Centric Economy

Understanding the complex interplay between macroeconomic variables and happiness has crucial implications for policy-making. A shift from purely economic growth-centric policies to those that prioritize human well-being is increasingly advocated.

5.1. Targeted Interventions

Given that certain macroeconomic factors, like unemployment and income inequality, have profound negative impacts on happiness, policymakers should focus on targeted interventions to mitigate these issues. This could include:

- **Active Labour Market Policies:** Programs designed to reduce unemployment, such as job training initiatives, re-skilling programs, and employment subsidies, can help individuals find meaningful work and restore their sense of purpose.
- **Progressive Taxation and Social Safety Nets:** Policies aimed at reducing income inequality, such as progressive tax systems, minimum wage laws, and robust social safety nets (e.g., unemployment benefits, affordable healthcare, housing assistance), can help redistribute wealth and ensure a basic standard of living for all, fostering a greater sense of fairness and security.
- **Mental Health Support:** Recognizing the psychological toll of economic hardship, governments should invest in accessible mental health services, particularly for those affected by unemployment or poverty.

5.2. Well-being Metrics in Policy Decision-Making

Incorporating happiness and well-being metrics into policy decision-making is a critical step towards a more holistic approach to governance. This involves:

- **Beyond GDP:** Moving beyond GDP as the sole measure of national progress and adopting broader well-being indicators, such as those found in the World Happiness Report or the OECD Better Life Initiative. These metrics provide a more comprehensive picture of societal health, encompassing factors like social support, freedom, generosity, and trust.
- **Impact Assessments:** Conducting "happiness impact assessments" for major policy decisions to evaluate their potential effects on citizen well-being before implementation. This would involve analysing how proposed policies might affect various aspects of happiness, including mental health, social cohesion, and work-life balance.
- **National Happiness Strategies:** Developing national strategies specifically aimed at enhancing happiness and well-being, similar to Bhutan's Gross National Happiness (GNH) index. This involves setting well-being goals and designing policies across all sectors—education, health, environment, and social welfare—to achieve them.

5.3. Sustainable Development

Pursuing economic growth that balances human well-being with environmental sustainability is paramount for long-term happiness. Unsustainable economic practices often lead to environmental degradation, resource depletion, and climate change, which can

negatively impact health, security, and quality of life. Sustainable development policies include:

- **Green Economy Initiatives:** Investing in renewable energy, sustainable agriculture, and eco-friendly industries can create new jobs, improve public health, and protect natural resources, contributing to both economic prosperity and environmental well-being.
- **Conservation and Biodiversity Protection:** Safeguarding natural ecosystems and biodiversity is essential for maintaining ecological balance, providing essential ecosystem services, and offering opportunities for recreation and connection with nature, all of which contribute to human happiness.
- **Responsible Consumption and Production:** Promoting circular economy principles, reducing waste, and encouraging ethical consumption can mitigate environmental damage and foster a more equitable distribution of resources.

By integrating these policy implications, governments can design interventions that not only address economic challenges but also actively promote the overall well-being and happiness of their populations, leading to more resilient, equitable, and fulfilling societies.

6. Happiness Index of Selected Countries: Trends and Disparities

The World Happiness Report provides a crucial annual assessment of global happiness, based primarily on self-reported life evaluations. Analysing the trends for selected countries reveals diverse patterns and highlights the complex interplay of economic and social factors.

Table No: 4 Happiness Index of Selected Countries

Year	India	China	Pakistan	Japan	Thailand	Vietnam	Taiwan
2016	118	83	92	53	33	96	35
2017	122	79	80	51	32	94	33
2018	133	86	75	54	46	95	26
2019	140	93	67	58	52	94	25
2020	144	94	66	62	54	83	25
2023	126	64	108	47	60	65	27
2024	126	60	108	51	58	54	31

Source: https://en.wikipedia.org/wiki/World_Happiness_Reports

From the table, it is evident that happiness trends vary significantly among the listed countries. Notably, only China has demonstrated a consistent increase in its happiness index over the observed period, moving from a rank of 83 in 2016 to 60 in 2024. This upward trend suggests that despite its unique economic and social model, certain factors within China, perhaps related to poverty reduction, improved infrastructure, or social stability, have contributed positively to its citizens' reported well-being.

In stark contrast, India and Pakistan have experienced a continuous decline in their happiness index rankings from 2016 to 2020, with some fluctuations in later years. India, for instance, dropped from 118 in 2016 to 144 in 2020, stabilizing at 126 in 2023 and 2024. Pakistan similarly saw a decline from 92 to 66 over the same period, only to drop

significantly to 108 in 2023 and 2024. These trends underscore the challenges these nations face in translating economic growth into widespread happiness, pointing to underlying social and economic disparities.

Japan, Thailand, and Vietnam also show interesting patterns. Japan, a highly developed nation, has fluctuated in its ranking but generally remains in the mid-range of the happiness index. Thailand and Vietnam, both rapidly developing economies, have seen some shifts in their rankings, reflecting the ongoing social and economic transformations within these countries. Taiwan consistently ranks higher in happiness compared to regional economic powerhouses like China, Japan, and India, reflecting strong social support systems and perceived freedom. Singapore, though not in the detailed table, is highlighted as the happiest country in Asia for the second consecutive year, ranking 30th globally in 2024, significantly outperforming its regional counterparts. This suggests that a combination of high GDP per capita, good governance, and effective social policies can lead to higher happiness levels.

Globally, the consistent top rankings of the five Scandinavian nations—Finland, Denmark, Iceland, Sweden, and Norway—for over a decade are particularly noteworthy. Finland, with a relatively small population, has held the title of the world's happiest country for seven consecutive years, followed closely by Denmark and Iceland. These countries are characterized by strong social safety nets, high levels of trust in government and institutions, low income inequality, robust welfare states, and a strong sense of community, even amidst long, cold winters. Their success challenges the notion that sheer economic size or warm climates are prerequisites for national happiness, emphasizing the importance of social capital and inclusive policies.

7. Reasons for India's Low Happiness Index

India's consistent low ranking in the World Happiness Report, despite its significant economic growth and status as the world's fifth-largest economy by nominal GDP, presents a compelling paradox. Several factors contribute to this phenomenon:

- **Vast Income Inequality** : Perhaps the most significant factor is the vast income inequality that pervades Indian society. While a segment of the population has experienced rapid wealth accumulation, a large proportion continues to struggle with poverty and economic insecurity. This disparity fosters insecurity, anxiety, and a sense of hopelessness among a significant portion of the population, impeding overall happiness. The stark contrast between the affluent and the struggling masses exacerbates social comparison, leading to feelings of relative deprivation and unfairness.
- **Long Working Hours and Job Insecurity**: Many Indians, particularly in urban areas, face long working hours, often coupled with job insecurity and demanding work environments. The fiercely competitive job market, especially for white-collar jobs, contributes to high levels of stress and burnout. This relentless pursuit of economic advancement often comes at the cost of personal well-being, leisure time, and social connections, all of which are vital for happiness.
- **Limited Social Support Systems**: While traditional family structures provide some level of social support, formal social safety nets in India are not as comprehensive or universally accessible as in many highly ranked happy countries. This can leave vulnerable populations without adequate support during times of economic hardship, illness, or old age, contributing to chronic stress and unhappiness.

- **Environmental Concerns:** Rapid urbanization and industrialization have led to significant environmental degradation in many parts of India, including air and water pollution. These environmental issues directly impact public health and quality of life, indirectly affecting happiness.
- **Healthcare Access and Quality:** Despite advancements, access to quality and affordable healthcare remains a challenge for a large segment of the population. Out-of-pocket expenses for healthcare can push families into poverty, contributing to significant stress and unhappiness.
- **Corruption and Governance:** Perceptions of corruption and inefficiencies in governance can erode public trust in institutions, leading to a sense of cynicism and powerlessness among citizens, which negatively impacts their overall well-being.

Despite these challenges, there are pockets of higher happiness within India. Mizoram, for example, has been declared the happiest state in India, according to a study by Rajesh K. Pillania. This study highlighted several factors contributing to Mizoram's high happiness levels, which could offer valuable insights for policy interventions in other parts of the country. These factors often include strong community bonds, a slower pace of life, greater perceived safety, and potentially more equitable distribution of resources at the local level.

8. What Creates Happiness? Philosophical and Economic Perspectives

The fundamental motivation to achieve happiness is universal, transcending cultures and economic systems. While the pursuit of happiness may manifest differently, underlying principles and conditions contribute to its realization.

From a philosophical perspective, Aristotle's concept of **eudemonic happiness** offers a profound understanding. Eudemonia often translated as "flourishing" or "living well," posits that true happiness arises not from transient pleasures (hedonic) but from self-realization and living a life of virtue and moral excellence. Aristotle asserted, "He is happy who lives in accordance with complete virtue and is sufficiently equipped with external goods, not for some chance period but throughout a complete life". He further emphasized that "The contemplative life is happiest," suggesting that intellectual pursuits and deep reflection contribute significantly to well-being. For Aristotle, once basic material needs are fulfilled, virtue and contemplation become essential for a truly happy life. This involves individuals cultivating their full potential, exercising their reason, and engaging in a life dedicated to serving others and the community. This view aligns closely with the approach of **Buddhist economics**, which emphasizes sufficiency over endless accumulation, compassionate action, and the cultivation of inner peace as pathways to well-being. Buddhist economics advocates for economic systems that support human flourishing and environmental harmony, rather than solely focusing on material growth.

In contemporary economic thought, the drivers of happiness are increasingly understood to include not just material wealth but also a range of non-material factors. These include:

- **Strong Social Connections:** Robust social networks, supportive family relationships, and a sense of community belonging are consistently identified as powerful predictors of happiness. Humans are social beings, and isolation or lack of meaningful connections can significantly diminish well-being.
- **Meaning and Purpose:** Engaging in activities that provide a sense of purpose, whether through work, volunteering, or creative pursuits, contributes significantly to happiness. A feeling of contributing to something larger than oneself fosters fulfilment.

- **Autonomy and Freedom:** The ability to make choices about one's life, pursue personal goals, and have control over one's circumstances is crucial for happiness. Societies that protect individual liberties and provide opportunities for self-determination tend to have happier citizens.
- **Trust and Good Governance:** High levels of trust in institutions, government, and fellow citizens are strongly correlated with happiness. A sense of fairness, transparency, and accountability in society fosters security and reduces anxiety.
- **Health and Well-being:** Good physical and mental health is foundational to happiness. Access to quality healthcare, healthy lifestyles, and environments that support well-being are essential.
- **Nature and Environment:** Access to green spaces, clean air and water, and a healthy environment positively impact mental and physical health, contributing to overall happiness.

Therefore, creating happiness is not merely an individual pursuit but also a collective responsibility, requiring policies and societal structures that nurture these diverse facets of human well-being.

➤ CONCLUSION

The relationship between macroeconomic variables and happiness is intricate and multi-layered. While economic prosperity, particularly in its initial stages, can significantly contribute to improved living standards and, consequently, happiness, its impact diminishes with increasing wealth and can even be undermined by factors like inflation, unemployment, and income inequality. The Easterlin Paradox, Adaptation Theory, and Social Comparison Theory offer valuable frameworks for understanding why sustained economic growth does not always translate into ever-increasing happiness.

This paper has highlighted the critical need for policymakers to move beyond a singular focus on GDP and embrace a broader understanding of national well-being. By considering self-reported happiness, life satisfaction, and positive affect as legitimate measures of societal progress, governments can design more effective and human-centric policies. Targeted interventions to address unemployment and income inequality, the integration of well-being metrics into policy decision-making, and a commitment to sustainable development are essential steps towards fostering happier and more resilient societies.

The contrasting happiness trends among the selected countries underscore that while economic foundations are important, factors such as social cohesion, equitable distribution of wealth, robust social safety nets, and good governance play an equally, if not more, crucial role in shaping the collective happiness of a nation. The success stories of countries like Finland, which consistently rank high in happiness despite varying economic sizes, serve as powerful examples that prioritizing social capital and comprehensive well-being can lead to flourishing societies. Ultimately, the pursuit of happiness is not merely an individual endeavor but a collective responsibility, demanding an economic and social framework that nurtures human potential, fosters connection, and ensures a dignified life for all.

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FOUR INVESTMENT LESSONS FROM INDIAN KNOWLEDGE SYSTEM WITH SPECIAL REFERENCE TO “ BHAGWADGITA ”

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➤ ABSTRACT -

India is a country with a long civilizational history dating back to a few millennia before the Common Era. Several recent researches on the antiquity of the Indian civilization have brought out newer evidence to indigenous knowledge in multiple domains. This includes, linguistics, arts, religion, spirituality, culture, mathematics and astronomy, science and technology, health and wellness, town planning, and public administration, to name a few. Despite having such a rich repository of knowledge, these ideas have not found place in modern day educational system in India.

The public policy under the British rule chose to deemphasize the indigenous knowledge system and instead crafted an alternative one based on Western knowledge. This became the basis for imparting education in India during the last 200 years. Consequently, the educational system currently in vogue in India has relied purely on the Western sources, which are relatively of recent origin. This has created a discontinuity in the Indian Knowledge System.

There has however been a renewed interest among the Indian society to reconnect with the past.

Keywords : Indian knowledge system, IKS, skill – based programs, employment opportunities, NEP 2020, Vedic literature, Upanishad, education, health, environment, Bhagwadgita, Investments, Lessons

➤ INTRODUCTION-

The Indian Knowledge Systems (IKS), or the Bhāratīya Jñāna Paramparā Vibhāga, is a division of the Ministry of Education of the Government of India with the vision to promote interdisciplinary and trans disciplinary research on all aspects of IKS, preserve and disseminate a deeper understanding and appreciation of IKS for further research, and societal applications. Established in October 2020, it is located in the AICTE headquarters in New Delhi.

The IKS Division supports and funds the establishment of IKS centers, and interdisciplinary and trans disciplinary research in IKS. The Division conducts internship programs for undergraduate students in addition to conducting faculty development programs, workshops, text mining and documentation projects, and many other activities.

in partnership with other institutions. Additionally, the Division initiated IKS Wiki portal for article publishing in various Bhāratīya languages, fostering a broader dissemination and engagement with traditional knowledge systems.

The main objective of the IKS Division is to go beyond merely acknowledging the existence of Indian Knowledge Systems and to rejuvenate and mainstream it by integrating it into the fabric of our education research ecosystem for the contemporary world. It further seeks to bridge the gap between Traditional Indian Knowledge Systems and contemporary knowledge systems. By doing so, the IKS Division aims at cultivating a living tradition that fosters the creation of new knowledge and inspires the development of future innovators and scholars based on Bhāratīya theories of knowledge generation and transmission.

History -

The Indian National Education Policy (NEP), as enacted in 2020, emphasizes the inclusion of IKS into curriculums at all levels of education ; in line with this, the National Credit Framework (NCF) has made it possible for students to earn credit in courses relating to ancient Indian sciences and arts. IKS is also being included under the Vision 2047 for Bharatiya Rasayanasastra initiative. In the 2022- 2023 budget, IKS's financial allocation was doubled to ₹20 crore (US\$2.4million).

Under University Grants Commission (UGC) guidelines, it is advised that 5 percent of a student's total credits should be in IKS courses at the undergraduate and post graduate levels. The UGC aims to train 1.5 million teachers in IKS by 2025, and has launched an online IKS MOOC course.

IKS has also spear headed and funded certain research initiatives relating to traditional Indian knowledge, such as in relation to agriculture and architecture.

Core principles of IKS -

The IKS focuses on three fundamental principles -

1. Paramparā:

Embracing the rich heritage and lineage of Indian Knowledge Systems, the IKS Division aims to uphold and carry forward the wisdom that has been passed down through generations. The goal is to highlight the continuous unbroken knowledge traditions of Bhārata since time immemorial.

2. Dṛṣṭi:

Indian knowledge systems offer unique perspectives that make this knowledge system 'Bhāratīya' and hold immense value in addressing contemporary and emerging challenges. By combining traditional wisdom with modern knowledge, we can find holistic solutions that transcend the limitations of either approach.

3. Laukika-prayojana:

The IKS Division aims to highlight the practical utility of the Indian Knowledge System to solve current and emerging problems of India and the world. By focusing on areas of societal importance, such as health, technology, and social well-being, IKS projects strive to make a tangible difference to the contemporary world by mainstreaming Indian Knowledge Systems.

Vision -

The vision of the IKS Division is to rejuvenate and mainstream Indian Knowledge Systems for the contemporary world.

The objective of the IKS Division is to completely decolonize Indian mind by generating interest and healthy critical reverence for the unbroken knowledge traditions of Bhārata for the welfare of the world.

Mission-

- Create a database of individuals and organizations who have contributed by way of Research, Teaching, Publication and Preservation of ancient and contemporary rich Indian knowledge systems ranging from art, music, dance, drama, to mathematics, astronomy, science, technology, life sciences, environment and natural sciences, healthcare, yoga, law, jurisprudence, economics, social sciences, psychology, philosophy, management, linguistics, oral traditions of India, knowledge hidden in Sanskrit, Prakrit,, Tamil, Pali, etc.
- Create portal for archival and dissemination of this rich knowledge and create an open portal and keep it dynamic and live like wiki, in a PPP mode.
- Promote and enable further research to address the societal challenges faced today in several areas including holistic health, psychology, neuroscience, nature, environment, and sustainable development.
- To provide financial assistance to research activities, workshops, seminars, and publications for furthering the cause of IKS.
- To identify scholars and institutions who have worked in various areas of IKS and their works and to categorize them in major areas.
- To promote research in IKS for providing proof of concepts, new knowledge generation, effective interdisciplinary work useful for society.
- To initiate collaboration / coordination between institutions under MoE, other ministries, departments, independent scholars, NGOs and private institutions working in the field of IKS to promote interdisciplinary research involving modern streams and ancient Shastras.
- To constitute Expert Groups and committees to plan, execute and oversee the objectives of IKS division.
- To take up any step, work, project, or activity to further the cause.

IKS. Subjects under Indian knowledge system :

Humanities, Engineering, Medicine, Agriculture, Community knowledge systems, Fine and Performing arts, Vocational skills, etc, which have IKS content. As per the guidelines, the courses must have a clear mapping of the traditional subjects in IKS with the modern subjects such as Chemistry, Mathematics, Physics, Agriculture, etc.

The Bhagavad Gita:-

The **Bhagavad gita** Sanskrit: भगवद्गीता, romanized : *bhagavad-gītā*, lit. 'God's Song'),^[a] often referred to as the **Gita** (IAST: *gītā*), is a 700-verse Hindu scripture, which is

part of the epic *Mahabharata*. The Bhagavad Gita is dated to the second half of the first millennium BCE. Even though Hinduism includes several denominations, the Gita holds a unique pan-Hindu influence as the most prominent sacred text. It has been said that if there is any one text that comes near to embodying the totality of Hindu thought, it is the Bhagavad Gita.

The Bhagavad Gita is set in a narrative framework of dialogue between the Pandava prince Arjuna and his charioteer guide Krishna, an avatar of Vishnu. At the start of the Kurukshetra War between the Pandavas and the Kauravas, Arjuna despairs thinking about the violence and death the war will cause in the battle against his kin and becomes emotionally preoccupied with a dilemma. Wondering if he should renounce the war, Arjuna seeks the counsel of Krishna, whose answers and discourse constitute the text. Krishna counsels Arjuna to "fulfil his Kshatriya (warrior) duty" for the upholding of dharma. The Krishna–Arjuna dialogue covers a broad range of spiritual topics, touching upon moral and ethical dilemmas, and philosophical issues that go far beyond the war that Arjuna faces. The setting of the text in a battlefield has been interpreted as an allegory for the struggles and vagaries of human life.

Summarizing the Upanishadic conceptions of God, the Gita posits the existence of an individual self (Atman) and the supreme self (Brahman) within each being. The dialogue between the prince and his charioteer has been interpreted as a metaphor for an immortal dialogue between the human self and God. Commentators of Vedanta read varying notions in the Bhagavad Gita about the relationship between the Atman (individual Self) and Brahman (supreme Self); Advaita Vedanta affirms on the non-duality of Atman and Brahman, whereas Vishishtadvaita asserts qualified non-dualism with Atman and Brahman being related but different in certain aspects, while Dvaita Vedanta declares the complete duality of Atman and Brahman.

As per traditional accounts of Hindu mythology, the Gita was written by Ganesha, as told to him by the sage Veda Vyasa. The Gita forms the chapters 23–40 in book 6 of the Mahabharata called the Bhishma Parva, and forms a central text in the Vaishnava Hindu tradition and prasthanatrayi. The Gita covers the core beliefs of Hinduism; including difference between the transient body and the eternal self, the transmigration of self, actuality of gunas, necessity of doing one's duties, and the importance of detachment. The text analyses the paths of Jñāna, Bhakti, Karma, and Rājayogas for the purpose of Moksha (spiritual liberation) and asserts that the path of Bhakti (devotion) is the foremost and easiest of all numerous classical and modern thinkers have written commentaries on the Gita with differing views on its essence and essentials.

Sholka's From Bhagvad Gita:-

- 1) कर्मण्येवाधिकारस्ते मा फलेषु कदाचन ।
मा कर्मफलहेतुर्भूर्मा ते सङ्गोऽस्त्वकर्मणि ॥
(द्वितीय अध्याय, श्लोक 47)

अर्थ : कर्म पर ही तुम्हारा अधिकार है, कर्म के फलों में कभी नहीं... इसलिए कर्म को फल के लिए मत करो। कर्तव्य-कर्म करने में ही तेरा अधिकार है फलों में कभी नहीं । अतः तू कर्मफल का हेतु भी मत बन और तेरी अकर्मण्यता में भी आसक्ति नहो ।

Lesson for an Investor:-

Before making an Investment, investor should not focus on the returns but he has to do the Fundamental Analysis of the company in which he wants to make an investment these includes Management Composition, their policies, experience, expertise etc.

Along with Fundamental Analysis it is also necessary to make financial analysis like Profit Analysis, Balance Sheet Analysis, Turnover Ratios, Current Ratios, Debt Equity Ratios, and Financial Ratios etc. to arrive at more scientific decision. Technical and Operational Analysis will also help in making more informed decisions so that the expected results can be achieved.

, Financial Analysis, Technical Analysis, Operational Analysis,

2) मात्रास्पर्शास्तुकौन्तेयशीतोष्णसुखदुःखदाः

आगमापायिनोऽनित्यास्तांस्तितिक्षस्व भारत ।।14।।

इन्द्रिय और उसके विषयों के संपर्क से उत्पन्न सुख तथा दुःख का अनुभव क्षण भंगुर है । ये स्थायी न हो कर सर्दी तथा गर्मी की ऋतुओं के आने-जाने के समान हैं । हे भरतवंशी! मनुष्य को चाहिए कि वह विचलित हुए बिना उनको सहन करना सीखे ।

Lesson for an Investor :

There is nothing permanent in the life. Happiness or Sorrow will come and go. Like that the gain or loss in an investment is also not permanent. This principle has to keep in the mind while making an investment. Gain or Loss is an inherent in the investment. Market will go up or down. There is always either a bull or bearish in the stock market. If this keeps in the mind then investor need will not bother about the ups and downs of the market. This requires patience, only patience will result into expected or more gains in the long run so investor should not be panic with the change in market. Always keep in mind that the investments should not be made out of emotions but it has to be practical approach.

3) नात्यश्रतस्तु योगोऽस्ति न चैकान्तमनश्रतः ।

न चातिस्वप्नशीलस्य जाग्रतो नैव चार्जुन ।।16।।

यह योग न तो बहुत खाने वाले का, न बिल्कुल न खाने वाले का, न बहुत शयन करने के स्वभाव वाले का और न सदा जागने वाले का ही सिद्ध होता है ।।

Lesson for an Investor :

If someone consumes too much food or sleeps more than it is harmful to the health. Like that too much investment in any one stock or scrip will result into loss of an investment. The principle which we can draw from the above shloka is that there should be diversification of investment. “Don’t Keep all the Eggs in one basket.” An investor should be alert all the time

regarding changes happening in the stock and take appropriate steps whenever required to minimize the loss and maximize the returns. Investor should have Investment Portfolio combination of different avenues of investment like shares, debentures, mutual funds, fixed deposits, post office schemes etc.

4) इति ते ज्ञानमाख्यातं गुह्याद्गुह्यतरं मया।

विमृश्यैतदशेषेण यथेच्छसि तथा कुरु ॥63॥

"मैंने तुम्हें जो उपदेश दिया वह न तो दोष पूर्ण है और न ही बाध्यकर है। इसे ध्यान से सुनो, इस पर चिंतन करो और फिर चाहे जो तुम्हारी इच्छा हो वैसा करो।" यह भगवान द्वारा जीवात्मा को प्रदान किए गए उपलब्ध विकल्पों में से चयन करने की स्वतंत्र इच्छा है।

Lesson for an Investor :

From the above "shloka" one can understand that though you have gained knowledge from the others still decision you have to take on your own. An investor has to analyze the information or knowledge on his own and expected to take the rational decision. Decision is yours own. You cannot held others responsible for success or failure in your investment decisions. It is expected that one should not keep blind trust on others opinion or views or suggestions. Self-Study is an important tool to make a wise investment.

➤ CONCLUSION -

From the above discussion one can conclude that if someone follows the Bhagvad Gita in its true sense then he or she will not make a wrong decision while making an investment in the share market. To earn a profit or gain from the Share Market an investor must have a detailed study, analysis, patience, diversification of investments. This is what we can gained from the Bhagvad Gita.

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THE FINTECH HUB : TECHNOLOGICAL TRANSFORMATION OF FINANCIAL SECTOR IN PUNE

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➤ ABSTRACT :

Pune, a rapidly growing metropolitan area in India, has emerged as a significant hub for technological development, particularly in the banking and finance sector. This research paper explores the transformative impact of technological advancements on the banking and financial landscape of Pune. It examines the adoption of fintech innovations, including digital payments, mobile banking, blockchain technology, and AI-driven financial services, within the city's financial ecosystem. The paper analyzes the factors driving this technological shift, such as a strong talent pool, a thriving startup culture, and supportive government initiatives. It also investigates the challenges and opportunities associated with this transformation, including cybersecurity risks, regulatory hurdles, and the need for financial literacy. Utilizing a mixed-methods approach, including surveys, interviews with industry experts, and analysis of market data, this paper aims to provide a comprehensive understanding of the technological evolution of banking and finance in Pune. The findings highlight the city's potential to become a leading fintech center in India, while also emphasizing the importance of addressing the challenges associated with rapid technological adoption. This research contributes to the understanding of regional fintech development and provides insights for policymakers, financial institutions, and technology companies operating in Pune.

Keywords : Fintech, Pune, Digital Banking, Financial Technology, Technological Development, Digital Payments, Mobile Banking, Blockchain, Artificial Intelligence, Financial Inclusion, Cybersecurity.

➤ INTRODUCTION :

Pune, known as the "Oxford of the East" and a burgeoning IT hub, has witnessed a remarkable transformation in its banking and finance sector, driven by rapid technological advancements. The city's robust IT infrastructure, coupled with a growing number of technology companies and a skilled workforce, has fostered a fertile ground for the development and adoption of fintech innovations. Digital payments, mobile banking, and AI-powered financial services are increasingly becoming integral parts of the city's financial ecosystem. This technological shift is reshaping the way financial services are delivered and consumed in Pune, offering greater convenience, efficiency, and accessibility. However, it also presents challenges related to cybersecurity, regulatory compliance, and the need to bridge the digital divide. This paper aims to explore the multifaceted impact of technological

developments on banking and finance in Pune, examining the drivers, challenges, and opportunities associated with this transformation.

➤ **OBJECTIVES :**

1. To analyze the adoption of fintech innovations in the banking and finance sector of Pune.
2. To identify the factors driving technological developments in Pune's financial ecosystem.
3. To assess the impact of these developments on financial inclusion and customer experience.
4. To examine the challenges and opportunities associated with the technological transformation of banking and finance in Pune.

➤ **RESEARCH METHODOLOGY :**

This research employs a mixed-methods approach, combining qualitative and quantitative techniques.

- Surveys : Surveys was conducted among consumers and financial service providers in Pune to gather data on the adoption and usage of fintech innovations.
- Interviews : Semi-structured interviews was conducted with industry experts, including fintech entrepreneurs, bankers, regulators, and technology professionals, to gain insights into the drivers and challenges of technological development.
- Market Data Analysis : Market data, including reports from industry associations, research firms, and government agencies, was analyzed to assess the growth and impact of fintech in Pune.
- Case Studies : Case studies of successful fintech companies and initiatives in Pune is examined to identify best practices and lessons learned.
- Document Analysis : Analysis of relevant government policies, regulatory guidelines, and industry reports is conducted.

➤ **REVIEW OF LITERATURE :**

- Existing literature highlights the growing importance of fintech in emerging economies, with a focus on its potential to enhance financial inclusion and drive economic growth. Studies have examined the factors driving fintech adoption, including technological infrastructure, regulatory frameworks, and consumer behavior (Arner, Barberis, & Buckley, 2015).
- Research has also explored the challenges associated with fintech development, such as cybersecurity risks, regulatory uncertainty, and the need for financial literacy (Zalan & Toumi, 2017).
- In the context of India, studies have focused on the impact of initiatives like demonetization and the Unified Payments Interface (UPI) on the adoption of digital payments (Agarwal & Goel, 2020).
- Regional studies have also emerged, focusing on specific cities and their fintech ecosystems, highlighting the importance of local factors in shaping technological development.

➤ **Fintech Innovations in Pune :**

- **Digital Payments :** The widespread adoption of UPI, mobile wallets, and other digital payment platforms.
- **Mobile Banking :** The increasing use of mobile banking apps for transactions, account management, and other financial services.
- **Blockchain Technology :** The exploration and adoption of blockchain for applications such as secure transactions, supply chain finance, and digital identity management.
- **AI-Driven Financial Services :** The use of AI for fraud detection, risk management, customer service, and personalized financial advice.
- **Lending Platforms :** The emergence of peer-to-peer lending and digital lending platforms.

➤ **Drivers of Technological Development :**

- **Strong Talent Pool :** Pune's reputation as an educational hub and its large pool of skilled IT professionals.
- **Thriving Startup Culture :** The presence of numerous incubators, accelerators, and venture capital firms supporting fintech startups.
- **Supportive Government Initiatives :** Government policies promoting digital payments, financial inclusion, and technology adoption.
- **Robust IT Infrastructure :** Pune's well-developed IT infrastructure, including high-speed internet and mobile connectivity.
- **Growing Consumer Demand :** Increasing consumer demand for convenient and efficient financial services.

➤ **Impact on Financial Inclusion and Customer Experience :**

- Increased access to financial services for underserved populations.
- Enhanced convenience and efficiency for customers.
- Improved customer experience through personalized services and seamless transactions.
- Increased transparency and reduced costs.

➤ **CHALLENGES AND OPPORTUNITIES :**

- **Cybersecurity Risks :** The increasing threat of cyberattacks and data breaches.
- **Regulatory Hurdles :** The need for clear and consistent regulatory frameworks.
- **Financial Literacy :** The need to improve financial literacy and digital skills among consumers.
- **Bridging the Digital Divide :** Ensuring equitable access to digital financial services for all segments of the population.
- **Opportunity for Growth :** Pune's position as a fintech hub can attract investment and create jobs.

➤ CONCLUSION :

Pune is rapidly emerging as a significant fintech hub in India, driven by its strong technological infrastructure, skilled workforce, and supportive ecosystem. The adoption of fintech innovations is transforming the banking and finance sector in the city, enhancing financial inclusion and customer experience. However, addressing the challenges related to cyber security, regulation, and financial literacy is crucial for ensuring sustainable and inclusive fintech development. By fostering collaboration among stakeholders and implementing appropriate policies, Pune can solidify its position as a leading center for fintech innovation in India.

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EMERGING TRENDS IN INDIAN PUBLIC POLICY AFTER GLOBALIZATION

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➤ **ABSTRACT**

Globalization has significantly transformed India's foreign policy and diplomatic engagements across various dimensions. This paper offers a comprehensive analysis of the impacts of globalization on India's public policy and diplomatic landscape up to 2020. Examining economic, political, cultural, and social facets, it delineates the nuanced changes brought about by globalization. Economically, India witnessed exponential growth in trade and GDP, soaring from \$18 billion to \$312 billion in exports and from \$326 billion to \$1.87 trillion in GDP between 1990 and 2013. India's exports increased by \$104 billion from 2018 to 2023. However, challenges emerged, including vulnerability to global financial fluctuations and asymmetric trade agreements. Strategically, India diversified alliances, engaging in international forums, and forging strategic partnerships. Culturally, globalization acted as a conduit for India's soft power, amplifying the global reach of Bollywood, cuisine, and the Indian diaspora. Challenges arose concerning agricultural sustainability and balancing cultural exchanges with national interests. Despite challenges, globalization presented opportunities, fostering technological advancements, and enhancing India's global influence.

The paper concludes that while globalization propelled India into the global arena, it necessitated adaptive policies to balance national interests with global responsibilities. Understanding these multifaceted impacts is crucial in formulating diplomatic strategies that sustain India's identity in an interconnected world.

Keywords : Globalization, India, Public Policy, Diplomacy, Economic Impact, Strategic Shifts, Cultural Influence, Challenges, Opportunities, Soft Power

Introduction

Globalization has been a pivotal force reshaping the contours of international relations, profoundly influencing India's foreign policy and diplomatic strategies. Defined as the increased interconnectedness and interdependence of nations economically, politically, and culturally (Kegley & Blanton, 2011), globalization has significantly impacted India's approach to engaging with the world. Economically, India witnessed a remarkable transformation post-liberalization in 1991. Between 1990 and 2013, India's GDP soared from \$326 billion to \$1.87 trillion, marking an unprecedented growth rate averaging around 7% annually (World Bank, 2014), 7.0% in 2022-23 and 8.2% 2023-24 (Economic survey-2024). This surge propelled India onto the global

economic stage, fostering trade and investment ties across continents. Notably, India's exports surged from \$18 billion in 1990 to \$312 billion in 2013, reflecting a substantial integration into global markets (Trading Economics, 2014).

In the realm of diplomacy, India underwent a strategic shift, navigating a complex web of alliances and partnerships. The 1990s witnessed a pronounced diversification of diplomatic engagements beyond traditional allies, as India pursued multifaceted relationships with emerging powers such as Brazil, South Africa, and increasingly, China (Pant, 2012). This diversification aligns with India's endeavor to balance its regional aspirations with global responsibilities.

Culturally, India's soft power gained momentum globally. Its vibrant cultural exports, including Bollywood films, yoga, and cuisine, amplified India's influence beyond geopolitical realms. For instance, the number of registered yoga practitioners globally rose from 20 million in 2012 to 36 million in 2014 (Ministry of AYUSH, Government of India, 2014). About 300 million people practice yoga regularly worldwide in 2023, according to Yoga Alliance. Under scoring the expanding footprint of Indian culture worldwide.

As India navigated this transformative period, globalization also presented challenges. Increased economic interdependence exposed vulnerabilities, such as the impact of global financial crises on India's economy. Additionally, cultural globalization sparked debates on cultural homogenization versus preserving indigenous identities (Singh, 2013).

This period was characterized by India's proactive stance in adapting to the changing global landscape while striving to safeguard its national interests and cultural distinctiveness in an increasingly interconnected world.

➤ **RESEARCH OBJECTIVES :**

This study aims to delve into the multifaceted impacts of globalization on India's foreign policy and diplomacy, exploring specific dimensions to unveil the nuanced transformations within the given period up to 2023.

(A) Analyzing the Evolution of India's Foreign Policy in the Globalization Era : India's foreign policy underwent a notable evolution as it adapted to the dynamics of globalization. Historically rooted in non-alignment, the post-Cold War era demanded a reorientation. India sought to redefine its diplomatic strategy, balancing its traditional principles with a more pragmatic approach to engage with a rapidly changing world order (Pant, 2012). By 2013, India's foreign policy reflected a nuanced blend of realism, as seen in its strategic partnerships with the United States and its active involvement in regional groupings like BRICS (Pant, 2013).

(B) Assessing Economic Impacts of Globalization on India's Foreign Relations : Economically, globalization catalysed India's integration into the world economy. Between 1990 and 2013, India's trade-to-GDP ratio surged from 15% to 49%, signifying an unprecedented level of economic interdependence (World Bank, 2014). This heightened integration influenced India's foreign relations, with a shift towards prioritizing economic partnerships, evident in the signing of multiple Free Trade Agreements (FTAs) and Bilateral Investment Treaties (BITs) (Sahoo, 2011)

(C) Exploring Cultural and Social Impacts of Globalization on India's Diplomacy:

Culturally, globalization served as a conduit for India's soft power projection. The Indian diaspora, expanding from approximately 20 million in 1990 to 25 million in 2013 (Indian Ministry of External Affairs, 2013), played a pivotal role in enhancing India's cultural diplomacy. Additionally, India's cultural exports, including films and cuisine, saw a global upsurge, fostering cross-cultural interactions and influencing perceptions about India on the global stage (Bhattacharya, 2012).

By addressing these objectives, this research endeavors to provide a comprehensive understanding of how globalization intricately shaped India's foreign policy and diplomatic maneuvers up to 2013, presenting a holistic picture of the nation's positioning in the global arena.

➤ **HISTORICAL CONTEXT :**

Understanding India's foreign policy and diplomatic shifts in the era of globalization necessitates a comprehensive analysis of its historical trajectory, pre- and post-1991.

India's Foreign Policy Pre-Globalization Era : Prior to the advent of globalization, India's foreign policy was primarily shaped by the principles of non-alignment, emphasizing autonomy, and maintaining equidistance from power blocs during the Cold War (Pant, 2009). This policy served as the cornerstone of India's diplomatic engagements, fostering relationships with diverse nations across ideological spectra. The collapse of the Soviet Union in 1991 catalyzed a seismic shift, compelling India to recalibrate its foreign policy in a rapidly evolving global landscape (Ganguly, 2003).

Key Globalization Milestones in India : The transformative year of 1991 marked India's shift towards economic liberalization, initiating a series of reforms aimed at integrating the Indian economy into the global market. The liberalization policies dismantled trade barriers, allowing for increased foreign investment and participation in the global economy (Basu, 2011). Notably, between 1991 and 2013, India signed over 80 Bilateral Investment Promotion and Protection Agreements (BIPAs), fostering a conducive environment for foreign investors (UNCTAD, 2014).

The impact of globalization on India's economy during this period was profound. Between 1990 and 2013, India's GDP grew from \$326 billion to \$1.87 trillion, marking an exponential rise (World Bank, 2014). This growth was accompanied by a notable decline in poverty rates, dropping from 45% in 1994 to 22% in 2012 (World Bank, 2013). However, challenges persisted, including income inequality and regional disparities, warranting a nuanced examination of the social implications of economic reforms (Rajan, 2012).

Culturally, India's global presence expanded significantly. The proliferation of Indian cinema worldwide, especially Bollywood, served as a cultural ambassador, transcending geographical boundaries, and influencing global popular culture (Kavoori & Punathambekar, 2008). Furthermore, India's soft power gained traction through the internationalization of yoga, recognized globally for its holistic benefits (Ministry of AYUSH, Government of India, 2014).

This historical contextualization provides a backdrop to the intricate interplay between globalization and India's foreign policy, setting the stage for a nuanced analysis of its multifaceted impacts up to the year 2013.

Economic Impact :

Globalization has intricately woven India into the fabric of the world economy, manifesting in profound economic transformations and reshaping the nation's approach to foreign relations.

Trade Trends and Statistics Pre-and Post-Globalization. India's integration into the global economy experienced a significant surge post-liberalization in 1991. From 1990 to 2013, India's total merchandise trade increased from \$60 billion to \$794 billion (World Bank, 2014). This surge in trade was accompanied by a notable diversification of India's trade partners, with traditional partners like the United States and the European Union being joined by emerging markets in Asia and Africa (Acharya, 2011).

Moreover, India's exports witnessed exponential growth during this period. In 1990, India's exports stood at \$18 billion, and by 2013, it soared to \$312 billion, reflecting a manifold increase and highlighting India's enhanced participation in global trade (Trading Economics, 2014). Simultaneously, imports surged, reflecting India's increasing reliance on foreign markets to meet domestic demands, with imports reaching \$480 billion in 2013 (Trading Economics, 2014).

Foreign Direct Investment (FDI) Inflows and Outflows : Globalization opened avenues for Foreign Direct Investment (FDI), playing a pivotal role in India's economic growth. Between 1991 and 2013, India witnessed a substantial rise in FDI inflows, reaching approximately \$24 billion by 2013 (UNCTAD, 2014). Key sectors attracting FDI included telecommunications, services, and pharmaceuticals (Chakrabarti, 2001). Conversely, India's outward FDI also surged during this period, reaching \$16 billion in 2013, signifying India's emergence as an outward investor (UNCTAD, 2014).

Case Studies : Industries Affected by Globalization in India :

The impact of globalization on specific industries in India varied. The Information Technology (IT) sector emerged as a frontrunner, leveraging globalization to establish India as a global IT hub. Between 1990 and 2013, India's IT exports surged from \$100 million to \$86 billion, reflecting a meteoric. Rise (NASSCOM, 2014). Conversely, sectors such as agriculture faced challenges due to increased competition from global markets, highlighting the nuanced impacts of globalization on different industries within India (Sharma, 2012). The economic impact of globalization on India's foreign policy and diplomatic engagements is evident through the substantial transformations in trade patterns, FDI inflows and outflows, and the varying impacts on different sectors of the economy.

Political and Strategic Changes : Globalization's impact on India's foreign policy extends beyond economics, instigating significant political and strategic recalibrations in its diplomatic engagements.

India's Role in International Organizations : The era of globalization witnessed India's proactive involvement in various international organizations, amplifying its global influence. By 2013, India held a non-permanent seat on the United Nations Security Council six times, showcasing its commitment to global peace and security (Indian Ministry of External Affairs, 2013). Additionally, India's active participation in forums like BRICS and G20 epitomized its aspiration for a reformed global order (Pant, 2013).

Shifts in Diplomatic Alliances and Partnerships : India's diplomatic landscape underwent a noticeable shift, marked by a diversification of alliances and partnerships. While traditional ties with countries like Russia and France persisted, India forged robust strategic partnerships with the United States. The Indo-US nuclear deal in 2008 epitomized this strategic realignment, signaling a new phase in bilateral relations (Tellis, 2012). Moreover, India's 'Look East' policy morphed into the 'Act East' policy, emphasizing deeper engagements with Southeast Asian nations (Pant, 2013). The burgeoning relationship with ASEAN countries reflected India's intent to expand its regional foot print and leverage economic opportunities in the dynamic East Asian region.

Defense and Security Policies : Globalization necessitated recalibrations in India's defense and security policies. Increased economic interdependence underscored the significance of securing sea routes, prompting India to bolster its naval capabilities and engage in maritime cooperation with countries like the United States and Japan (Rajagopalan, 2012). Furthermore, non-traditional security threats gained prominence, prompting India to enhance cooperation on issues like counterterrorism and cybersecurity. The establishment of the National Security Council Secretariat in 1999 aimed at addressing these emerging challenges and fostering a proactive security posture (Sinha, 2013). These strategic shifts underscore how globalization influenced India's foreign policy, prompting a multifaceted engagement with various countries and organizations to safeguard its national interests and navigate the evolving geopolitical landscape.

Cultural and Social Implications : Globalization has acted as a catalyst for the dissemination of Indian culture and the reshaping of societal norms, exerting a profound influence on India's diplomacy and soft power projection. **Influence of Globalization on Indian Culture and Identity :** The proliferation of globalization facilitated the global reach of Indian cultural elements, reinforcing India's soft power. Bollywood, India's prolific film industry, expanded its global footprint, with overseas box office revenues growing from \$300 million in 2006 to \$700 million in 2013 (KPMG, 2014). This cultural export not only contributed to India's economy but also played a significant role in shaping global perceptions about Indian culture and traditions. Moreover, the internationalization of Indian cuisine, marked by the global popularity of dishes like curry and biryani, reflected the fusion of culinary cultures and enhanced India's cultural influence worldwide (Teli, 2012).

Diaspora and Soft Power : The Indian diaspora, a crucial component of India's soft power, expanded its presence globally. By 2013, the Indian diaspora reached approximately 25 million, residing in various parts of the world and acting as cultural ambassadors (Indian Ministry of External Affairs, 2013). Their contributions to various fields, including technology, science, and arts, further bolstered India's image abroad, enhancing bilateral relations and fostering economic ties (Bhagwati & Panagariya, 2013).

Educational and Technological Exchanges : Globalization facilitated educational and technological exchanges, strengthening India's soft power. Indian-origin faculty and students in foreign universities contributed significantly to academic collaborations, promoting Indian perspectives in global discourses (Rajagopal, 2011). Additionally, India's prowess in the IT sector enabled technological collaborations, positioning the country as a hub for innovation and technological advancements (NASSCOM, 2014). The intertwining of globalization and

Indian culture led to a dynamic exchange of ideas, fostering cross-cultural understanding and positioning India favorably on the global stage, enhancing its diplomatic engagements and soft power influence.

➤ **CHALLENGES AND OPPORTUNITIES**

The era of globalization brought for the plethora of challenges and opportunities for India's foreign policy and diplomatic maneuvers, necessitating delicate balance between national interests and global responsibilities.

Analyzing Challenges Faced by India's Foreign Policy due to Globalization:

One significant challenge emanating from globalization was the increased susceptibility of India's economy to global financial fluctuations. The 2008 global financial crisis, for instance, exposed vulnerabilities in India's financial system, prompting concerns about economic stability and growth (Acharya, 2010). Additionally, asymmetric trade agreements and tariff barriers in global markets posed challenges for India's trade expansion efforts, hindering access to certain markets (Bhagwati & Panagariya, 2013).

Opportunities Created for India in the Global Arena: Amidst challenges, globalization presented India with unprecedented opportunities. The surge in global connectivity facilitated by technological advancements and enhanced communication platforms offered India a platform to assert its influence on global issues (Pant, 2012). India's emergence as a global IT power house and a hub for innovation in science and technology positioned the nation favourably for technological collaborations and economic partnerships (NASSCOM, 2014). Furthermore, globalization provided India with a stage to amplify its voice on global platforms, advocating for reforms in international institutions like the United Nations and the World Trade Organization to better represent the interests of developing economies (Pant, 2013).

The challenge for India's foreign policy lay in balancing its national interests with its global responsibilities. Striking this delicate equilibrium involved navigating geopolitical complexities, prioritizing economic growth while safeguarding national sovereignty, and advocating for inclusivity in global governance structures (Pant, 2013). Navigating through these challenges while capitalizing on the opportunities presented by globalization became the cornerstone of India's foreign policy and diplomatic strategies, reflecting the nation's aspiration for a more equitable and inclusive global order.

Case Studies or Examples :

Examining specific case studies offers a nuanced understanding of how globalization has influenced India's foreign policy and diplomatic engagements in diverse sectors.

Case Study 1 : Impact of Globalization on Indian Agriculture:

Globalization posed challenges to India's agricultural sector. Increased competition from subsidized agricultural products in the global market impacted Indian farmers, leading to concerns about livelihood security (Saini & Saini, 2011). Furthermore, the shift towards cash crops for exports to meet global demands altered domestic agricultural practices, raising questions about food security and sustainability (Kumar & Raju, 2013). This case underscores the complex interplay between globalization, agricultural practices, and the livelihoods of millions of farmers in India.

Case Study 2 : Cultural Exchanges and Diplomatic Relations with Specific Countries

India's cultural diplomacy, exemplified by cultural exchanges with countries like Japan, has fostered stronger diplomatic ties. The Indo-Japan Global Partnership initiated in 2006 aimed at leveraging cultural synergies, strengthening people-to-people contacts, and enhancing bilateral relations (Indian Ministry of External Affairs, 2013). This case illustrates how cultural diplomacy facilitated by globalization serves as a diplomatic tool to forge stronger ties between nations. These case studies exemplify the multifaceted impacts of globalization on various facets of India's foreign policy and diplomacy, highlighting the need for tailored strategies to navigate the challenges and harness the opportunities presented by a globalized world.

➤ CONCLUSION

The impact of globalization on India's foreign policy and diplomacy has been profound, ushering in a new era of strategic recalibrations and multifaceted transformations across economic, political, cultural, and social domains. Economically, India's integration into the global economy surged, with trade expanding significantly. Between 1990 and 2013, India's exports grew from \$18 billion to \$312 billion, and its GDP soared from \$326 billion to \$1.87 trillion (World Bank, 2014; Trading Economics, 2014). Simultaneously, challenges such as vulnerability to global financial fluctuations surfaced, demanding robust policy responses. Strategically, India diversified its alliances, engaging with traditional partners and forging new strategic partnerships. The nation actively participated in international organizations, advocating for a reformed global order, and addressing emerging security challenges (Pant, 2013). Culturally, globalization acted as a conduit for India's soft power, fostering global appreciation for Indian cinema, cuisine, and cultural practices. The Indian diaspora expanded its influence, contributing significantly to India's image as a global player (Indian Ministry of External Affairs, 2013). However, challenges emerged, including concerns about the impact on traditional sectors like agriculture, the need for a balanced approach to cultural exchanges, and the delicate balance between national interests and global responsibilities (Kumar & Raju, 2013).

In conclusion, the era of globalization significantly reshaped India's foreign policy and diplomatic maneuvers. As India navigated the complexities of a globalized world, it leveraged opportunities while confronting challenges, highlighting the necessity for adaptive policies that safeguarded national interests, enhanced global engagements, and sustained India's identity in an interconnected world.

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THE GENIUS STRATEGY OF TATA MOTORS IN INDIA – RACING AHEAD OF HYUNDAI & SUZUKI

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➤ ABSTRACT :

Tata Motors had been a struggling company in the Indian auto market for 15 long years. This case study examines Tata Motors' strategic transformation through platform-sharing initiatives and entry into the electric vehicle (EV) market due to which, Tata Motors team has achieved something absolutely extraordinary and it increased their market share to 12.14% in FY22 from just 4.6% in 2016. Facing intense competition and financial challenges in the early 2010s, Tata Motors adopted a comprehensive restructuring plan to optimize vehicle production, reduce costs, and improve operational efficiency. A pivotal aspect of this strategy was the implementation of the Omega and Alpha modular platforms, which enabled the company to manufacture diverse vehicle models using shared components. This approach reduced production complexity, lowered costs, and accelerated the product development cycle.

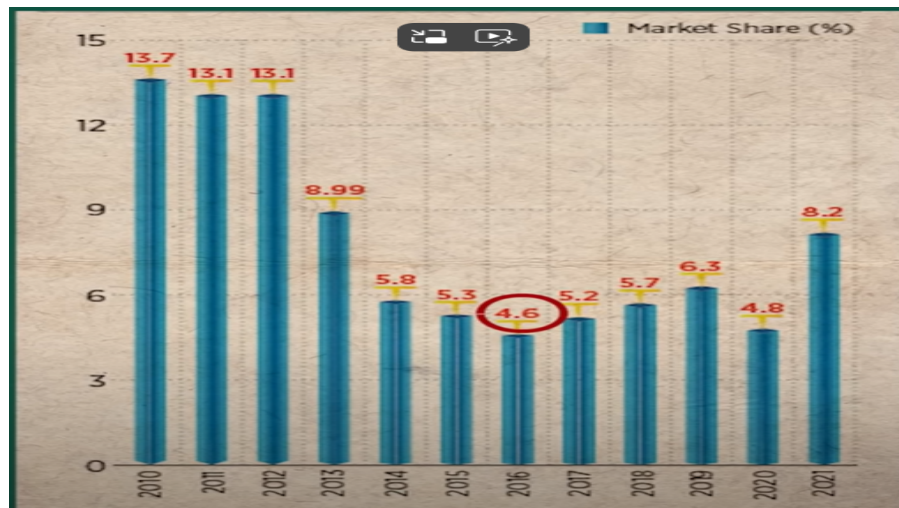
Simultaneously, Tata Motors capitalized on the growing demand for sustainable mobility by launching a robust electric vehicle portfolio. Leveraging its modular platforms, the company introduced electric versions of popular models such as the Nexon EV. Tata Motors' investments in research and development, combined with partnerships with its seven Tata group companies for battery technology and government-backed incentives under the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) scheme, positioned the company as a leader in India's EV market.

Key Words : Strategic Transformation, EV Vehicles, Platform sharing, Tata Group success, cost reduction, improved profitability.

➤ INTRODUCTION :

Tata Motors, a flagship company of the Tata Group, was facing a downturn in the Indian market as of FY16, holding only a 4.6% market share. Projects such as the Indica, Safari, and Sumo failed to captivate the new generation of consumers. This placed Tata Motors in an unenviable position, overshadowed by rivals like Hyundai and Suzuki. But within the next 7 years the Tata Motors team has achieved something absolutely extraordinary; by FY23, Tata Motors reported its highest-ever annual sales of 3.7 lakh units, reflecting a 67% increase from the previous fiscal year. The current market share of Tata Motors in FY 24 is 14.3% in

Passenger car segment and 88% market share in Electric car segment.



HERE IS A LIST OF TOP 10 CAR COMPANIES IN THE FINANCIAL YEAR 2021-22 -

Car makers	Sales FY 21-22	Market Share
Maruti Suzuki	1,33,158	43.65%
Hyundai	48,150	15.28%
Tata Motors	37,072	12.14%
Mahindra & Mahindra	22,678	7.46%
Kia Motor	18,787	6.12%
Toyota	12,760	4.06%
Renault	8,745	2.87%
Honda Cars India	8,609	2.81%
SAVVIP (Skoda + VW)	6,904	2.16%
MG		

Maruti Suzuki Sees Lowest Market Share In 8 Years, Tata Motors At 13 Years High

Source : The Economic Times

How did the Tata Motors team achieve such an extraordinary rise and what is their business strategy which is speeding them towards Market leadership?

Before we dive into this case study there are some dark truths about the automobile industry that you have to know-

Every time an automobile company comes with a new car the company's spends thousands of crores into setting up the factory floor buying the Machinery ordering the parts and deploying labour.

In spite of spending so much money even if they build the best car in the category there is absolutely no guarantee that it will sell well, because automobile companies are affected not just by the competition but also by geopolitics and government regulations.

For Car manufacturers, it took 50 long years into research and development to achieve extraordinary levels of efficiency with petrol car manufacturing. Suddenly the entire world is pushing them to a hydrogen format or an EV format which again needs a billion dollars and needs 50 long years to perfect so. Therefore, in the automobile business bankruptcy is always at your doorstep. If they want to succeed, they have to keep their manufacturing and fixed cost extremely low and at the same time keep the margins high without making the car

unaffordable for the customers. This basic statement can be said easily but it is an insanely difficult process in automobiles.

➤ **OBJECTIVES OF THE CASE STUDY:**

The primary objective of this case study is to analyze how Tata Motors' strategic use of common vehicle platforms and the customer centric product development contributed to its successful turn around in the Indian automotive market. The specific aims are to:

1. **Demonstrate the Impact of Platform Standardization:** Highlight how the adoption of shared platforms (ALFA and OMEGA) helped Tata Motors reduce production costs, optimize resources, and increase efficiency.
2. **Examine Strategic Advantages:** Explore the competitive advantages gained through cost-effective production, reduced development time, and enhanced flexibility.
3. **Showcase Operational Excellence:** Illustrate how the platform-based approach supported Tata Motors in minimizing waste and leveraging fixed costs to improve profitability.
4. **Extract Lessons for Industry:** Offer insights into how other automotive companies can adopt similar strategies to achieve growth and sustainability in a competitive market.

➤ **Challenges Faced by Tata Motors :**

1. Declining Market Share:

By FY16, Tata Motors' market share had dwindled to just 4.6%, a stark indicator of the company's diminishing presence in the Indian passenger vehicle market. This decline stemmed from several interconnected factors:

- **Increased Competition:** Rivals like Hyundai and Suzuki had firmly established themselves as industry leaders by continuously innovating and launching models tailored to consumer needs. Their dominance put pressure on Tata Motors to stay relevant.
- **Lack of Differentiation:** While competitors were focusing on unique features, fuel efficiency, and aesthetics, Tata Motors' offerings did not stand out significantly. This contributed to the gradual erosion of its market share.

Aging Product Line

Tata Motors struggled with a product line that was seen as outdated compared to those of its competitors:

- **Stagnant Models:** Vehicles such as the Tata Indica, Sumo, and Safari, which once held strong positions, were no longer appealing to the evolving tastes of consumers. These models were perceived as old-fashioned and lacked the modern features expected in newer vehicles.
- **Absence of Cutting- Edge Technology:** As rivals introduced vehicles with advanced infotainment systems, safety features, and fuel efficiency improvements, Tata Motors fell behind in technological updates. This contributed to consumer perceptions that the brand was not keeping pace with innovation.

- **Limited Appeal to Younger Demographics:** The younger customer base, which sought stylish, feature-rich vehicles, found Tata's older models less desirable compared to offerings from Hyundai and Suzuki, further narrowing its market segment.

1. Operational Inefficiencies

Tata Motors also faced significant operational challenges that limited its ability to compete effectively:

- **Production Bottlenecks:** The Company's manufacturing processes were fragmented, leading to inefficiencies. Separate production lines for different models meant higher costs and longer lead times, affecting the ability to scale production or react swiftly to market demands.
- **High Production Costs:** Without the benefits of shared components or platforms, Tata Motors incurred higher production expenses, impacting profit margins. The company's reliance on multiple, unique production setups created complex logistics, which increased the risk of delays and quality issues.
- **Slow Innovation Cycle:** Due to traditional, less agile research and development processes, Tata Motors was slow to bring new models to market. This lag allowed competitors to maintain their technological edge and attract customers with newer, more appealing models.

2. Brand Perception

Despite being part of the prestigious Tata Group, Tata Motors struggled to position itself as a desirable brand for passenger vehicles:

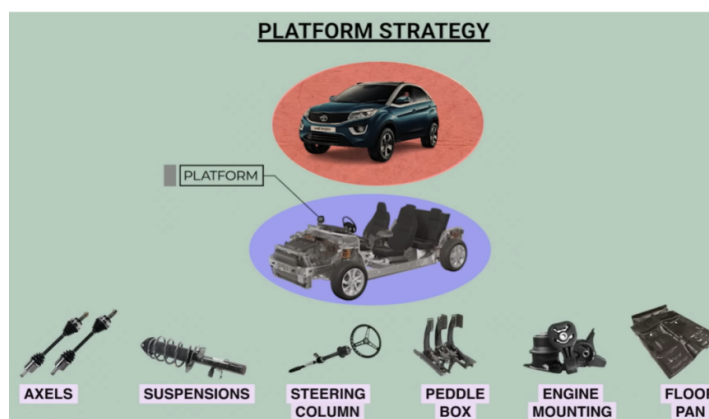
- **Reputation for Reliability but Limited Excitement:** While the Tata brand was respected for its reliability, it lacked the perception of modernity and innovation seen in competitors like Hyundai, which had built a reputation for both quality and cutting-edge features.
- **Outdated Image:** The company was viewed as producing practical but basic vehicles. Unlike competitors that cultivated brand images centered around stylish, high-performance cars, Tata Motors was perceived as utilitarian, which did not appeal to aspirational buyers.
- **Customer Loyalty Erosion:** With limited product refreshes and less excitement surrounding new releases, brand loyalty began to wane. Consumers who once relied on Tata vehicles started considering alternatives that offered more features and a modern driving experience.
- **Marketing and Outreach Limitations:** Competitors invested heavily in marketing campaigns that highlighted their strengths, such as advanced safety features and sleek designs. Tata Motors, on the other hand, had not yet adapted to the fast-changing expectations of the market, contributing to a stagnant image in the eyes of potential buyers.

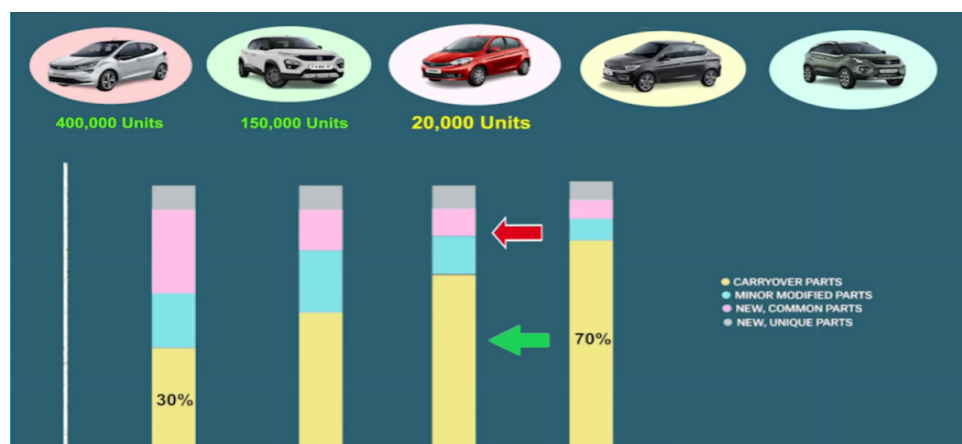
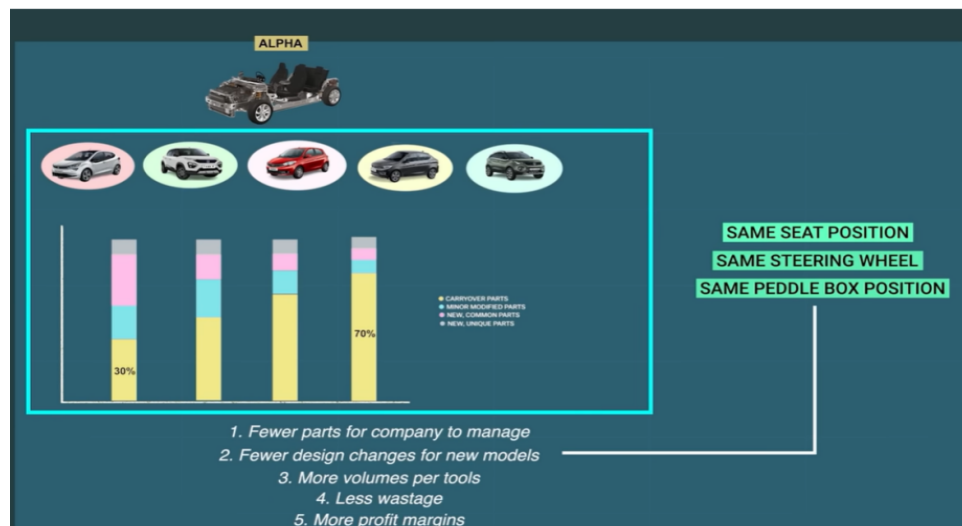
These challenges cumulatively put Tata Motors in a difficult position, with waning customer interest, outdated product lines, and operational issues preventing it from competing on equal footing with major automotive players like Hyundai and Suzuki. The shift toward using common size platforms later addressed many of these underlying issues and marked the beginning of Tata Motors' resurgence.

Strategic decisions by Tata Motors

Tata Motors' resurgence can be attributed to a series of bold strategies that focused on innovation, customer needs, and market trends:

- **New Product Development:** Tata Motors launched a line of new-generation vehicles like the Tata Nexon, Tata Altroz, and Tata Harrier, Tata Punch, which appealed to a younger demographic with contemporary design, advanced features, and competitive pricing.
- **Alpha Platform and Omega Platform:** Strategic use of only two platforms for all assembly of all types of Cars. In 2017 they had six platforms for just 10 products which meant that the number of carryover parts were less. Therefore, the cost of making the car was high and the wastage was also high, eventually the profit were less. So they've completely changed their approach and turned to just two platforms and just these two platforms are used to make eight to ten different cars in the next three years that is a drastic increase from 1.6 models per platform to four to five models per platform. These two platforms are the ALPHA platform which is meant for smaller cars and OMEGA platform which is derived from land Rovers D8 platform so OMEGA is meant for bigger vehicles. The platform sharing strategy used on the Alpha platform for Tata Altroz, will then be followed by a small SUV like Hornbill, then by the next generation of Tata Tiago followed by Tata Tigor and then by Nexon so when Tata Altroz is built on the alpha platform it has around 30 carrier parts but as the second product comes in the number of carry overs will increase and by the time the fourth product is launched in the market the carryover parts will be around 70 of the total parts. So these vehicles on the platform are expected to have the same seat position, same steering wheel and pedal box positions. This means fewer parts for the company to manage; fewer design changes to make for a new model launch, more volumes per tool and less wastage and most importantly more profit margins. For example if Altroz sells 400 000 units and Hornbill sells 150 000 units but Tiago ends up selling only 20 000 units, then the Tata will lose less money because they would not invest millions into a special platform and since Tiago will be built on the same alpha platform this model will have a lot of carrier parts and very less unique parts so even though the model fails the Tatas will save on both the initial platform cost and the unique parts cost. Eventually the carrier parts could be used for the next model this is how sharing a platform helps Tata motes to minimize the losses in case of a product failure in the market

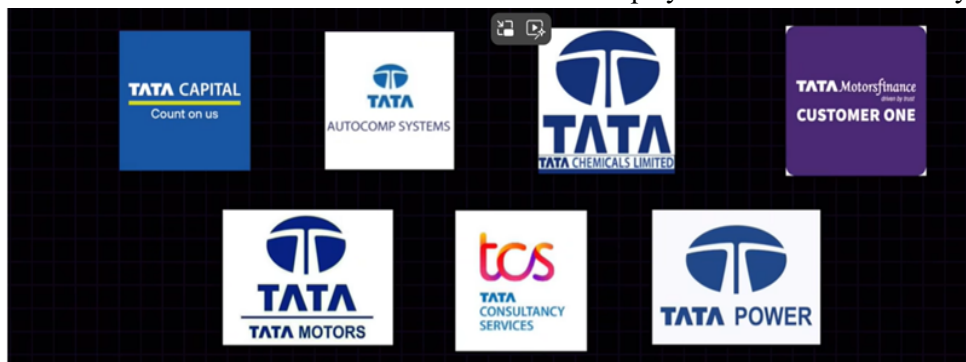




Due to this strategy, Tata motors operating profit per car rose to Rs.45,810 in the second Quarter, nearly double that of Maruti. Data compiled by the ETIG showed that- this was the first time in a decade that Tata motors made more money per car.

- Focus on Electric Vehicles (EVs):** Tata Motors anticipated the growth of the EV market early on, investing heavily in research and development. The launch of the Tata Nexon EV marked a significant milestone, making the company a leader in the Indian EV segment. This move aligned with global and domestic trends toward sustainable and eco-friendly transportation. Tata motors team just repurposed an unused shop floor without waiting for a fancy assembly line. Nexon's gasoline SUV bodies were wired and fitted with battery packs by hand to have the first mover advantage in the market and could easily test the acceptance of EVs in the Indian market. In those days, they made just eight SUVs per day. But now they making more than 100 Nexon cars so in the beginning, they actually turned a gasoline car into EV which was very easy but it's an extremely complex and critical task because had it been so easy every other automaker would have done. One fire incident and the entire segment will come crashing down.
- Strategic Partnerships and Alliances:** The support from the group companies of the tatas made it possible. The companies in Tata group- TCS aided Tata power in setting up

EV charging stations, because of which the project actually saw 300 charging stations joining the network within just 12 weeks. Similarly, Tata LXE partnered with Tata Motors in developing their unified connected vehicle platform. Tata capital and Tata Motors finance for vehicle finance and insurance and when it comes to infrastructure Tata power is already aiming to build 10,000 stations over the next 5 years and lastly while Tata chemicals makes Lithium-Ion cells Tata Autocomp systems assembles battery packs.



Outcomes of the strategy:

The results of these strategic initiatives were evident in FY23:

- **Record Sales:** Tata Motors achieved an all-time high of 3.7 lakh units sold, a 67% increase from the previous year. The current market share of Tata Motors is 14.3% in Passenger car segment and 88% market share in Electric car segment.
- **Leadership in EV Market:** Tata Motors now dominates the EV market in India, with its EV models contributing significantly to overall sales with 88% market share in Electric car segment.
- **Increase in Profit:** for the first time after a decade the profitability of Tata motors exceeded in FY23. Due to reduction in cost of production through optimum resource management, the per unit profit of Tata motors is more than per unit profit of Maruti Suzuki. Due to the support from the group of companies the quality was at the centre due to which Warranty costs fell from 1.14% of the revenue in FY16 to 0.9% in FY 21

Comparative Analysis of Competitors

- **Hyundai:** Known for its diverse product portfolio and customer-focused approach, Hyundai faced significant competition from Tata Motors' revamped line-up and strong EV push.
- **Maruti-Suzuki:** Dominating the market for decades with budget-friendly, fuel-efficient cars, Suzuki's traditional strategy met a challenge as consumers began seeking environmentally friendly and feature-rich vehicles, areas where Tata excelled.

Summary :

- **Anticipation of Market Trends:** By investing in EVs before competitors, Tata Motors positioned itself as a market leader in the electric vehicle sector.
- **Leveraging Synergies:** Tata Motors used the vast resources of the Tata Group to build an interconnected ecosystem supporting EVs.

- **Focused Product Strategy:** The company’s strategy to launch high-demand models with modern features and competitive pricing attracted a new customer base.

➤ **CONCLUSION**

The turnaround of Tata Motors is an exemplary case of strategic foresight, adaptability, and leveraging internal strengths to navigate industry challenges. Its approach, particularly in adopting EVs early and creating strong partnerships, allowed it to outpace established competitors like Hyundai and Suzuki. Tata Motors’ story serves as a benchmark for companies aiming to recover and thrive in competitive markets.

Discussion Questions

1. What are the key factors that led to Tata Motors’ successful turnaround?
2. How did Tata Motors' early investment in the EV segment impact its growth trajectory?
3. What lessons can other automotive companies learn from Tata Motors' strategic pivot?

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CLIMATE CHANGE AND AGRICULTURE BUSINESS IN MAHARASHTRA

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➤ ABSTRACT

The increasing rate of climate change is emerging as the biggest threat to the global agricultural sector. In Maharashtra, agriculture is still one of the important sectors of the economy. Its effects are being felt more intensely. The frequency of extreme events like temperature rise, irregular rainfall patterns, droughts, and floods is increasing, which is negatively affecting crop production, water resources, and soil health. As a result, impacts like decreased crop production, reduced water availability, soil erosion, etc. are visible, which is reducing farmers' income. To tackle these challenges, adaptation strategies like climate-smart farming practices, watershed development, water conservation, soil health management, and use of technology are being adopted. The central and state governments are also helping through schemes like the National Agricultural Mission, Prime Minister's Agriculture Irrigation Scheme, and Jal yukt Shivar Campaign. Collective action by farmers, scientists, policymakers, and entrepreneurs is crucial to face the growing threats of climate change.

Key words : climate change, adaptation, sustainability, food security, drought, irrigation, resilience, monsoon, diversification

➤ Introduction

The effects of climate change such as global warming, irregular rainfall patterns, droughts, floods, and other unexpected natural disasters are seriously affecting agriculture worldwide. In countries like India, where a large part of the economy depends on the agricultural sector, the effects of climate change are being felt more intensely. This paper reviews the impacts of climate change on agriculture in Maharashtra, and the various strategies farmers and agricultural professionals are using to deal with the challenges arising from it.

➤ Research Methodology

This study employs a comprehensive secondary data analysis approach to examine the relationship between climate change and agricultural business in Maharashtra. Data has been systematically collected from multiple authoritative sources including government publications, academic journals, research reports, and statistical databases maintained by the Maharashtra State Agricultural Department and the Indian Meteorological Department. .

➤ **Objectives of the Study :**

1. To analyze the impact of changing climate patterns on agricultural productivity and crop yields in Maharashtra
2. To evaluate existing adaptation strategies implemented by farmers and agribusinesses in response to climate variability
3. To assess the economic implications of climate change on agricultural value chains and market systems in the region.

➤ **Hypothesis :**

1. There is a significant negative correlation between increasing temperature variability and agricultural productivity in drought-prone regions of Maharashtra, with rainfed crops showing greater vulnerability than irrigated crops.
2. Farmers who have adopted climate-smart agricultural practices and diversified their crop selection demonstrate higher economic resilience to climate change compared to those maintaining traditional monocropping systems.
3. The implementation of Maharashtra government's watershed development programs has significantly improved agricultural water-use efficiency and reduced economic losses during drought periods in participating districts.

I) Causes of Climate Change

The main causes of climate change are: 1) Human activities 2) Increasing industrialization 3) Deforestation 4) Emissions of greenhouse gases due to transportation and energy production. Greenhouse gases like carbon dioxide, methane, and nitrous oxide get trapped in the atmosphere and increase the temperature of the Earth's surface. This is called the "Greenhouse Effect."

1. Evidence of Climate Change in Maharashtra

Clear signs of climate change have started appearing in Maharashtra over the past few decades. There has been an increase in the average temperature in the state, irregularity in rainfall patterns, and an increase in extreme weather events like droughts and floods.

2. Temperature Changes

In the last 50 years, the average temperature in Maharashtra has increased by 1 to 1.5 degrees Celsius. Summers are becoming more intense, and winter temperatures are also rising. In some parts of Vidarbha and Marathwada, summer temperatures reach up to 45 degrees Celsius, which is extremely harmful for crops and livestock.

3. Irregularity in Rainfall Patterns

Maharashtra is seeing significant irregularity in rainfall patterns. Some years bring excessive rainfall while others lead to drought-like conditions. While Mumbai and the Konkan coast experience heavy rainfall, Vidarbha and Marathwada may face drought conditions. The onset and end of the monsoon period are also changing, creating uncertainty for farmers regarding the timing of sowing crops.

4. Increasing Frequency of Extreme Weather Events

1. **Droughts:** Drought conditions frequently arise in Maharashtra, especially in the Marathwada and Vidarbha regions. In the last 20 years, Maharashtra has faced about 10 major droughts.
2. **Floods:** Heavy rainfall leads to major floods in cities like Mumbai, Kolhapur, Sangli, Nashik, and Pune.
3. **Cyclones:** Cyclones forming in the Arabian Sea affect the Konkan coast.

4. **Hailstorms:** The frequency of hailstorms has increased in recent years, which is devastating for fruit orchards and vegetable crops.

II) Impact of Climate Change on Agriculture in Maharashtra

Climate change is having several negative effects on the agricultural sector in Maharashtra. Some of the significant impacts are:

A) Impact on Crop Production

1. **Decrease in Production:** Due to rising temperatures and decreased water availability, there is a reduction in the production of major crops like wheat, jowar (sorghum), bajra (pearl millet), and rice. For every 1 degree Celsius increase in temperature, wheat production decreases by 4-5%.
2. **Changes in Crop Growth Period:** Climate changes are altering the growth period of crops. For example, higher temperatures shorten the maturation period of wheat.
3. **Changes in Cropping Patterns:** Due to climate changes, farmers in Maharashtra are changing their traditional cropping patterns. For instance, in areas with water scarcity, farmers are shifting towards crops that require less water, such as jowar, bajra, and millets.
4. **Outbreak of New Pests and Diseases:** Rising temperatures accelerate the growth of some pests and pathogens. For example, the impact of brown plant hopper on rice and rust disease on wheat is increasing.

B) Impact on Water Resources

1. **Decrease in Water Availability:** Due to irregular rainfall and increased evaporation, groundwater levels are decreasing. In Vidarbha and Marathwada, many wells and borewells are drying up.
2. **Increasing Demand for Irrigation Water:** Rising temperatures are increasing the water requirements of crops. This creates more demand for irrigation water, which puts more pressure on already scarce resources.
3. **Watershed Degradation:** Heavy rainfall and floods cause soil erosion, which leads to watershed degradation. This contributes to sedimentation in reservoirs and reduces their storage capacity.

C) Impact on Soil Health

1. **Soil Erosion:** Heavy rainfall and floods cause soil erosion, which leads to loss of nutrients and reduces soil productivity.
2. **Increase in Soil Salinity:** Due to rising temperatures and water scarcity, the salt content in soil is increasing, especially in coastal areas. Saline soil is not conducive to crop growth.
3. **Reduced Carbon Content in Soil:** Rising temperatures accelerate the decomposition of organic matter in soil, which reduces the carbon content in soil. This affects soil structure and its water-holding capacity.

D) Agro-Economic Impacts

1. **Reduction in Farmers' Income:** Reduced crop production and increasing production costs are adversely affecting farmers' income.
2. **Increasing Debt Burden:** Crop losses and reduced income are forcing farmers to take more loans, which is increasing their debt burden.
3. **Impact on Rural Economy:** Instability in the agricultural sector is affecting the rural economy, leading to increased unemployment and migration to urban areas.

III) Climate-Responsive Practices

A) Climate Change and Modern Farming Practices

1. **Use of Micro-Irrigation Technology:** Micro-irrigation technologies like drip irrigation and sprinkler irrigation are being used to save water and increase crop production. The Maharashtra government has started a scheme to provide subsidies for drip irrigation projects.
2. **Development and Use of Climate-Resistant Crop Varieties:** Research institutions and seed companies are developing drought-resistant, flood-resistant, and pest-resistant crop varieties. For instance, drought-resistant varieties like "Pusa Bold" and "KoradwahuJwari" developed by Mahatma Phule Agricultural University are becoming increasingly popular.
3. **Crop Diversification and Rotation Methods:** Farmers are diversifying their crops and adopting various crop rotation methods. For example, instead of the traditional "wheat-rice" rotation, farmers are adopting more sustainable rotations like "wheat-pulses-rice."
4. **Integrated Pest Management (IPM):** To reduce dependence on chemical pesticides and reduce negative impacts on the environment, farmers are adopting integrated pest management methods. This includes biological control, mechanical control, and cultural methods.

B) Watershed Development and Water Conservation

1. **Watershed Management:** Watershed development programs are being implemented to increase groundwater levels and prevent soil erosion. This includes building bunds, digging deep pits, and afforestation.
2. **Water Conservation Structures:** Farmers are creating water conservation structures on their farms, such as farm ponds, well recharge structures, and water storage tanks.
3. **Rainwater Harvesting:** Rainwater harvesting systems are being installed in both urban and rural areas. The Maharashtra government has initiated village-level rainwater harvesting projects under the "Jalyukt Shivar" program.

C) Soil Health Management

1. **Organic Farming:** An increasing number of farmers are turning to organic farming, which includes the use of organic fertilizers, manure composting, and green manuring. This improves soil health and increases its water-holding capacity.
2. **Zero Tillage Method:** In the zero tillage method, crops are sown without tilling the land. This reduces soil erosion and increases the carbon content in the soil.
3. **Soil Health Card:** The Maharashtra government has launched the "Soil Health Card Scheme," under which farmers' soil is tested and they are provided with detailed

analysis of their soil health. This helps farmers use fertilizers according to their soil's needs.

D) Climate Risk Management

1. **Crop Insurance:** Crop insurance schemes like "Pradhan Mantri Fasal BimaYojana (PMFBY)" are being implemented to protect farmers from climate-related risks.
2. **Weather-Based Crop Insurance:** Weather-based crop insurance schemes, where insurance is provided based on weather indices such as rainfall, temperature, and humidity, are gaining popularity.
3. **Kisan Credit Card:** Under the "Kisan Credit Card" scheme, farmers are given loans at lower interest rates for their farming and related activities. This provides them with financial flexibility to face climate-related calamities.

E) Use of Technology

1. **Weather Forecast Systems:** The Indian Meteorological Department (IMD) and other institutions are providing short-term and long-term weather forecasts for farmers. This helps farmers in their crop planning and management.
2. **Agricultural Advisory Services:** 'Krishi Vigyan Kendras' and other extension services are advising farmers about climate-smart farming practices.
3. **Mobile Apps and SMS Services:** Mobile apps like "Kisan Suvidha," "Mridha Swasthya Card," and "Pusa Krishi" are providing farmers with weather forecasts, crop disease management, and market information.

IV) Government Schemes and Policies for Tackling Climate Change

The Maharashtra government and the central government are implementing various schemes and policies to tackle climate change. Some of the key initiatives are as follows:

A) Central Government Schemes

1. **National Mission for Sustainable Agriculture (NMSA):** This scheme is designed to reduce the impact of climate change on the agricultural sector and help farmers adopt climate-resistant farming practices.
2. **Pradhan Mantri Krishi Sinchai Yojana (PMKSY):** This scheme is based on the principle of "Per Drop More Crop" and is designed to increase irrigation capacity and use water efficiently.
3. **Soil Health Card Scheme:** This scheme helps farmers assess the health of their soil and use fertilizers accordingly.
4. **Paramparagat Krishi Vikas Yojana (PKVY):** This scheme is being implemented to promote organic farming and reduce dependence on chemical fertilizers.

B) Maharashtra Government Schemes

1. **Jalyukt Shivar Abhiyan:** This scheme is being implemented to carry out watershed development and water conservation projects in drought-prone areas.
2. **Nanaji Deshmukh Krishi Sanjivani Project:** This project is being implemented to promote climate-resistant farming practices and provide sustainable livelihoods in drought-prone areas.

- 3. Mahatma Phule Jal Bhumi Sandharan Abhiyan:** This scheme provides subsidies for digging farm ponds and wells and creating water conservation structures.

V) Climate Change and Modern Agriculture Business : Maharashtra State

A) Current Situation :

The impact of climate change in Maharashtra state is increasing day by day. Irregular rainfall has made it difficult for farmers to plan their crops. Drought conditions are increasing in Vidarbha and Marathwada, while crops are being damaged due to excessive rainfall in Konkan.

B) Use of Modern Technology

To face changing conditions, progressive farmers in Maharashtra are adopting 'Smart Farming'. The use of drone technology, sensor-based irrigation, and mobile apps for weather forecasts is increasing.

C) Government Initiatives

The state government has launched a 'Climate-Friendly Agriculture Project', under which farmers are being given subsidies for drip irrigation, farm ponds, and solar energy pumps.

D) Economic Aspects

Special loan schemes have been made available to farmers for investing in modern agricultural technology. The number of agricultural startups is increasing, through which new technology is being disseminated.

E) Future Direction

Research is rapidly ongoing on sustainable agriculture, organic methods, and crops that give more production with less water. To face the challenges of climate change, farmers and scientists are coming together to find new ways.

VI) Climate Change and Agriculture Business: Policies of Central (India) and State (Maharashtra) Governments

A) Central Government Policies

The central government has launched the National Sustainable Agriculture Mission under the National Action Plan on Climate Change (NAPCC) for agriculture. Major initiatives:

- **PM Kisan Yojana :** Providing financial assistance of Rs. 6,000 annually to farmers.
- **Pradhan Mantri Fasal Bima Yojana :** Insurance coverage is given if crops are damaged due to climate calamities.
- **Krishi Sinchai Yojana :** A scheme is being implemented to promote efficient use of water.
- **Paramparagat Krishi Vikas Yojana :** Organic farming is being encouraged.

B) Maharashtra Government Policies

The Maharashtra government has implemented the following initiatives for climate-friendly agriculture:

- **Jalyukt Shivar Abhiyan:** Efforts are being made to conserve water through watershed area development.
- **Nanaji Deshmukh Krishi Sanjivani Project:** Emphasis is on promoting climate-friendly farming practices.
- **Mahatma Phule Jal Bhumi Sandharan Abhiyan:** A special scheme for soil conservation and water conservation.

- **Maharashtra Greenhouse Farming Scheme:** Subsidies are given to encourage protected farming.

C) Financial Provisions

The central government has announced a fund of Rs. 8,000 crores for climate-friendly agriculture, while the Maharashtra government has made a provision of Rs. 1,500 crores.

VII) Conclusions and Recommendations

A) Conclusions

1. Climate change is having a serious impact on the agriculture business in Maharashtra. Irregular rainfall, rising temperatures, and water scarcity are reducing crop production.
2. There is an adverse effect on farmers' income.
3. Traditional cropping methods and water management practices are inadequate to face the challenges of climate change.

B) Recommendations

1. **Adoption of Climate-Friendly Farming Practices:** Use drought-resistant seeds, drip irrigation, and mulching techniques.
2. **Importance of Diversity:** Instead of relying on a single crop, take various crops and adopt mixed farming.
3. **Weather-Based Insurance Schemes:** Make comprehensive and affordable insurance coverage available to farmers.
4. **Training and Capacity Building:** Train farmers in farming practices adaptable to climate change.
5. **Sustainable Water Management:** Give priority to watershed development, water conservation, and water reuse projects.

Through these measures, the agriculture business in Maharashtra will be able to face the challenges of climate change and move towards sustainable development.

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**SUPPLY CHAIN MANAGEMENT & LOGISTIC AND DELIVERY IN MANUFACTURING
SECTOR USING GIS TECHNIQUES.**

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➤ **ABSTRACT**

Supply chain management is constantly evolving. The business world is transitioning from one paradigm to the next. In the corporate sector, supply chain is the most recent trend. This research paper focuses and analyses the existing state-of-the-art literature on Supply Chain Management (SCM) and the interaction between digital technologies like GIS(Geographical Information System) and Supply Chain Management. Geographic Information Systems (GIS) have revolutionized various industries by enabling the visualization, analysis, and management of spatial data. In the manufacturing sector, GIS plays an increasingly important role in Supply Chain Management (SCM) and logistics by improving route planning, optimizing distribution, and enhancing decision-making processes. The integration of GIS with SCM and logistics systems allows manufacturers to efficiently manage raw material sourcing, warehouse locations, transportation routes, and delivery networks. This research paper explores the application of GIS techniques to enhance the logistics and delivery systems in the manufacturing sector, focusing on spatial data analytics, real-time tracking, and optimization of transportation routes. This paper aims to demonstrate how GIS technologies can significantly improve efficiency, reduce costs, and provide a competitive advantage for manufacturers operating in complex, global supply chains. It describes the pillar components for any supply chain change, the suggested work is valuable for both academics and practitioners, the Transport Management Sector.

Keywords: -Supply chain Management, GIS, Decision support tools.

➤ **INTRODUCTION**

In the likeness of many interrelated subjects, supply chain management has become an actual web of logistics, data, and decision-making in the contemporary world. The efficiency with which goods are moved from one area to another area is important for making an enterprise competitive in respecting the delivery of goods to customers. In a sense, GIS may have transformed the propagation and management of supply chains. This paper attempts to explore the immense possibilities of GIS in supply chain management and how it may foster operational excellence with improved visibility and informed decision-making and also

explores the role of GIS in supply chain management and logistics within the manufacturing sector. It will highlight key GIS techniques, such as spatial data analysis

The manufacturing sector faces numerous challenges in managing the movement of goods and materials across the supply chain. Efficient logistics and delivery systems are vital to ensuring timely production and delivery of goods to customers. Traditional methods of managing logistics often involve complex decision-making, requiring managers to account for various factors, including transportation costs, inventory levels, warehouse locations, and delivery times.

Geographic Information Systems (GIS) offer powerful tools for visualizing and analyzing spatial data, allowing supply chain professionals to make informed decisions regarding logistics operations. GIS enables the integration of spatial data with supply chain management, helping to optimize transportation routes, manage warehouse locations, and improve real-time tracking of shipments. By incorporating GIS techniques, manufacturing companies can reduce inefficiencies, lower costs, and ensure better service delivery.

➤ LITERATURE REVIEW

GIS is a revolutionary technology that has greatly impacted supply chain management and logistics. The benefits accrued by integrating it with SCM are enormous, limiting its offering mainly to manufacturers who need optimized routines, warehouse planning, and real-time shipment tracing. GIS allows supply chain professionals to conduct spatial analysis to help substantiate decisions so as to improve transportation and distribution, according to Fekete and Toth (2014). By means of GIS technologies, manufacturing firms can analyse geographic patterns, optimize routes for transportation, and visualize logistics operations. According to Mokhtarian et al. (2018), in logistics management, the efficiency of transportation networks is further improved with GIS by incorporating other factors, such as traffic patterns, weather conditions, and road closures. Besides route planning, GIS applications in logistics help enhance the operations of the supply chain by informing them about service areas, inventory levels, and suitable/strategic placements of warehouses (Chien, Ding, and Wei, 2015). Warehouse optimization through the application of GIS has been shown to minimize delivery times and related transportation costs by enabling firms to identify most suitable sites for warehouses with respect to the preeminent suppliers and customers. Such monitoring and tracking of goods in real time, unlocked by GIS, give manufacturers the opportunity to respond in time to delays and disturbances ensuing from occurring disruptions which, given all this, further improves customer service and makes supply chain systems more resilient. Case studies conducted on various companies, like Coca-Cola, Ford, and Nike, best capture the use of GIS in the optimization of logistics operations and cost-cutting purposes (ESRI, 2022). However, GIS has its challenges in the operation of SCM, and these include high initial investment costs, difficulties integrating data, and specialized knowledge required. Nevertheless, to capture the real potential of GIS in supply chains optimization, they will need to work on all these challenges.

➤ **OBJECTIVES :**

- 1. To review existing literature on GIS and SCM:** The paper reviews the current literature on GIS technology applications in the field of logistics, transportation, and supply chain operations.
- 2. To examine key GIS techniques:** The study identifies different GIS techniques employed to optimize various aspects of supply chain management, including spatial analysis, routing algorithms, and location-based analysis.
- 3. To showcase real-world case studies:** The paper highlights different case studies from companies such as Coca-Cola, Ford Motor Company, and Nike where GIS has been successfully implemented as a tool to optimize their supply chain and logistics operations.
- 4. To investigate the advantages and challenges of GIS implementation in manufacturing SCM:** The paper aims at evaluating the benefits and barriers in the context of using GIS for manufacturing supply chain management.

2.1 GIS Techniques in Supply Chain Management

GIS techniques are used in supply chain management to analyze geographic data and optimize decision-making. According to Fekete and Toth (2014), spatial analysis in supply chain management helps in better understanding of geographic patterns, such as optimal routes (road network), transportation networks, and service areas. GIS techniques allow supply chain managers and operators to visualize and model the flow of goods and services across various locations and systems.

Key GIS techniques in SCM include:

Spatial Analysis and Optimization: GIS techniques such as Network Analysis, Geographic Weighted Regression, and Buffer Analysis help optimize transportation routes and manage logistics systems effectively.

Geospatial Data Visualization: GIS allows for the visualization of geographic patterns in supply chain processes, providing real-time insights into logistics operations.

Routing Algorithms: GIS can help develop algorithms for optimizing transportation routes like using nearest neighbour analysis for reducing costs and improving delivery times for the manufacturing sector.

2.2 GIS in Logistics and Delivery Systems

In logistics, GIS is primarily used to improve route planning, caravan management, and delivery scheduling. Research by Mokhtarian et al. (2018) suggests that GIS technologies can improve the efficiency of transportation networks by providing decision-makers with critical information related to traffic patterns, weather conditions, and road closures.

Logistic delivery responsibilities primarily involve planning, coordinating, and executing the physical movement of goods from origin to destination, including tasks like route optimization, carrier selection, shipment tracking, delivery scheduling, and ensuring timely and accurate delivery while adhering to compliance regulations.

GIS-enabled logistics systems allow companies to plan routes dynamically and consider various constraints such as fuel consumption, traffic congestion, and delivery time windows.

Real-time tracking and monitoring of shipments also help logistics managers ensure that deliveries are on time, further optimizing the entire delivery process.

2.3 CASE STUDIES IN MANUFACTURING SECTOR

Several manufacturing companies have already started using GIS for supply chain management and logistics. For example, the use of GIS by companies such as Ford Motor Company and Coca-Cola has helped optimize distribution routes, manage warehouse networks, and improve supply chain resilience. These companies have achieved significant reductions in transportation costs and delivery lead times by integrating GIS into their operations.

Coca-Cola: Coca-Cola employs GIS for logistics and distribution, utilizing GIS to optimize delivery routes and improve fleet management. The company uses GIS for real-time tracking, which allows them to monitor delivery trucks, adjust routes, and ensure timely delivery to customers. Coca-Cola's use of GIS has led to cost reductions and improved customer satisfaction.

GIS Mapping Helps Nike Open Retail Stores, Distribute Shoes

It's no secret that Nike owns the athletic shoe and apparel industry. The company's iconic swoosh is emblazoned on the jerseys of athletes from basketball to soccer to golf. Started by a Portland, Oregon track and field coach in 1964, Nike is now an Olympic-Games sponsor and has global recognition. To assist it in fulfilling the customer demand and wish product expectations, the company uses GIS mapping. Through the gathering of demographics and sales information from its worldwide retail outlet. Nike examines purchasing behaviour, trends and patterns in relation to where stores are located. The sales organization and employees in local markets all share access to the GIS database of the company, which assist them in developing sales strategy, formulating advertisement and welfare of the company. Geospatial analysis not only allows Nike to connect with customer desiring its product but also workers who drive the company forward. Discover more about GIS mapping and geospatial analysis for your manufacturing company, supply chain or retail outlet.

➤ Methodology

This research paper employs a combination of qualitative and quantitative research methods. A literature review was conducted to gather information on the use of GIS in supply chain management and logistics within the manufacturing sector. The study also includes case studies from manufacturing companies that have successfully implemented GIS technologies. Furthermore, data from logistics reports and industry surveys were analyzed to understand the impact of GIS on logistics optimization.

➤ GIS Techniques for Supply Chain Optimization in Manufacturing

The application of GIS techniques in supply chain management and logistics can lead to significant improvements in various aspects of the supply chain. Key techniques include:

4.1 Spatial Analysis for Routing Optimization

GIS-based network analysis allows manufacturers to optimize transportation routes by considering factors such as distance, road types, traffic conditions, and fuel consumption.

This enables companies to minimize transportation costs while maintaining delivery schedules. Software's like Arc GIS, QGIS, and Global Mapper are widely used for route optimization, where routing algorithms can dynamically adjust to real-time traffic data.

For example, using GIS techniques, a manufacturer can plan the shortest or most cost-effective routes for deliveries. By factoring in variables like road conditions and traffic patterns, GIS ensures that delivery trucks take the most efficient routes, saving time and money.

4.2 Location Analysis for Warehouse Optimization

In addition to transportation, GIS is essential in optimizing warehouse locations. Manufacturers can use spatial data to determine the most strategic locations for warehouses and distribution centres. GIS techniques such as location-allocation based models with latitude and longitude of that particular area are help to identify optimal sites that minimize delivery times and costs. To fix the coordinates we must geo referenced that area with reference to geo coordinates.

By studying geographic patterns of that location manufacturers can place warehouses closer to key customers or suppliers, ensuring faster deliveries and better service levels. This is particularly important in industries where the time-sensitive delivery of products is very important.

4.3 Real-Time Tracking and Monitoring

Real-time tracking is another crucial application of GIS in supply chain management. Using GPS (Global Positioning System) and GIS systems, logistics managers can track shipments and monitor delivery progress. In the event of delays or disruptions, real-time tracking data helps companies make informed decisions accordingly and adjust delivery routes dynamically.

By combining GIS with Internet of Things (IoT) technology, manufacturers can track inventory levels and shipments throughout the entire supply chain. This improves decision-making, reduces delays, and enhances supply chain resilience.

5. Advantages of GIS in SCM and Logistics for Manufacturing

The implementation of GIS in supply chain management and logistics provides several benefits, including:

- **Cost Reduction:** GIS helps optimize transportation routes, which can lead to significant savings in fuel, labour, and vehicle maintenance.
- **Improved Delivery Times:** By analyzing real-time data and adjusting routes, GIS enables manufacturers to ensure timely deliveries.
- **Better Resource Allocation:** GIS allows for better management of warehouse locations, vehicle fleets, and inventory levels.

6. Challenges in Implementing GIS in Manufacturing SCM

Despite the clear benefits of GIS, there are several challenges associated with its implementation:

- **High Initial Investment:** Implementing GIS technologies can require significant capital investment in hardware, software, and training.

- Technological Knowledge Data Integration Issues: Integrating GIS data with other supply chain management systems can be complex without proper knowledge of GIS
- Data Quality and Accuracy: The effectiveness of GIS depends on the accuracy and quality of the data. Inaccurate data can lead to suboptimal decisions.
- Sustainability Concerns
- Geopolitical shifts

7. FINDINGS :

1. GIS enhances supply chain efficiency: Current research paper showed that GIS techniques—spatial analysis, routing optimization, and real-time tracking—can significantly enhance supply chain efficiency with reduced transportation costs, improved delivery timings, and better resources allocation.

2. GIS optimizes transport routes: Through the analysis of geographic patterns along with network analysis and enabling metrics, GIS allows manufacturers to be more cost and time-effective with respect to delivery routes and thus provide savings in fuel labor and vehicle maintenance costs.

3. GIS improves warehouse location decision making: The paper shows that GIS helps manufacturers analyze spatial data to know most strategic locations for warehouses and distribution centers to minimize delivery times and costs.

4. Real-time tracking improves management: GIS, more than ever, when integrated with GPS and IoT technologies, allows for real-time shipment tracking with prompt decision-making changes on the delivery route helping with punctual deliveries and less interruption.

5. Challenges of GIS implementation: Nevertheless, this research highlighted several challenges in the application of GIS: high initial investment, complexities in integration, data accuracy issues, and the requirement of specialized knowledge and skills to utilize GIS effectively.

6. The evidence of case studies is significant: From well-known case studies of GIS technology such as Coca Cola and Nike, which enhanced logistics, reduced transportation costs, and improved satisfaction through timely deliveries and better routing.

➤ CONCLUSION

GIS has emerged as a powerful tool in the manufacturing sector to optimize logistics and delivery systems. Through the application of GIS techniques such as spatial analysis, routing optimization, and real-time tracking, manufacturers can improve supply chain efficiency, reduce costs, and enhance delivery performance. However, successful GIS implementation requires careful planning, investment, and integration with other supply chain technologies.

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CONSUMER TRUST AND CYBER SECURITY IN ONLINE SHOPPING

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➤ **Abstract :**

The rapid growth of e-commerce has brought both convenience and risks for consumers. While online shopping platforms offer numerous benefits, they have also become prime targets for cyber threats. Ensuring cybersecurity is crucial for maintaining consumer trust, which directly impacts purchasing behavior and brand loyalty. This paper explores the intricate relationship between consumer trust and cybersecurity in online shopping. It examines key factors influencing trust, common cyber threats, effective security strategies, and the role of consumer psychology. Through case studies and ethical considerations, this research provides insights into building a secure and trustworthy online shopping environment.

➤ **Introduction :**

Online shopping has revolutionized consumer behavior, with global e-commerce sales exceeding trillions of dollars annually. However, rising cyber threats such as phishing, data breaches, and identity theft challenge this progress. Trust is a key factor that determines whether consumers are willing to share personal data and make purchases online. This paper investigates how cybersecurity practices influence consumer trust and offers strategies for businesses to mitigate risks.

2. The Importance of Consumer Trust in Online Shopping

Consumer trust is built on several key factors:

- Perceived Security: Consumers must feel their data is safe.
- Transparency: Clear communication about security measures reassures users.
- Brand Reputation: Established brands often evoke higher trust.
- User Experience (UX): Simple, consistent, and error-free interfaces enhance trust.
- Trust Models in E-Commerce:
- McKnight's Trust Model emphasizes institution-based trust, which depends on legal frameworks, certifications, and third-party endorsements.
- Gefen's Trust Model focuses on familiarity, predictability, and the reliability of platforms.

3. Common Cybersecurity Threats in E-Commerce

- Cyber threats undermine consumer trust by exposing personal and financial data.

Common threats include:

- Phishing Attacks : Deceptive emails that trick users into disclosing sensitive information.
- Data Breaches : Unauthorized access to customer databases.
- Man-in-the-Middle Attacks (MITM) : Interception of communications between consumers and merchants.
- Malware and Ransomware : Malicious software that compromises system security.
- Fake E-commerce Websites : Fraudulent sites that mimic legitimate stores.
- Case Study : Target Data Breach (2013) — Hackers exploited a vulnerability in Target’s payment system, exposing credit card information of over 40 million customers. This incident significantly damaged consumer trust, reducing sales and impacting brand perception.

4. The Role of Cybersecurity in Building Trust

Effective cybersecurity strategies are essential for earning consumer trust. Key practices include:

- SSL/TLS Encryption : Ensures secure data transmission.
- Multi-Factor Authentication (MFA) : Adds layers of security for user logins.
- PCI DSS Compliance : Ensures businesses meet credit card security standards.
- Regular Security Audits : Identifies vulnerabilities before they can be exploited.
- User Education : Consumers who understand security risks are more likely to trust secure platforms.
- Case Study : Amazon’s Security Framework — Amazon’s robust security infrastructure includes encryption, AI-driven fraud detection, and regular security updates. This proactive approach has helped Amazon maintain consumer trust globally.

5. Psychological Factors Influencing Consumer Trust

Consumer trust is shaped not only by technical security but also by psychological factors:

- Familiarity Heuristic: Consumers often trust brands they have prior experience with.
- Visual Cues : Trust signals like security badges, HTTPS URLs, and customer reviews improve confidence.
- Perceived Control: Providing consumers with options to manage their data enhances trust.
- Example : Norton Secured Badge— Research shows that websites displaying trusted security logos experience higher conversion rates due to increased perceived security.

6. Ethical Concerns in Cybersecurity and Consumer Trust

Businesses face ethical dilemmas when balancing data security with data collection for marketing purposes. Ethical issues include:

- Data Privacy: Companies must adhere to regulations such as GDPR and CCPA to ensure consumer rights.

- Transparency in Data Use : Consumers should be informed about how their data is collected, stored, and shared.
- Consent Mechanisms : Clear opt-in/opt-out options are crucial for ethical data practices.
- Example : Facebook’s Cambridge Analytica Scandal— This breach of consumer trust underscored the importance of ethical data handling.

7. Strategies for Businesses to Improve Cybersecurity and Trust

- Businesses can adopt these strategies to strengthen both security and consumer trust:
- Invest in Advanced Security Technologies : AI-based threat detection, block chain for secure transactions, and biometric authentication.
- Enhance User Experience (UX) : Simple yet secure login processes improve customer satisfaction.
- Build Transparent Policies : Clearly communicate data protection policies and privacy rights.
- Implement Trust Signals : Display security certifications and offer customer support.

8. Future Trends in Cybersecurity and E-Commerce Trust

- Emerging trends that will shape consumer trust include:
- AI-Driven Fraud Detection : AI models that predict and prevent cyber threats in real-time.
- Zero Trust Architecture (ZTA):A security framework that assumes no device or user is automatically trusted.
- Decentralized Identity Solutions : Block chain-based identity verification can improve data privacy.

➤ Conclusion :

Building consumer trust in online shopping requires a comprehensive approach that integrates strong cyber security practices, user education, and ethical data management. As cyber threats evolve, businesses must adopt proactive security measures to protect consumer data and maintain trust. By fostering a secure environment, businesses can enhance customer loyalty and drive sustainable growth in the e-commerce sector.

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NEURO MARKETING : HOW BRANDS INFLUENCE CONSUMER DECISIONS

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➤ ABSTRACT

Neuro marketing is a growing field that applies neuroscience principles to understand consumer behavior and improve marketing strategies. By leveraging brain imaging, biometric data, and psychological insights, brands can tailor their advertising techniques to directly influence consumer decision-making. This paper explores the key principles of neuro marketing, examining how sensory stimuli, emotional triggers, and cognitive biases shape purchasing behaviors. It also discusses ethical concerns and future research directions. Through an analysis of case studies, this paper demonstrates how brands successfully use neuro marketing to captivate audiences and drive sales.

➤ INTRODUCTION

In the competitive world of marketing, understanding consumer behavior is crucial for creating impactful campaigns. Neuro marketing combines neuroscience with marketing to analyze how the brain responds to various stimuli in advertisements, product design, and branding. Unlike traditional marketing approaches that rely on surveys and focus groups, neuro marketing uncovers subconscious reactions, offering deeper insights into consumer preferences.

This paper investigates how brands employ neuro marketing strategies to influence consumer decisions, highlighting successful case studies and addressing ethical concerns.

➤ LITERATURE REVIEW

2.1 The Science Behind Neuro marketing

Neuro marketing utilizes brain imaging tools like fMRI (functional Magnetic Resonance Imaging), EEG (Electroencephalography), and eye-tracking to measure consumers' neural responses to advertisements, packaging, and product placements (Morin, 2011). These technologies reveal emotional reactions, attention levels, and memory retention — key factors in purchasing behavior.

2.2 Key Principles in Neuromarketing

- Emotional Triggers : Emotional connections play a significant role in consumer choices. Campaigns that evoke happiness, nostalgia, or excitement are more memorable and effective.

- Sensory Marketing: Visuals, sounds, textures, and even scents can stimulate positive consumer responses. For example, Starbucks enhances customer experience through ambient music and the aroma of freshly brewed coffee.
- Cognitive Biases : Consumers are prone to biases such as the anchoring effect, scarcity effect, and social proof, which brands exploit to drive sales.

2.3 Successful Case Studies

- Coca-Cola vs. Pepsi Experiment (2004): Using FMRI, researchers found that Coca-Cola's brand image activated the brain's reward center more strongly than Pepsi, despite similar taste profiles (McClure et al., 2004).
- Apple's Design Strategy: Apple's minimalist design and sensory-focused marketing create a sense of exclusivity, engaging the brain's reward systems and enhancing perceived value.

➤ 3. METHODOLOGY

This study synthesizes data from academic research, case studies, and industry reports to analyze how neuromarketing principles influence consumer behavior. The focus is on identifying common techniques brands use and examining their effectiveness in real-world scenarios.

➤ FINDINGS AND DISCUSSION

• 4.1 Visual and Emotional Appeal in Branding

Brands like Nike and Apple leverage powerful visual storytelling to engage consumers. Nike's "Just Do It" campaigns, for instance, combine motivational messages with striking visuals to stimulate emotional resonance.

• 4.2 The Role of Color Psychology.

Color significantly influences buying behavior. For example:

- Red (used by Coca-Cola, McDonald's) evokes excitement and urgency.
- Blue (used by Facebook, PayPal) promotes trust and security.

• 4.3 Subconscious Influence of Packaging

Research shows that consumers are more likely to choose products with eye-catching, minimalist designs. For instance, Pringles' uniform packaging creates a distinct, memorable look that influences purchasing decisions.

• 4.4 Scarcity and Urgency Tactics

Brands often use phrases like "Limited Stock" or "Only a Few Left!" to trigger fear of missing out (FOMO), driving impulse purchases.

➤ ETHICAL CONSIDERATIONS

Despite its effectiveness, neuro marketing raises ethical concerns. Critics argue that manipulating subconscious decisions may exploit consumer vulnerabilities. Issues surrounding privacy, data collection, and consent are key challenges for the industry. Balancing effective marketing with ethical responsibility is essential for sustainable consumer trust.

➤ **ADDITIONAL CASE STUDIES**

- IKEA's Store Layout Strategy : How their winding path design encourages impulse buying.
- Amazon's Recommendation Algorithm: Leveraging user data to personalize suggestions, enhancing conversion rates.
- Netflix's Thumbnail Strategy : How AI-driven thumbnail designs improve click rates by matching visuals to individual viewer preferences.

7. Visual Elements

- Diagrams illustrating brain regions involved in decision-making (e.g., prefrontal cortex, amygdala).
- Infographics showing how colors, shapes, and layouts affect consumer perception.

8. Deeper Exploration of Ethical Concern

- The potential for manipulative tactics in digital advertising.
- Privacy concerns tied to biometric data collection.
- Regulatory frameworks like GDPR and consumer protection guidelines.

9. Consumer Psychology Insights

- How loss aversion, decision fatigue, and social proof play pivotal roles in purchasing behavior.
- The role of dopamine release in creating brand loyalty.

Would you like me to expand on one of these sections or integrate them into the existing structure?

➤ **CONCLUSION**

Neuromarketing has revolutionized how brands influence consumer decisions by leveraging insights from neuroscience and psychology. By understanding emotional triggers, sensory engagement, and cognitive biases, companies can design campaigns that resonate deeply with their audience. However, marketers must prioritize ethical practices to ensure transparency and protect consumer well-being. Future research should explore improved regulations and strategies that balance innovation with responsible marketing.

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IMPACT OF VENTURE CAPITAL FUNDING ON STARTUP SUCCESS

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➤ ABSTRACT :

Venture capital funding plays a crucial role in the growth and success of startups by providing financial resources, strategic guidance, and market access. This research paper explores the impact of venture capital funding on startup success by analyzing various dimensions such as business growth, market expansion, technological advancements, and operational efficiency. The study highlights how venture capitalists contribute not only by offering financial assistance but also by mentoring entrepreneurs and facilitating networking opportunities. Through an in-depth literature review and case study analysis, the paper identifies the key factors that drive startup success post venture capital investment. The findings reveal that while venture capital significantly enhances business performance, startups must strategically align their objectives with investor expectations to achieve sustainable growth. The paper concludes with recommendations for startups to optimize their collaboration with venture capitalists for long-term success.

Key Words : Venture Capital, Startup Success, Funding, Business Growth, Entrepreneurial Development, Market Expansion, Strategic Investment

➤ INTRODUCTION :

Startups are essential drivers of innovation and economic development in modern economies. However, limited financial resources often hinder their growth and sustainability. Venture capital funding has emerged as a vital solution to bridge this gap by providing startups with the necessary capital and strategic support. The introduction of venture capital funding has revolutionized the startup ecosystem, enabling entrepreneurs to scale their businesses rapidly. This paper aims to examine the relationship between venture capital funding and startup success, exploring how external investments impact various aspects of business development. The study will provide valuable insights into the role of venture capital in shaping the future of startups and fostering a dynamic entrepreneurial environment.

➤ Objectives :

1. To assess the impact of venture capital funding on startup business growth.
2. To evaluate the role of venture capitalists in providing strategic and operational support to startups.
3. To analyze the effect of venture capital funding on market expansion and technological advancements.
4. To identify the key challenges faced by startups in securing and managing venture capital investments.

➤ **Scope of the Study :**

1. The study focuses on startups operating in technology-based sectors.
2. Geographical scope limited to India.
3. Time frame considered is the last 10 years (2015–2025).
4. The study includes both successful and failed startups to provide a comprehensive analysis.

➤ **Limitations :**

1. Limited availability of primary data due to confidentiality issues.
2. Focus primarily on technology startups, excluding other sectors.
3. Geographical scope confined to India, which may limit global applicability.
4. The dynamic nature of the startup ecosystem may affect the relevance of findings over time.

➤ **Literature Review :**

1. Sharma & Kumar (2018) emphasized the role of venture capital in accelerating startup growth through financial and managerial support.
2. Patel & Mehta (2020) analyzed the success rate of startups with venture capital funding compared to self-funded startups.
3. Gupta et al. (2021) highlighted the influence of venture capital on technological innovation and market expansion.
4. Rajan & Roy (2023) discussed the challenges startups face in obtaining venture capital and managing investor expectations.

➤ **Conceptual Background**

Venture capital refers to financing provided by investors to startups and small businesses with high growth potential. Unlike traditional financing methods, venture capitalists not only provide funding but also offer strategic guidance, industry expertise, and networking opportunities. This form of investment is characterized by high risk and high reward, making it a crucial component in the entrepreneurial ecosystem. Venture capital plays a pivotal role in transforming innovative ideas into successful business ventures by addressing financial and operational challenges faced by startups.

Venture capitalists primarily invest in startups that demonstrate strong market potential, innovative business models, and scalability. These investors take equity stakes in the companies they fund, aligning their financial success with the startup's growth. In addition to financial support, venture capital firms often engage in active mentorship, helping entrepreneurs refine business strategies, improve product development, and establish a strong market presence.

One of the key advantages of venture capital funding is access to an extensive network of industry professionals, potential clients, and business partners. This network provides startups with strategic partnerships and business expansion opportunities that would otherwise be difficult to achieve. Moreover, venture capital-backed startups gain credibility in the market, which can facilitate additional funding rounds and attract top-tier talent.

Despite its advantages, venture capital funding comes with challenges. Startups must relinquish a degree of ownership and decision-making power to investors, which can sometimes lead to conflicts regarding business direction and priorities. Additionally, venture capital funding is not accessible to all startups, as investors selectively invest in businesses with high growth potential and competitive differentiation.

Overall, venture capital plays a transformative role in the startup ecosystem by providing both financial and strategic support. While it presents numerous growth opportunities, startups must carefully navigate the challenges associated with investor relations and equity dilution to maximize the benefits of venture capital funding.

➤ **Research Methodology**

The research methodology adopted for this study includes a combination of secondary data analysis and case study approach. Secondary data is collected from academic journals, industry reports, and government publications. Case studies of selected Indian startups funded by venture capital are analyzed to understand the impact of funding on business growth, technological advancements, and market expansion. Data interpretation is done through qualitative analysis to draw meaningful conclusions.

➤ **Discussion**

Venture capital funding significantly contributes to startup success by providing not only financial resources but also strategic guidance and networking opportunities. Startups that receive venture capital funding often experience accelerated business growth, increased market penetration, and enhanced technological innovation. However, the collaboration between startups and venture capitalists requires mutual understanding and alignment of objectives. Managerial implications include the need for startups to maintain transparent communication with investors, develop scalable business models, and leverage the strategic expertise of venture capitalists. From a social perspective, successful startups funded by venture capital create job opportunities, promote innovation, and contribute to economic development. The study emphasizes that while venture capital funding offers significant benefits, startups must navigate the challenges of managing investor expectations and maintaining operational autonomy.

➤ **Recommendations :**

1. Startups should align their business goals with investor expectations to foster long-term collaboration.
2. Transparent communication and regular progress updates should be maintained with venture capitalists.
3. Startups should leverage the strategic expertise of venture capitalists for business model development.
4. Adequate planning and financial management practices should be adopted to optimize the use of venture capital funds.

➤ **Conclusion :**

Venture capital funding plays a vital role in the success of startups by offering financial resources, strategic guidance, and market access. The study highlights that startups must strategically align their business objectives with investor expectations to achieve sustainable growth. While venture capital funding presents several advantages, managing investor relations and operational autonomy remains a challenge for startups. By fostering transparent communication and leveraging investor expertise, startups can maximize the benefits of venture capital funding and contribute to economic development.

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MICROPLASTICS : A HIDDEN THREAT TO MARINE LIFE

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➤ ABSTRACT :

Microplastics, defined as plastic particles smaller than 5 mm, have infiltrated marine ecosystems at an alarming rate. These particles originate from various sources, including plastic degradation, industrial processes, and consumer products such as synthetic textiles and personal care items. Unlike larger plastic waste that can be manually removed, microplastics are nearly impossible to clean up due to their microscopic size and widespread dispersion. Their persistent nature poses a growing threat to marine organisms, ecosystems, and even human health.

Marine species unknowingly ingest microplastics, mistaking them for food. Once consumed, these particles can cause internal injuries, disrupt digestion, and lead to bioaccumulation of toxic substances in aquatic food chains. Recent studies have shown that microplastics act as carriers for heavy metals, pesticides, and persistent organic pollutants (POPs), intensifying their harmful effects. The presence of these pollutants in seafood further raises concerns about human exposure to hazardous chemicals.

The growing presence of microplastics in marine environments requires urgent scientific investigation and regulatory interventions. Despite ongoing research, knowledge gaps persist regarding the long-term effects of microplastic accumulation on marine biodiversity and ecosystem stability. Addressing this issue demands a multidisciplinary approach, combining oceanography, toxicology, policy-making, and waste management strategies.

This research paper provides an in-depth analysis of the challenges posed by microplastic pollution, reviewing existing literature, methodologies for detection, and potential solutions. By assessing the environmental, economic, and health implications of microplastics, this study underscores the need for immediate action to reduce plastic waste, enhance recycling processes, and develop sustainable alternatives.

➤ INTRODUCTION :

The exponential growth of plastic production has led to one of the most pressing environmental crises of the modern era: microplastic pollution in marine ecosystems. Every year, millions of tons of plastic waste enter the ocean, breaking down into smaller fragments due to environmental factors such as UV radiation, wave action, and microbial degradation. These microplastics have been found in all marine habitats, from coastal waters to deep-sea trenches, highlighting their widespread infiltration into aquatic ecosystems.

Unlike larger debris that can be removed through traditional cleanup efforts, microplastics evade most filtration systems and persist indefinitely in the environment. Their small size

makes them easily ingested by marine organisms, leading to unintended consequences for marine biodiversity. From microscopic plankton to large marine mammals, no species is immune to the risks associated with microplastic ingestion. This issue extends beyond marine life, as humans who consume seafood may also be exposed to harmful microplastic contaminants.

One of the biggest challenges in addressing microplastic pollution is its transboundary nature. Ocean currents transport microplastics across vast distances, making it difficult to pinpoint sources and implement localized cleanup measures. This global issue requires international collaboration, stringent waste management policies, and innovative technologies to curb plastic pollution at its source. Without immediate intervention, the accumulation of microplastics will continue to pose significant threats to marine ecosystems and food security.

This paper aims to explore the hidden dangers of microplastics in marine environments, focusing on their sources, pathways, and impacts. By synthesizing existing research, the study highlights the urgent need for policy reforms, advancements in microplastic detection techniques, and widespread public awareness campaigns. Understanding the full scope of microplastic pollution is essential to developing sustainable solutions that protect marine biodiversity and ensure long-term environmental health.

➤ **Challenges and Risks**

Microplastic pollution presents a multifaceted challenge, with far-reaching ecological, economic, and health implications. One of the primary concerns is the disruption of marine food chains. Microplastics are consumed by zooplankton, which serve as the foundation of the marine food web. As these tiny organisms ingest microplastics, toxins accumulate and magnify up the trophic levels, affecting larger species, including commercially valuable fish and shellfish. This process, known as biomagnification, raises concerns about the safety of seafood and the potential risks posed to human health.

Beyond ingestion, microplastics interfere with marine organisms in other ways. Studies have shown that microplastic fibers can become entangled in the gills of fish and shellfish, leading to respiratory stress and reduced mobility. Additionally, microplastics can alter the chemical composition of marine sediments, affecting bottom-dwelling organisms such as crustaceans and benthic fish. Changes in sediment quality can disrupt entire ecosystems, leading to biodiversity loss and reduced productivity in marine habitats.

The economic impact of microplastic pollution is also significant. Contaminated seafood can lead to declining consumer confidence, negatively affecting fisheries and aquaculture industries. Coastal tourism industries also suffer, as microplastic accumulation on beaches and in nearshore waters diminishes the aesthetic appeal of popular destinations. Countries that rely on marine-based economies face financial losses, highlighting the urgent need for regulatory measures to mitigate plastic pollution.

Another critical challenge is the lack of standardized methodologies for microplastic detection and monitoring. While advancements in spectroscopy and microscopy have improved identification techniques, discrepancies in sample collection and analysis hinder accurate assessments. The absence of universal protocols makes it difficult to compare data across regions, complicating global efforts to combat microplastic pollution. A unified

approach is necessary to quantify the extent of contamination and develop effective mitigation strategies.

➤ **LITERATURE REVIEW :**

- Extensive research has demonstrated the pervasive presence of microplastics in marine environments, with studies highlighting their detrimental impact on marine organisms. One of the earliest reports on microplastic pollution, published by Thompson et al. (2004), revealed the accumulation of synthetic polymer particles in ocean sediments. This study sparked global interest in microplastic research, leading to an influx of investigations into their sources, distribution, and ecological effects. Subsequent studies have confirmed that microplastics are now present in every marine ecosystem, from surface waters to the ocean floor.
- Research by Rochman et al. (2013) emphasized the chemical hazards associated with microplastics. The study found that microplastics act as carriers for toxic pollutants such as polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs). These chemicals, once absorbed by microplastics, can enter marine food webs through ingestion, posing significant risks to aquatic organisms and humans. The ability of microplastics to accumulate and transport hazardous substances amplifies their environmental threat.
- Another key area of research focuses on the impact of microplastics on marine biodiversity. A study conducted by Cole et al. (2011) demonstrated that zooplankton exposed to microplastics exhibited reduced feeding efficiency and impaired energy intake. This disruption at the base of the food chain has cascading effects on higher trophic levels, potentially leading to declines in fish populations and disruptions in marine ecosystems. Such findings underscore the urgency of addressing microplastic pollution to protect global biodiversity.
- Despite significant progress in microplastic research, knowledge gaps remain regarding their long-term effects. While short-term studies have documented digestive blockages, reduced reproductive success, and physiological stress in marine organisms, the broader ecological consequences remain uncertain. Future research should focus on the chronic impacts of microplastic exposure, including genetic mutations, immune system alterations, and ecosystem-wide disruptions.

➤ **METHODOLOGY :**

This study employs a multi-pronged approach to assess the presence, sources, and impacts of microplastics in marine environments. The research methodology includes field sampling, laboratory analysis, and a comprehensive review of existing literature. By combining empirical data with secondary research, this study aims to provide a well-rounded understanding of microplastic pollution and its consequences.

Field sampling involves the collection of seawater, sediment, and marine organisms from various coastal and offshore locations. Water samples are filtered to extract microplastic particles, while sediment samples undergo density separation techniques to isolate synthetic polymers. Additionally, selected marine species, including fish and shellfish, are examined for microplastic ingestion using tissue digestion and microscopic analysis. These procedures

help quantify the concentration and distribution of microplastics in different marine ecosystems.

Laboratory analysis plays a crucial role in identifying the composition and chemical characteristics of microplastics. Advanced techniques such as Fourier-transform infrared spectroscopy (FTIR) and Raman spectroscopy are used to determine polymer types and detect any adsorbed contaminants. Scanning electron microscopy (SEM) provides high-resolution imaging to analyze microplastic morphology. These methods allow for a detailed assessment of how microplastics interact with marine organisms and the surrounding environment.

In addition to primary data collection, this study integrates a meta-analysis of existing research on microplastic pollution. Peer-reviewed articles, environmental reports, and scientific databases are reviewed to identify trends, gaps, and emerging concerns. This comprehensive approach ensures that findings are contextualized within the broader scientific discourse, providing a solid foundation for recommendations and future research directions.

➤ DISCUSSION AND FINDINGS

The study's findings confirm the extensive presence of microplastics across various marine environments, with the highest concentrations detected near urbanized coastal areas. Microplastics were found in water samples from both surface and deep-sea layers, indicating their widespread distribution. Sediment analysis revealed significant microplastic accumulation in seabed ecosystems, suggesting that these particles settle over time, posing long-term threats to benthic organisms. The ingestion of microplastics by marine life was evident in multiple species, with microscopic fibers and fragments detected in fish, mollusks, and crustaceans.

A key observation is that microplastics serve as carriers for hazardous chemicals. Spectroscopic analysis confirmed the presence of toxic additives such as plasticizers, flame retardants, and heavy metals in collected samples. These substances, once ingested by marine organisms, have the potential to cause cellular damage, reproductive issues, and immune system suppression. The study also found evidence of microplastic-induced oxidative stress in fish, further highlighting their detrimental biological effects.

The economic implications of microplastic contamination are another critical concern. Fisheries and aquaculture industries face increasing risks due to the presence of microplastics in seafood, leading to declining market value and potential health concerns among consumers. Additionally, the accumulation of microplastics in marine habitats contributes to environmental degradation, negatively affecting tourism and coastal economies. The long-term financial burden of microplastic pollution underscores the need for immediate regulatory action and sustainable waste management practices.

Despite advancements in microplastic research, challenges remain in accurately assessing their ecological impact. The study highlights the necessity for standardized methodologies in microplastic detection and monitoring. Differences in sampling techniques, data interpretation, and classification criteria make it difficult to compare findings across regions.

➤ **RECOMMENDATIONS**

To combat the escalating issue of microplastic pollution, immediate and coordinated action is required at multiple levels. One of the most effective strategies is the reduction of plastic production and consumption through sustainable alternatives. Governments and industries must invest in the development of biodegradable plastics, eco-friendly packaging, and innovative materials that minimize environmental harm. Implementing policies that restrict the use of single-use plastics and microbeads in consumer products can significantly reduce microplastic emissions.

Enhancing waste management infrastructure is another critical measure. Improved recycling systems, efficient waste segregation, and advanced filtration technologies in wastewater treatment plants can prevent microplastics from entering aquatic ecosystems. Investing in research on microplastic removal techniques, such as bio-remediation and nanotechnology-based filtration, could provide viable solutions for mitigating pollution at the source.

Public awareness and behavioral changes play a vital role in addressing the microplastic crisis. Educational campaigns should emphasize the environmental impact of plastic waste and encourage individuals to adopt sustainable lifestyles. Promoting reusable alternatives, responsible plastic disposal, and community-led cleanup initiatives can contribute to reducing microplastic accumulation in marine environments. Schools, universities, and media platforms should play an active role in spreading knowledge about microplastic pollution and its consequences.

Finally, global cooperation is essential for tackling microplastic pollution on an international scale. Governments, environmental organizations, and scientific communities must collaborate to establish standardized regulations, data-sharing platforms, and cross-border initiatives. Strengthening environmental policies through legally binding agreements, such as the proposed United Nations treaty on plastic pollution, can drive meaningful change. Only through collective efforts can we ensure the long-term protection of marine ecosystems and safeguard future generations from the risks posed by microplastics.

➤ **CONCLUSION**

Microplastic pollution is an emerging environmental crisis that threatens marine biodiversity, disrupts ecosystems, and raises concerns about human health and economic stability. As plastic production continues to rise, the accumulation of microplastics in marine environments is expected to worsen, exacerbating the challenges faced by marine organisms and coastal communities. Without immediate action, the long-term consequences of microplastic pollution could be irreversible, leading to a decline in marine species and ecosystem resilience.

The findings of this study emphasize the urgent need for a comprehensive, science-driven approach to mitigating microplastic contamination. From reducing plastic consumption to enhancing waste management infrastructure, multiple interventions must be implemented to curb this growing threat. The role of policy-makers, industries, and individuals is crucial in driving the necessary changes to protect marine life from further harm.

Despite ongoing research efforts, significant knowledge gaps remain regarding the full extent of microplastic pollution. Future studies should focus on long-term ecological impacts, human health risks, and innovative solutions for microplastic removal. Interdisciplinary collaborations between marine biologists, chemists, engineers, and policymakers are essential for developing effective strategies to address this issue holistically.

In conclusion, tackling microplastic pollution requires a global commitment to sustainable practices, policy reforms, and scientific advancements. By prioritizing environmental responsibility and fostering a culture of sustainability, society can work towards restoring marine ecosystems and preserving the health of our oceans for future generations. The time to act is now, before microplastics become an irreversible threat to life on Earth.

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EVOLUTION, FINANCIAL GROWTH, AND RECOGNITION: A COMPREHENSIVE HISTORY OF SHIPPING CORPORATION OF INDIA (SCI) AND ITS ACHIEVEMENTS.

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➤ ABSTRACT :

The Shipping Corporation of India (SCI) is one of the oldest and largest public sector shipping companies in India. Founded in 1961, it has evolved from a small regional player to a global leader in the shipping industry. The company's journey has been marked by milestones in growth, expansion, and resilience amidst global challenges. This paper explores the history and evolution of SCI, its financial performance over the years, the awards and accolades received, and the company's role in shaping India's maritime industry. The study also highlights SCI's strategy for growth, diversification, and contributions to India's economy and global trade.

Keywords : Shipping Corporation of India, Financial Growth, Evolution, Maritime Industry, Awards, Seafarers, National and International Recognition.

➤ INTRODUCTION :

This paper is a descriptive and analytical research describing the history, evolution, financial growth and the client base that has helped the company to win many awards and recognitions in six decades. The Shipping Corporation of India (SCI), established by the Indian Government in 1961, has had an extraordinary journey over the past six decades. As a prominent public sector entity, SCI has been integral to India's shipping, trade, and overall economic growth. Initially, the company began its operations with few ships but gradually expanded into a diversified company with significant interests in various sectors of the shipping industry. Today, SCI holds an essential place in the global shipping arena and continues to contribute to the India's economy.

This paper provides an in-depth survey at the history of SCI, its financial growth, the strategic initiatives that led to its success and the awards and recognitions it has received over the years. The paper is divided into several sections: an overview of SCI's history and evolution, its financial growth and sustainability, its client base, its recognition through awards, and a final section on its future directions and challenges.

➤ LITERATURE REVIEW :

1. **(Kumar, 2003)** in their research paper mentioned that SCI was incorporated in the early 1960s as a public sector enterprise by merging the Eastern Shipping Corporation and Western Shipping Corporation.

2. (Sharma, 2006) through their findings identified that SCI was the key player in global shipping and have a substantial share of India's maritime trade.
3. (Narayan & Deshmukh, 2012), in their survey mentioned that SCI grew from basic liner shipping to diversification into various segments of the shipping industry, including bulk carriers, crude oil tankers, offshore supply vessels, and container services.
4. (Sharma & Agarwal, 2009) explored the client base of SCI across several industries. SCI contributed significantly to various sectors in India, including steel, mining, oil, gas, power, petrochemicals, and logistics.
5. (Kapoor & Rao, 2015) through their research paper identified that SCI's role in LNG transportation has gained prominence, marking a significant diversification in its services. They also mentioned that SCI's collaboration in the LNG transportation sector through joint ventures like India LNG Transport Company No. 1 & 2 Ltd. has solidified its position as a key player in the global energy transport sector
6. (Nayak, 2012), mentioned that SCI has played a vital role in ensuring India's energy security by maintaining a fleet capable of transporting crude oil and petroleum products during times of national emergency.
7. (Singh, 2011) through their finding mentioned that SCI focused on adopting international best practices in safety, sustainability, and customer satisfaction.
8. (Banerjee & Banerjee, 2014), in their research paper mentioned that SCI focused on modernizing its fleet and adopting green technologies and align with global shipping trends, enhancing its competitive edge in an increasingly eco-conscious global market.

Though several researches has been done on evolution, financial performance, etc very few case studies have been done on waterways transportation companies in India from the inception to the current generation. Hence the researcher decided to choose the topic “Evolution, Financial Growth, and Recognition: A Comprehensive History of Shipping Corporation of India (SCI) and its Achievements.”

➤ **OBJECTIVES :**

The primary objectives of this study are:

1. To explore SCI's journey from its inception in 1961 to becoming one of the largest and most prominent players in the global maritime industry.
2. To examine SCI's financial performance over the years, focusing on profitability, sales growth, operating profit, and EPS, and understanding the company's financial sustainability.
3. To study the awards and achievements and recognitions gained over the years.
4. To study the client base whether it is domestic or international.

Key findings:

Findings are divided into five sections:

Section I : The Evolution of The Shipping Corporation of India Ltd. (SCI):

Year	Event
1961	SCI was incorporated on October 2, 1961, through the amalgamation of Eastern

Year	Event
	Shipping Corporation and Western Shipping Corporation, marking India's first public sector shipping company.
1964	SCI diversified into crude oil transportation.
1973	Jayanti Shipping Company merged with SCI.
1975	SCI acquired the first Indian Very Large Crude Carrier (VLCC). SCI also formed Irano Hind Shipping Company, a joint venture with Iran Shipping Lines.
1984	SCI diversified into the offshore segment by acquiring Offshore Supply Vessels (OSVs).
1986	Mogul Line Ltd. merged with SCI.
1987	SCI set up its own Maritime Training Institute (MTI) in Mumbai, a regional training center by UNCTAD. MTI also commissioned India's first Global Maritime Distress Safety System (GMDSS) Laboratory.
1991	SCI diversified into chemical tankers and cryogenic operations.
1992	SCI underwent the disinvestment of 18.5% in favor of Financial Institutions, Mutual Funds, Banks, and Foreign Institutional Investors (FIIs). SCI's stock was listed on major Indian stock exchanges.
1993	SCI acquired Cellular Vessels and started the Cellular Container Service.
1994	SCI conducted its second divestment of 1.37% in favor of FIs, Mutual Funds, and Banks.
2000	SCI was conferred the 'Mini Ratna' status by the Government of India, enhancing the company's Board powers for capital investment.
2001	SCI diversified into LNG transportation through joint venture companies with consortium partners, including Japanese Shipping Lines MOL, NYK, and K-Line; Qatar Shipping Company, Qatar Gas Transport Company, and Petronet LNG.
2004	SCI completed International Ship & Port Facility Security Code (ISPS) certification for 70 ships ahead of schedule.
2005	SCI acquired the largest ship in India's registry, a Very Large Crude Carrier (VLCC), 316,000 DWT.
2006	SCI crossed the Rs. 1000 crore mark in net profit again and received an 'Excellent' rating under the MoU system for 16 consecutive years.
2007	SCI crossed the Rs. 1000 crore mark in net profit for the third consecutive year and won the 'Ship Owner Operator of the Year 2007' award. It also signed a major shipbuilding order with Hyundai of Korea for 4 Aframax Crude Oil Tankers and 2 LR-II size Product Tankers.
2008	SCI obtained ISO 9000 certification, was conferred 'Navratna' status by the Government of India, and issued bonus shares in a 1:2 ratio.
2009	SCI commenced independent management of LNG tankers and was awarded 'The Safest and Most Environmentally Conscious Indian Shipping Company' on World Maritime Day 2009.
2010	SCI launched a Further Public Offer (FPO), which reduced the Government's shareholding in SCI from 80.12% to 63.75%.
2015	SCI achieved compliance with the Integrated Management System (IMS) for all ships and establishments, covering Environmental Management System, OHSAS

Year	Event
	18001: 2007, and Quality Management System ISO 9001: 2008.
2017	SCI's fleet strength crossed 6 million deadweight tonnage (dwt) with 70 vessels.
2018	SCI's Multi Purpose Support Vessel "SCI Sabarmati" supported the Indian Navy in sea trials of India's first Deep Submergence Rescue Vehicle (DSRV).
2019	SCI expanded into technical consultancy services for government departments, including m.v.'Akbar' disposal and ferry services for the Statue of Unity.
2020	SCI commenced India-Male Service in September 2021 and launched its Diamond Jubilee Celebrations on October 2, 2021.
2021	SCI celebrated the global historic event of the first-ever "All Women Officer Sailing" on M.T. Swarna Krishna on March 7. SCI also entered inland waterways through an MOU with IWAI, and inland vessels were transferred to Inland & Coastal Shipping Ltd. (ICSL), SCI's 100% subsidiary.

Source: Compiled by the author based on data from SCI website.

Journey of the Shipping Corporation of India (SCI):

Aspect	Details
Starting Point	SCI started as a small shipping company with only 19 ships.
Growth and Fleet Expansion	SCI is now the largest shipping company in India with a diverse fleet including bulk carriers, crude oil tankers, product tankers, container vessels, passenger ships, LPG carriers, and offshore supply vessels.
Market Share	SCI owns and operates about one-third of India's total shipping capacity, serving both Indian and international trade.
Services Provided	SCI offers break-bulk shipping, international container services, transporting liquids and dry goods, offshore services, and passenger services.
Management of Vessels	SCI manages and operates ships for various government departments and organizations.
Contribution to National Economy	SCI has significantly contributed to India's EXIM (export and import) trade and national revenue by earning foreign exchange.
Role in Emergencies	SCI has ensured an uninterrupted supply of crude oil during emergencies, supporting India's economy.
Globalization and Liberalization Impact	The liberalization and globalization of the economy have provided SCI with opportunities to grow and diversify, aided by a modern fleet and skilled workforce.
Profitability and Performance	SCI has maintained a strong track record of profitability since its inception, with excellent performance ratings for 18 consecutive years under the MoU with the Government of India.
"Navratna" Status	SCI was granted "Navratna" status by the Government of India in 2008, giving it more autonomy in decision-making and investments.

Aspect	Details
Growth Strategies	SCI ensures profitability through fleet optimization, niche market services, strategic partnerships, and cost-cutting measures.
Safety and Environmental Focus	SCI is committed to safety and environmental protection, earning national and international awards for excellence.
Future Growth Areas	SCI is focusing on energy transportation (especially LNG) and expanding its container services, with plans for strategic partnerships and investments.
LNG Transportation	SCI is the only Indian shipping company involved in LNG transportation, with joint ventures for LNG vessels, managing onboard operations and technical management.
Goal for the Future	SCI aims to become a world-class international shipping company, contributing to India's growth and prosperity.

Source: Compiled by the author based on data from SCI website.

Section II: Shipping Corporation of India Awards and Recognition (1993 - 2024)

Year	Total Number of Awards	Awards and Categories
2024	10	<ul style="list-style-type: none"> - Appreciation by National Cultural Fund, Ministry of. Culture (Category: Recognition) - SCOPE-WIPS Third Prize at 32nd Regional Meet, Nagpur (Category: Awards for Excellence) - Shipping Company of the Year - Indian Award at 11th ShipTek (Category: Industry Award) - Skoch ESG Award (Category: ESG) - Outstanding Indian Employers of Seafarers as 1st Rank (Category: Seafarer Welfare) - 10th PSU Awards - CMD Leadership Award (Category: Leadership) - 10th PSU Awards - Environment & Sustainability Award (Category: Sustainability) - WIPS Best Enterprise Award (Category: Women in Shipping) - CEO of the Year Award (Category: Leadership)
2023	10	<ul style="list-style-type: none"> - The Maritime Standard Editor's Choice Award (Category: Recognition) - Samudra Manthan Award - Shipping Company of the Year (Category: Industry Award) - Maritime Excellence Award - CSR (Category: CSR) - National Language shield 2018-19 (Category: Hindi Language Promotion) - National Language Sheild 2017-18 (Category: Hindi Language Promotion) - ShipTek Lifetime Achievement Award (Category: Lifetime Achievement) - ShipTek Tanker Operator of the Year (Category: Tanker Industry)

Year	Total Number of Awards	Awards and Categories
		<ul style="list-style-type: none"> - NMDC Kochi Award (Category: Shipping Award) - Outstanding Indian Ship Owning Companies as 1st Rank (Category: Shipping Company) - Outstanding Indian Employers of Seafarers as 1st Rank (Category: Seafarer Welfare)
2022	14	<ul style="list-style-type: none"> - Seajob - Best Employer of the Year (Indian Flag) (Category: Employer of the Year) - WIPS Best Activity Report - 3rd Prize (Category: Women in Shipping) - Shipping Company of the Year 2022 (Category: Industry Award) - Woman of Exemplary Courage (Category: Gender Equality) - Excellence in Gender Diversity (Category: Gender Equality) - Memento to CMD (Category: Recognition) - Best Indian Employer of Seafarers (Category: Seafarer Welfare) - Best Indian Employer of Seafarers - Certificate (Category: Seafarer Welfare) - Certificate - Best Indian Ship Owning Company (Category: Ship Owning) - Sagar Samman Award - Best Indian Ship Owning Company (Category: Ship Owning) - Gujarat Star Award Certificate (Category: Regional Award) - Maritime Personality of the Year Award (Category: Industry Award) - CMMI Annual Award (Category: Award for Excellence) - Eastern Star Award (Category: Award for Excellence)
2021	15	<ul style="list-style-type: none"> - Samudra Manthan Award 2021 Certificate (Category: Shipping Award) - Champion of Diversity Award (Category: Diversity) - National Maritime Search & Rescue(NMSAR) Award (Category: Rescue & Safety) - Winner of Super Brand of the Year (Category: Brand Award) - The Maritime Standard Personality of the Year (Category: Personality Award) - Winner of Shipping & Logistics Superbrand of the Year (Category: Brand Award) - Flagship of the Indian Maritime Trade - MALA Award (Category: Shipping Industry) - Woman Star in Shipping & Logistics (Category: Women in Shipping) - Excellence in Maritime & Logistics Sector (Category: Sector Excellence) - India Maritime Awards felicitating SCI for 60yrs of Service (Category: Milestone Achievement) - Governance Now 8th PSU Awards - HR Excellence (Category: HR Excellence) - Governance Now 8th PSU Awards - CMD Leadership Award

Year	Total Number of Awards	Awards and Categories
		(Category: Leadership) - Service Provider of the Year - National Enterprise (Category: Service Award) - Best CSR Practices in difficult times (Category: CSR) - CEO with HR Orientation (2021) (Category: Leadership)
2020	14	- World HRD Congress 2020 (Category: HR Recognition) - CEO with HR Orientation - Mrs. H. K. Joshi, CMD-SCI (Category: HR Leadership) - WIPS - Best Enterprise Award (Category: Women in Shipping) - WIPS - Lifetime Achievers Award, 2020 - Mrs. M.S (Category: Lifetime Achievement) - The National Union of Seafarers of India (NUSI) Award (Category: Seafarer Welfare) - Nautical Institute, London - Crew Management during Covid-19 (Category: Crew Management) - Nautical Institute, London - Certificate of Appreciation (Category: Recognition) - TMSA- The Shipping Company of the Year (Category: Industry Award) - MaritimeSheEO 2020 - ‘Best Practices in Diversity’ (Category: Diversity Award) - SKOCH Award - Environment and Sustainability (Category: Sustainability) - Diversity & Equality Award - Seatrade Maritime Award (Category: Diversity) - WISTA India Personality of the Year 2020 Award - M (Category: Women in Shipping) - Mumbai Regional Round of AIIMA-4th National Competitions (Category: Competitions) - ‘Strategic Investments’ and ‘HR Excellence Award’ (Category: HR and Investments)
2019	5	- CMA CFA Award (Category: Finance) - CMA Award 2019 (Category: Finance) - 6th CMA-CFO Award - Mrs. HK Joshi, CMD, SCI (Category: CFO Award) - Samudra Manthan Award 2019 (Category: Industry Award) - Samudra Manthan Award 2019 Certificate (Category: Industry Award)
2018	7	- Samudra Manthan Award 2018 (Category: Shipping Award) - Samudra Manthan Award 2018 Certificate (Category: Shipping Award) - Cricket Match - Winner SCI vs CMT (Category: Sports) - India Maritime Award (Category: Industry Award) - India Maritime Awards (Category: Industry Award)

Year	Total Number of Awards	Awards and Categories
		<ul style="list-style-type: none"> - Western India Regional Council Award (Category: Regional Award) - Best Woman Employee (Category: Employee Recognition)
2017	3	<ul style="list-style-type: none"> - Guest of Honor Award (Category: Recognition) - Most Caring Award (Category: Welfare Award) - India Seatrade Award (Category: Shipping Award)
2016	8	<ul style="list-style-type: none"> - 53rd National Maritime Day Award (Category: National Maritime Award) - Most Compassionate Employer of Indian Seafarers Award (Category: Seafarer Welfare) - Institute of Public Enterprises - Women Super Achiever Award (Category: Women in Shipping) - Most Influential CFOs of India Awards (Category: Finance) - India CFO Award (Category: Finance) - GRE Champion (Category: Excellence Award) - CFO Award for Excellence (Category: Finance) - O&M Contract Award (Category: Contract)
2015	5	<ul style="list-style-type: none"> - Tennis Cricket Tournament Award (Category: Sports) - Silver Award (Category: Recognition) - Cricket Match - Winner SCI vs CMT (Category: Sports) - Samudra Manthan Award (Category: Industry Award) - Most Influential CFOs of India Awards (Category: Finance)
2014	4	<ul style="list-style-type: none"> - Organization with Innovative HR Practices Award (Category: HR Award) - Port Container Terminal Award (Category: Shipping Award) - Maritime Training Institute of SCI, Mumbai Award (Category: Training Award) - CMA CFO Award (Category: Finance)
2013	4	<ul style="list-style-type: none"> - Appreciation Award (Category: Recognition) - Institute of Shipping Award (Category: Shipping Award) - Charter Agreement Award (Category: Shipping) - The Gateway Awards (Category: Shipping)
2012	4	<ul style="list-style-type: none"> - NIPM National Award for Best HR Practices (Category: HR) - BHP Award (Category: Industry Award) - Western India Regional Council Award (Category: Regional Award) - Plaque of Appreciation (Category: Recognition)
2011	6	<ul style="list-style-type: none"> - The Corporate Social Responsibility Award (Category: CSR) - The Education & Training Award (Category: Training)

Year	Total Number of Awards	Awards and Categories
		- The Tanker Operator Award (Category: Tanker Industry) - Platinum Award (Category: Award for Excellence) - International Maritime Offshore Logistics Award (Category: Offshore Logistics)
2010	1	- Sole Underwriter & Mandated Lead Arranger Award (Category: Finance)
2007	1	- KEIC Export Credit Facility Award (Category: Export Finance)
2005	1	- Sign of Honour Award (Category: Recognition)
1993	1	- Partnership-Cooperation-Growth Award (Category: Collaboration Award)

Source: Compiled by the author based on data from SCI website.

- The number of awards has increased significantly over the years, with **2022** and **2021** having the highest number of awards (14 and 15 respectively).
- Awards cover a wide range of categories, including **Industry Awards**, **Seafarer Welfare**, **Leadership**, **Diversity & Equality**, and **Finance**.

Total Number of Awards by Category

Category	Total Number of Awards
Recognition	19
Industry Award	23
Seafarer Welfare	9
Leadership	10
CSR (Corporate Social Responsibility)	4
Shipping Award	12
Women in Shipping	8
Diversity & Gender Equality	5
Finance	9
Training	3
Contract	1
Sports	3
Offshore Logistics	1
Collaboration Award	1
Award for Excellence	4
Regional Award	3

Key Observations :

- **Industry Awards** have the highest number, with **23** awards.
- **Recognition** awards also stand out with a total of **19** awards.
- Other categories such as **Shipping Award, Finance, Seafarer Welfare, and Women in Shipping** follow closely, showcasing the company's broad recognition across various domains.
- Categories like **Contract, Offshore Logistics, and Collaboration Award** have won the least number of awards (1 each).

Section III: Summary of Financial Growth (2013 to 2024):

Indicator	Mar-13	Mar-24	Increase (₹ in crore)	Percentage Change
Sales	₹4,196 crore	₹5,046 crore	₹850 crore	20.3%
Expenses	₹3,942 crore	₹3,622 crore	-₹320 crore	-8.1% (Decrease)
Operating Profit	₹253 crore	₹1,424 crore	₹1,171 crore	463.7%
Net Profit	₹-114 crore	₹612 crore	₹726 crore	636.8%
EPS	₹-2.45	₹13.14	₹15.59	636.7%
Reserves	₹6,150 crore	₹6,498 crore	₹348 crore	5.7%
Total Liabilities	₹16,089 crore	₹11,523 crore	-₹4,566 crore	-28.4% (Decrease)
Total Assets	₹16,089 crore	₹11,523 crore	-₹4,566 crore	-28.4% (Decrease)

Source: Compiled by the author based on data from SCI website & moneycontrol.

Key Insights:

- **Sales** have increased by **₹850 crore** (20.3%) from ₹4,196 crore in 2013 to ₹5,046 crore in 2024.
- **Expenses** have decreased by **₹320 crore** (8.1%) from ₹3,942 crore in 2013 to ₹3,622 crore in 2024.
- **Operating Profit** has seen a significant increase of **₹1,171 crore** (463.7%) from ₹253 crore in 2013 to ₹1,424 crore in 2024.
- **Net Profit** has improved by **₹726 crore** (636.8%) from a loss of ₹-114 crore in 2013 to a profit of ₹612 crore in 2024.
- **EPS** has risen by **₹15.59** (636.7%) from ₹-2.45 in 2013 to ₹13.14 in 2024.
- **Reserves** have grown by **₹348 crore** (5.7%) from ₹6,150 crore in 2013 to ₹6,498 crore in 2024.
- **Total Liabilities** and **Total Assets** have both decreased by **₹4,566 crore** (28.4%) from ₹16,089 crore in 2013 to ₹11,523 crore in 2024, indicating reduced financial obligations and asset base.

Section IV : Client base of Shipping Corporation of India :

Industry	Clients
Steel and Mining	Steel Authority of India Ltd., Bharat Forge Ltd., Essel Mining, Sterlite Industries Ltd.
Power and	Bharat Heavy Electricals Ltd., Hindustan Petroleum Corporation

Industry	Clients
Electrical	Ltd., Chennai Petroleum Corporation Limited, Mangalore Refinery & Petrochemicals Ltd.
Oil and Gas	Oil & Natural Gas Corporation Ltd., Reliance Industries Ltd., Hindustan Petroleum Corporation Ltd., Bharat Petroleum Corporation Limited, Petrodiamond, Vitol, Trafigura, Petronas, Petrobras, UNIPEC, Shell, BP, Koch, IMR Resources, Noble, Panocean, BRPL
Shipping and Logistics	M/s. Geologistics Pvt. Ltd., Marimpex, Martrade, Amarante, P'sons, Comtrack, Crossbridge, ST Shipping, Scorpio, Petronet LNG Limited
Media and Publishing	M/s. HT Media Ltd., New Delhi
Food and Exports	M/s. Al Kabeer Exports Pvt. Ltd.
Pharmaceutical and Chemicals	MarocPhosphore, BP, Shell
Renewable and Clean Energy	British Gas India Ltd., BRPL
Chemical and Petrochemical	Reliance Industries Ltd., Petronas, Petronet LNG Limited

Source : Compiled by the author based on data from SCI website.

The company has a client base across various industries and sectors, thereby contributing to sustainable viksit Bharat.

Section V: Future prospects and challenges for SCI

Future Prospects and Opportunities for SCI:

1. SCI can grow and expand its fleet in the LNG transportation sector, which is seeing high demand due to rising global energy needs.
2. SCI can adopt new technologies like automation, green technologies, e ships and boats and eco-friendly vessels.
3. SCI can Expand joint ventures, especially in LNG transportation, offshore services, and renewable energy logistics.
4. SCI has a chance to expand its container shipping services
5. Expanding its partnership with the Inland Waterways Authority of India (IWAI) can help SCI explore inland shipping, which can be cost-effective and environmentally friendly.
6. SCI can focus on the welfare of its seafarers by improving training programs, working conditions, and promoting diversity, including attracting more women into the maritime sector.
7. SCI can align with the Indian government's "Sagarmala" initiative to invest in port infrastructure, improve logistics, and explore new coastal shipping opportunities.

Future challenges for SCI :

SCI may face the following challenges:

1. Global competition from international shipping companies

2. If SCI does not adopt green energy or alternative fuel it may keep facing the fluctuating fuel pricing leading to reduction in profitability.
3. It may face geopolitical tensions, trade wars and disruption in trade flow.
4. Attracting and retaining skilled personnel, especially seafarers, while ensuring their safety and welfare, remains an ongoing challenge.
5. Another ongoing challenge is adapting both national and international regulatory changes.

➤ **CONCLUSION :**

Shipping Corporation of India (SCI) has grown and changed a lot since it started in 1961, keeping up with global trends and new technologies. Its history shows a strong focus on growth, modernization, and staying competitive in the global shipping industry. SCI has earned many awards and recognitions for its excellent operations, safety, and customer service. With a wide range of clients, SCI remains an important part of both the Indian and global shipping sectors. Despite facing financial challenges, SCI's smart decisions help it stay strong and prepared for future success.

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A RESEARCH PAPER ON : USE OF SOCIAL MEDIA AND ITS IMPACT

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➤ ABSTRACT

Social media serves as a platform for people around the world to share their views and discuss various issues. To fully understand its impact, it's essential to first define what social media means. Social media refers to the online interactions between individuals or groups where they create, share, and sometimes exchange ideas, images, videos, and other content within virtual communities. Today's children are growing up in a digital environment, surrounded by mobile devices and social networking sites like Twitter, MySpace, Facebook, and Orkut, making social media an integral part of their lives. These platforms are changing how young people interact with their peers, parents, and even how they engage with technology. The effects of social networking are twofold. On the positive side, social media can be a valuable tool for professionals, helping young individuals promote their skills and connect with business opportunities. Social networks also provide efficient ways to network and build professional relationships. However, there are negative aspects as well, such as the risks associated with online communities. One of these dangers is cyber bullying, a form of harassment carried out through electronic devices. This paper delves into the various aspects of social media, exploring both its positive and negative impacts, with a particular focus on its influence in areas like health, business, education, society, and youth. It will be examined in this paper that how society impacts at large using social media.

Keywords : Social Media, Social Networking, Digital Environment, Professional Relationships, Electronic Devices, Society Impacts.

➤ INTRODUCTION :

The term social in regard to media suggests platforms enable communal activity. Social media is the platforms where people connect with each other in bulk socially. It allows to share content globally in real time. Social media can be used or accessed by people through various applications on mobile devices, laptops, computers, and all other digital devices. Different types of people despite of their age difference connect through social media. Social media can also be operated through different web-based apps or platforms. Over 100 million of people are registered on popular kinds of social media, e.g. You Tube, WhatsApp, Instagram, Twitter, WeChat, Share Chat, Facebook, Pinterest, QZone, Weibo, VK, Tumblr, Baidu Tieba, Threads and LinkedIn.

There is an evolution in the use of social media from Traditional Medium to Digital Medium. Social media differs from traditional media in quality, reach, frequency, usability, relevancy, and permanence. Traditional media, which follows strict editorial guidelines, while

social media is easy and free to share various content. In social media content can be easily edited or deleted while in traditional media content is kind of permanent.

The impact of social media can be good as well as bad on the people, environment and society as a whole.

➤ **OBJECTIVES**

Social media has affected on societal life; hence research is needed because its effects are one of the most debated topics in recent days.

It's important to learn how social media affects the way people act, how governments work, and the traditions and values of different cultures. Knowing this helps us deal with the complicated world we live in today.

➤ **SCOPE**

Studies about social media have quickly increased. Many researchers are exploring whether using social media is linked to mental health and well-being. This topic has led to a lot of debate and attention.

In recent years, there's been a huge surge in research exploring how using social media affects people's well-being, like their happiness, and their struggles, like depression.

The impact and use of social media will guide us to know, how much we have to use social media instead of its extensive use and how it will affect our lives as well as the environment by less use of social media and extensive use of social media.

➤ **REVIEW OF LITERATURE**

Current Opinion in Psychology

Social media use and well-being : What we know and what we need to know

Patti M. Valkenburg

Research on how social media use affects well-being and mental health has grown rapidly, with 27 major reviews published between 2019 and 2021. These reviews, including meta-analyses and systematic studies, often show conflicting results about social media's impact. This umbrella review aims to explain these differences, highlight gaps in the research, and suggest directions for future studies.

The Impact of Social Media on Society : A Systematic Literature Review

Amina Saleh Omar, Technical University of Mombasa

Kennedy O Ondimu, Technical University of Mombasa

This paper reviews research from 2016 to 2024 on how social media impacts communication, behaviour, politics, culture, mental health, and education. It highlights both the positive effects, like global connection, community building, and access to resources, and the negative effects, such as misinformation, social isolation, polarization, anxiety, and cyberbullying. The review emphasizes the need for media literacy, critical thinking, and ethical digital practices to balance social media's benefits and drawbacks. It also calls for future research to find technological and policy solutions to these challenges.

➤ **RESEARCH METHODOLOGY :**

The method used in this research paper is analysing the situations going around and reading some research paper online and taking it as secondary data.

➤ **HYPOTHESIS :**

Social media is useful at the same time is harmful to humans, environment and society.

➤ **DATA ANALYSIS**

By studying and reading some research paper; the following is the analysed information of data

1. In 2023, approximately five billion people worldwide engaged with social media platforms, with China and India boasting over one billion and 860 million users, respectively.
2. The United States alone recorded 308 million users, while Europe's social media population reached nearly 680 million.
3. Meta Platforms, the parent company of Facebook, Instagram, and WhatsApp, reported over \$134 billion in annual revenue in 2023

Positive Impact :

Social media offers positive impacts such as improved connectivity (87% during COVID-19), diverse interactions (69% of teens), professional networking (84% of organizations use it for recruitment), and raising awareness on social and political issues (77% of users).

Negative Impact :

Social media also has negative effects, including mental health issues like anxiety and depression (57% of teens), widespread cyberbullying (over 50% of teens), misinformation concerns (28% of respondents), and addiction risks (39% feel anxious without access).

➤ **IMPACT OF SOCIAL MEDIA IN DIFFERENT AREAS :**

- **Social behaviour :** Social media has transformed the dynamics of interpersonal relationships, altered communication patterns, and shaped self-perception. Examining its influence on behaviour, mental health, and the formation of online communities is essential to comprehend the broader societal shifts.
- **Politics :** The significance of social media in politics is considerable, from shaping electoral campaigns to influencing public opinion. Investigating its impact on political discourse, the spread of information, and the emergence of new political movements is vital for a comprehensive analysis.
- **Cultural norms :** Social media shapes culture, fashion, and social conventions. Understanding how online platforms contribute to the evolution of cultural expressions, as well as the potential challenges such as cultural appropriation, provides insights into the ongoing transformation of cultural landscapes.
- **Environment :** Social media can be useful for Spreading Environment Awareness, by Mobilizing Support and Action and by Promoting Sustainable Practices. It also had

negative effects like, Electronic Waste (E-waste), Energy Consumption, Overconsumption and Consumerism.

➤ **FINDINGS :**

Teenagers' mental health is being damaged by heavy social media use, a report has found. Research from the Education Policy Institute and The Prince's Trust said wellbeing and self-esteem were similar in all children of primary school age.

Boys' and girls' wellbeing is affected at the age of 14, but girls' mental health drops more after that, it found. A lack of exercise is another contributing factor - exacerbated by the pandemic, the study said.

Social media had changed life of many people like a reel star Faisu Shaikh, Jannat Zubair, Reem Shaikh, etc. have become people with many followers which helps them to get famous and many offers in acting industry. Interactions between people who are far from each other have become easier and more convenient.

➤ **SUGGESTIONS :**

People can use social media as a career making medium. Social media should be used only when it is necessary. Along with social media friends try to make interaction with people around without using any digital devices, means avoid virtual interaction and start a real talk. Use of social media is good but extensive use of social media is harmful.

➤ **CONCLUSION :**

Social media has become an influential force in modern life, shaping the way we communicate, share information, and engage with the world. While it offers powerful opportunities for connection, education, and positive social change, it also presents serious challenges, such as misinformation, mental health concerns, and environmental impacts. To make the most of social media's potential, it is essential to promote responsible use, encourage critical thinking, and develop strategies that minimize its negative effects while maximizing its benefits for individuals and society as a whole.

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The Impact of Social Media on Society: A Systematic Literature Review

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AN IMPLICATION STUDY OF ACCOUNTING NEW TRENDS IN DOMESTIC INDUSTRY

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➤ ABSTRACT :

Accounting is a much diversified field, in this field tremendous new trends are coming in Day by day. While we have not that very well that we accepted GAAP- That is Generally Accepted Accounting Principles. It is known very well that we accepted all over the world the common methods and common principles for the accounting procedure. I am coming to find out what the changes have been to the domestic industry due to new accounting trends in businesses. The world is coming to change. This Era is a digital era where all information is gathering online stores. Technology accepting big data, cloud accounting platforms which have a Block-Chain and Forensic Accounting, Data Analytics, Mobile Technology, Automated Accounting Processor etc. are the part of this emerging technology. Nowadays a business industry is using revolutionized artificial intelligence technology which uses the Natural Language Process (NLP) and Machine learning (ML) While using Claude accounting users can accept the application remotely anywhere and data can be analyzed anywhere. Analytics Data is very significant to any industry and in the domestic world it is truly important due to the advancement in automatic accounting with AI that is Artificial Intelligence. The data can be possibly hacked by the hackers or breaches by someone and it's a big risk to industry. For that purpose data security is a high level in domestic industry. Data Analytics help to industry exact position of businesses such as a ratio of a financial statement can be shown the actual position of the business this can possible it Data Analytics as we passed a few years era of covalent atomic and the new concept was introduced is workforce which is work from home. That was the time this concept is a very popular due to employee working conditions of the employee he cannot binding to physically attend the office he can use companies remote workforce to work from home or any places which is suitable for employee. But day by day all the circumstances are changing and Risk Capacity of the business is increasing, especially in the field of Data Storage and all the AI generated automated machine learning software's which manages the business accounting.

Keywords : Accounting, Domestic Industry, Accounting Software, Cloud Accounting, Generative AI in accounting, Data Analytics.

➤ **INTRODUCTION :**

The question is to find the research gap between industry and domestic industry with impact of new emerging trends, what is Domestic Industry? And is it affected by the digital technology of the business? These effects adverse or favorable? This needs to be checked with this study. While we are talking about the industry, the industry is the commercial place where goods and services are produced and supplied to various customers across the country. Industry needs to show the financial position at each financial year end and for this purpose industry hires the Professional Accountant who manages the business all day to day transactions. Nowadays all transactions have been managed or entries made by Digital Accounting Software's. But we need human resources to manage all the transactions and check the accuracy of the transactions. As we studied the domestic industry is the industry who produces goods and services within the country and sells within the country. Examples are oil, cement, bricks, Timber extraction, textile and agriculture, all examples are on high levels. If we think on ground level then we can suggest the domestic business are Papad making, Pickles, Sewing, Clothing business, basket making, homemade spices, decoration business, etc. for the taking of this business in accounting level this will be manageable but the scope of business is expand all over the country then this cannot be manageable and for this purpose we make sure we need a human resources for managing this business at every levels. But nowadays on the Play Store we can see various applications who can manage your data very easily. Let us take an example of Pickles' business. If they want to manage the credit sales to customers then we can use the application from Play-store is **‘Mony : Budget & Expenses Tracker’** in this one this application can manage the business statistics, budgets, savings, credit history of customers, debts and this will be customized according to the business needs. And even though this is only one application on Play-store! There are a number of applications related to this. For that reason researchers need to find out the changes of business after Covid 19 and the digital era started.

➤ **RESEARCH DESIGN :**

A research design is the tool that helps the researcher to study the data in various forms. Basically it goes through step by step. In the research design the researcher comes to the Objective of the Study, Data Collection Methods, Sampling, Data Collection Instruments, Data Analysis, and Time frame, Resources and Data Presentation and Reporting. This study is based on purely secondary data and this data is gathered from various government websites and original data analytics published by governments. This study depends on the gap between 2020 to 2025.

Objectives of Domestic Industry :

1. To know the Domestic Industries working conditions after the digital era.
2. To examine the procedure of accounting with help of various technological applications related to domestic industry.
3. To study the various software for accounting and its types.
4. To study the categorization of the domestic industry with emerging trends in accounting.
5. To find out the helpful data analytics tools and cloud accounting security tools.

Domestic Industry : Meaning, Definition and Objectives.

Meaning :

A Domestic Industry is the industry where one country produces the goods and services within a country and sells them in the same country. In this one we can take the example of Oil, textiles and manufacturing.

Definitions :

“ Industry is the work and process involved in collecting Raw Material and making into them products (finished goods) and it is sold within a country this industry is known as Domestic Industry.”

“ The domestic producer as whole engaged in the manufacturer of the like any article or any activity connected therewith or those whose collective output of the said article constitute a major proportion of the total domestic production of that article except when such producer are related to the exporter or importer of the alleged dumped article or are themselves importer thereof in such case the term domestic industry.”

There are no specific definitions of domestic industry but we can define the industry based on ownership, weight and bulk of raw material and finished products, capital investment etc.

Significance :

1. It creates jobs in lower markets.
2. This will help to uplift the lower economically backward classes.
3. Domestic businesses are prioritized and that is the reason customers do not believe so much of foreign goods or he is not confident in those goods.
4. Since there is less competition, the producer himself is the seller, so costs are reduced and profits remain high.
5. Domestic industry started financial assistance through Make In India.
6. Since it is a family run business, there is a high possibility that these businesses will be passed down from one generation to the next generation.

Accounting :

Accounting is the process to classify, summarizing the transactions and maintained the books of accounts in various forms. It is a process which keeps the records of all transactions in the business and not only the recording of the transactions but vouching, verification, classification, summarization, analysis of them and keeping a record in original forms.

a. Technological Changes in Accounting.

For the past few decades accounts were managed in manual manners, that is, with human intervention and such people were called Accountants (Munimji). He would observe everything and record it in his notebook in his own way. This method continued until the advent of computers. Then, in this manner, the accountant (Munimji) would manage and record the transaction as he pleased. Overtime, computers were invented and new revolutions emerged. And then gradually this revolution tried to spread its reach. According to 4sight group Bookkeeping software started to become more generalised and user-friendly in the late 1970s with the **first spreadsheet software made by Visicalc**. This made it feasible to carry

out financial modelling on a computer. In **1978**, Peachtree Software devised an accounting software package that could work on early personal computers. Soon after, a growing number of businesses started to see the value of buying a computer. It was possible for businesses to **computerize their accounting systems** at a fraction of the cost of purchasing an expensive mainframe. The first online bookkeeping software for the masses was offered by **Peachtree in 1981** with an integrated office suite including a standard word processor and a spreadsheet. **In 1983, Intuit** launched the **Quicken line of accounting** software for individuals to use. Intuit designed an interface that was easy to use for non-accountants. By 1985, PCs and accounting software had become an integral part of many business offices worldwide.¹

While we were checking the milestone of Accounting, I found out in the year 1978 VisiCalc, the first spreadsheet software was released and it allows financial modeling on a computer and thereafter as per my knowledge for a personal computer accounting purpose the peachtree software is released. In the year 1998 one of the popular software for accounting day to day transactions records **QuickBooks software came**. Between 1990 and 2000, a number of software were introduced in the market related to different industries and business. Especially in this one invoicing, payroll processing and financial reporting software's are included. And today, the current situation is such that automatic software for accounting has emerged that does accounting entries and all the work in its own way, which we call AI based software's.

b. New Trends in Accounting.

With the rapid changes in technology, accounting and its risk management have changed, and today accounting is done everywhere with the help of computers. Now you can manage your accounts not only on your computers but it is possible through your Mobiles or Tabs. This can be explained in detail as follows,

a. Remote Workforce.

Is the system software where an employee can work from anywhere? This workforce offers accounting professionals the flexibility to manage their schedules more effectively. Such a schedule allows accountants to balance their work and personal lives better, leading to increased job satisfaction and overall well-being. This ability to work from various locations also means that an accountant can avoid long commutes, which can be both time consuming and stressful.²

b. Data Security:

Data security involves deploying tools and technologies that enhance the organization's visibility into the location of its critical data and its usage. Ideally, these tools should be able to apply protections such as encryptions, data masking and redaction of sensitive files, and should automate reporting to streamline audits and adhering to regulatory requirements.³

c. Advisory Services.

Long ago, the king's well-wishers and advisors would give the king both good and bad advice. Then with his sharp intellect, the king would understand it and make the right

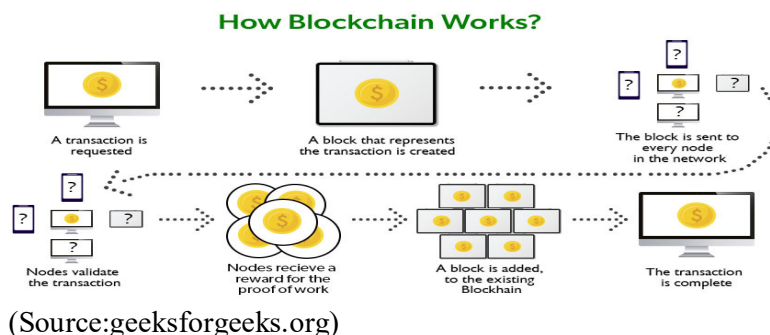
decision. Similarly they were advisers for business who gave advice for more profits and protections of business from any hazards. In the current situation where technology gives you good and accurate advice to your business. E.g. ISG and Softexpert.com

d. Artificial Intelligence.

Jon McCarthy is the father of AI. Artificial Intelligence refers to the simulation of human cognitive functions by machine. It includes a wide range technology that enable machines to perform tasks traditionally requiring human intelligence, such as reasoning, problem solving, decision making and learning from experience. ⁴ The functions of AI are used in business where Machine Learning (ML), Named Entity Recognition (NER) and semantic search, Deep Learning for AI automation. AI will help businesses to improve the customers' engagement and experience. Data analysis and insight of data. Personalized recommendations and targeting. This helps to prepare the financial statements of business accurately and more precisely.

e. Blockchain.

With the help of IBM documents a block chain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network. This network can track orders, payments accounts production and much more.



f. Big Data.

Each and every company's future need is how to and where to store the data? Now data is the asset of companies. With the help of this data the company can predict the sales and profits. With the help of Google Cloud Big data describes large and diverse datasets that are huge in volume and also rapidly grow in size over time. Big data is used in machine learning, predictive modeling, and other advanced analytics to solve business problems and make informed decisions.

g. Data Analytics.

For any business conclusion, decision strategy is needed. For this purpose data analytics is the process of collecting, transforming and organizing data in accurate form to suitable decisions and conclusions of the business.

h. Cloud Based Software.

This type of software is the same as remote base type's software's. The software is hosted on a remote server and allows users to access the accounting information from any location, following some types of cloud based accounting software.

a. Refrens- small business uses software, basically it involves expenses tracking etc.

- b. **Sage Instacct**- it is suitable for small scale businesses.
- c. **Freshbook**- this type of software is very popular in a small type of business because it includes invoicing services, payroll and financial reporting.
- d. **Net Suite**- this software is based on a remote server that affects the cloud based accounting.
- e. **SAPs/4 HANA Cloud**- this software is used for the special services sector.

The traditional accountancy software and cloud based accounting software both have similar working processes but in a cloud based the data goes to the cloud storage and again returns back to the users interface so users can use this type of software from anywhere at any location.

i. Mobile Applications.

The above cloud based software is also available on Play Store. Under the mobile applications following are important applications.

- 1. **Zoho Book**- it's a real time workforce application. This type of application is very popular. It includes instant insights, payment easier, sent beautifully crafted in voices, track your payments effectively under the standard as financial statements etc. are the features of software.
- 2. **Xero**- use a friendly for a number of users.
- 3. **WaVe**- small businesses can use this software for collecting the online payment.
- 4. **Synder**- it's good for financial data transfer automatically.
- 5. **MyBillBook**- for creation of invoices and to comply with government mandates this type of application is useful.
- 6. **Vyapar App**- this type of application is suitable for hotel and restaurant businesses because it includes GST invoices, inventory invoices etc.



Emerging trend in accounting and its overall effect on domestic industry.

Above we studied the counting software/ application and domestic industry. Any current situation as you know that each and every single transaction is based on the online mode which is recording the transactions. The traditional businesses are accepting the change in their diseases and due to this they are moving towards the digitalizations of those transactions for the according purpose. Let's see what exactly changes while emerging trends are coming into the accounting fields with the help of domestic industries.

- 1. **Books Maintained**: with the help of accounting software it's very easy to keep a business transaction and it will help to maintain books of accounts.
- 2. **Application/Software are costly**: first time this application are free to use for 7 or 15 days as a basic interface what we can say that on a trial business but if we want to more features then we need to pay extra payment for need to take subscriptions of that particular application or a software is called a premium version an obviously this is not benefited to a small scale industries due to the cost effective.

3. **Customer data:** this application or software is maintaining the data of the customer which includes a name, address, mobile number and email ID of the customer. If we are coming to an entering the new product or new services. This data is obviously helpful for the seller to suitable customers.
4. **Data Entry-** there is no need to hire employees for the data entry. It automatically enters the data in a book while giving the command for it.
5. **Generating the financial report-** all data is on cloud storage at this will help to automatically generate the financial statement with the report.
6. **Direct payment-** the payment is automatically generated from Bank to customers' applications with a link and this link is secured with OTP which is a one-time-password, after entering the OTP this is automatically done.
7. **Minimize in the errors-** employees can make mistakes, but the software cannot make mistakes unless someone gives him a wrong command. These errors include data entry, duplication, omissions- when a transaction happened but entry did not, and making it a failure to reconcile the books there is no chance that such errors can happen by the application or software's.
8. **Digitize your business-** no need to go door to door selling. With the help of such an application the selling will possibly direct marketing that is direct selling.
9. **Customization-** accounting software applications are customized. According to your business and therefore this is suitable for any type of business. If we did not like any software for any errors that are coming to the software's then we can automatically changes the software or we can update the application or we can take paid subscriptions of it, i.e. new version for that particular software and this will help businesses. It means this type of applications or software's are customizable according to business needs.

Conclusion :

Small businesses are facing problems due to such a versatile changes in digital technology and new applications/software's in accounting field. These applications and software's are sufficient for large scale industries. But business where there is a profit as soon as the product is produced cannot afford to buy such expensive applications and software. And even if they do, it will be difficult to understand. This application does not seem particularly necessary for home business. The main reason for this is that its paid subscriptions are unaffordable for the average business person. With the help of the above clarification, yes I can say that there is a change in accounts handling procedure and its impact able on the domestic industry in various sectors. Not even domestic but it is affecting all types of businesses from those that are transferring in the new digital era. This transforms domestic industry to the global economy. In the market there is no agreed definition for domestic industry but accounting can define many more authors. While clearing the differences between each concept of accounting it shows the future of digitalization accounting Era. The applications are not secure on high mode; there is a chance to lose the data. If the total workforce depends on online mode i.e. cloud based then how are you using the applications and software's to secure your data with their help of digitalization? If such a new software or applications want to survive in the market, they should make their application even more affordable for home-based business so that all professionals or small scale business owners can benefit from them.

A STUDY OF OPPORTUNITIES AND CHALLENGES OF ARTIFICIAL INTELLIGENCE IN HIGHER EDUCATION: WITH SPECIAL REFERENCE TO NASHIK DISTRICT

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➤ ABSTRACT :

Education plays a crucial role in the economic development of the rural and urban areas in Nashik as well as in strengthening the communities to help them face new life challenges. AI technology can support the education system by using data to enhance educational quality and promote fairness, especially in developing regions. In 21st century, AI is influencing various sectors, including healthcare, government, industry, and education. Within higher education, AI is creating innovative teaching and learning solutions. However, implementing AI in education faces major challenges. The lack of digital infrastructure, limited access to resources, and the need for digital skills pose significant barriers. AI learning can empower rural and urban students by helping them develop new ideas and improve their skills beyond traditional classroom education. Another advantage of AI is its ability to help both students and teachers build advanced digital skills, which are essential in today's world.

This study focuses on the challenges and opportunities of implementing AI in higher education of Nashik District. AI offers transformative potential by enhancing teaching methods, personalizing learning experiences, and improving administrative efficiency. However, it also presents challenges such as ethical concerns, data privacy issues, limited digital infrastructure, and the need for faculty upskilling.

Key Words : Artificial Intelligence, Virtual Assistance, Higher Education.

➤ INTRODUCTION :

Artificial Intelligence (AI) is transforming various sectors globally, and higher education is no exception. AI-driven tools and technologies are reshaping the way education is delivered, accessed, and managed. From personalized learning platforms and automated administrative processes to advanced data analytics and virtual learning environments, AI is playing a pivotal role in enhancing the quality and accessibility of education. Its potential to revolutionize teaching methodologies, improve learning outcomes, and streamline institutional operations is immense. In the context of India, the integration of AI in higher education is gaining momentum. Educational institutions are exploring AI-based solutions to meet the evolving needs of students and enhance academic efficiency. However, the adoption of AI also presents significant challenges, including technological limitations, lack of skilled professionals, financial constraints, and concerns regarding data privacy and ethical considerations. Addressing these challenges is crucial to ensure the successful implementation of AI in the education sector. Focusing on the Nashik district of Maharashtra, this study aims to explore the opportunities and challenges associated with the integration of

AI in higher education. Nashik, known for its growing educational infrastructure and diverse student population, presents a unique context to understand the impact of AI technologies.

This research seeks to analyse the current applications of AI, assess institutional readiness, identify potential barriers, and recommend strategies for effective AI integration in higher education institutions within the district. By examining the perspectives of educators, students, and administrators, this study aims to provide valuable insights into the role of AI in shaping the future of education in Nashik. The findings will contribute to the broader discourse on AI adoption in higher education and offer practical recommendations for enhancing academic processes through innovative technological solutions.

➤ **REVIEW OF LITERATURE :**

- 1) **Susan Nwadinachi Akinwalere¹ and Ventsislav Ivanov:** Artificial Intelligence in Education (AIEd) is an emerging field in educational technology, though its broader use in higher education is still developing. This paper explores the opportunities and challenges of using AI in higher education, focusing on how it can improve teaching, learning, and educational outcomes. It presents examples of how AI can enhance equity and quality in education and discusses both the benefits and risks of integrating AI into academic settings. The paper concludes with recommendations for using AI responsibly to support sustainable development in education.
- 2) **Pengfei Cui, Bity Salwana Alias:** Artificial Intelligence (AI) is increasingly used in higher education, impacting teaching methods and student learning. While AI offers many benefits, such as improving student efficiency in academic tasks, over-reliance on AI can hinder students' cognitive development and knowledge-building. Recent research using Scopus and Web of Science databases highlights both the opportunities and challenges AI presents in education. The study emphasizes the need for responsible use of AI to balance its advantages while avoiding negative impacts on learning

➤ **OBJECTIVE OF THE STUDY :**

- 1) To Explore the Current Applications of Artificial Intelligence in Higher Education Institutions.
- 2) To Identify the Opportunities AI Presents for Enhancing Teaching, Learning, and Administration.
- 3) To Assess the Challenges and Barriers Faced by Educational Institutions in Implementing AI.
- 4) To Evaluate the Perception and Readiness of Educators and Students Towards AI Integration.
- 5) To Recommend Strategies for Effective AI Integration in Higher Education.

➤ **RESEARCH METHODOLOGY :**

The present research is designed to systematically investigate the current applications, opportunities, and challenges associated with AI integration in higher education institutions. The methodology adopted is a combination of qualitative and quantitative approaches to ensure a comprehensive analysis. Primary data is directly collected from 50 stakeholders involved in higher education from Nashik District. Secondary data is gathered from the Academic journals, research papers, and articles related to AI in education.

Meaning of Artificial Intelligence :

Artificial Intelligence (AI) refers to the use of digital technologies, such as software applications, mobile devices, computers, and the internet, to facilitate learning and education. AI in education includes tools like chatbots, virtual assistants such as **Siri and Alexa**, and other intelligent systems that enhance teaching and learning experiences.

Importance of Artificial Intelligence learning :

1) Flexibility in Learning:

AI-based education provides students with the flexibility to study at their convenience. They can choose when and with whom to study. AI-powered chatbots enable learners to balance their time between academics, work, family, and other activities while enhancing their skills.

2) Personalized Attention:

With AI-driven education, students have direct access to instructors via email or virtual platforms. Many students hesitate to ask questions in a traditional classroom setting due to fear of judgment, but AI eliminates this barrier by creating a comfortable learning environment.

3) Global Learning Connectivity:

AI-powered education enables students to connect with peers, educators, and experts from around the world. It provides opportunities to learn new skills and access knowledge anytime, anywhere, expanding educational possibilities beyond geographical boundaries.

4) Unlimited Access to Learning Materials:

Unlike traditional classroom teaching, AI-powered platforms allow students to revisit lectures and study materials multiple times. This is especially beneficial for exam preparation and reinforcing concepts.

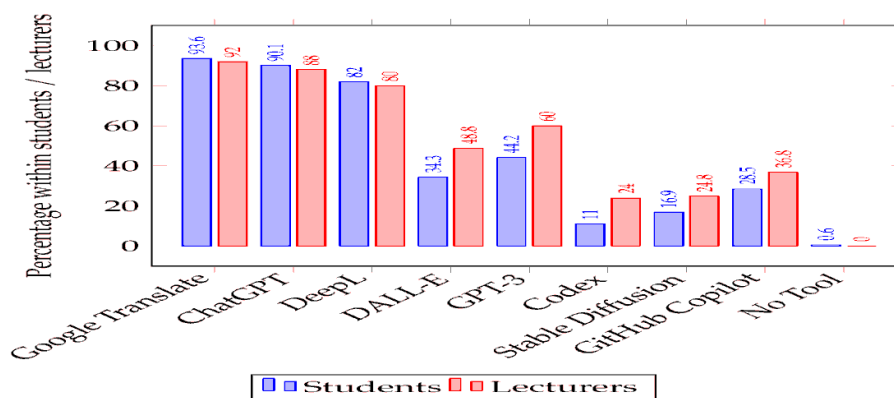
5) Access to Updated Content:

AI ensures that students receive the latest and most relevant learning materials. AI-driven platforms continuously update educational content, keeping learners aligned with modern advancements and industry trends.

6) Quick Access to Lessons and Skill Development:

AI facilitates faster learning by providing instant access to study materials and interactive lessons. It helps students enhance their skills beyond traditional academic subjects, fostering creativity, critical thinking, and career readiness.

Graph 1: Use of AI in Higher Education by students and Lecturers



Source: <https://www.mdpi.com/2813-4346/2/4/39>

Opportunity of Artificial Intelligence in Education:

1) Enhancing Educational Processes with AI:

Artificial Intelligence is revolutionizing education through various applications, including content creation, intelligent tutoring systems, personalized learning, automated grading, automation, digital assistance, learning analytics, natural language processing, adaptive learning, learning management systems, academic research, enhanced online discussions, exam integrity, and faculty lecture transcription. These AI-driven innovations improve teaching efficiency and student engagement.

2) New Forms of Interaction in Education:

AI enables innovative ways for students and teachers to interact, using speech, gestures, sketches, and other natural human communication modes to engage with digital resources. Additionally, AI-powered systems can generate human-like responses, enhancing the overall learning experience.

3) AI and Teacher Collaboration:

AI can enhance education by handling administrative tasks and offering personalized learning experiences. This gives teachers more time to focus on engaging with students and helping them develop critical thinking skills. AI and teachers can work together to improve the learning experience, preparing students for a future where AI is part of everyday life.

4) Automatic Task Handling:

Teachers spend a lot of time grading assignments and tests. AI can speed up this process, grading multiple-choice tests and soon, written responses. It can also recommend ways to address students' learning gaps. Automating these tasks gives teachers more time to focus on teaching and supporting students individually

Challenges of Artificial Intelligence in Education:

- 1) Challenges lies in developing a comprehensive view of society on Artificial Intelligence for sustainable development at educational platform.
- 2) Some educational Institute in Nashik faced basic technological infrastructure which is the basic condition for implementation.
- 3) Difficulty in implementing Artificial Intelligence to due low fund.
- 4) Most of the education in these areas is through black board and beside the education spread arts and commerce education so educational institute think artificial intelligence not necessarily applicable.
- 5) As students from these areas are from farming families and their income are low, they cannot afford the use of artificial intelligence in education.
- 6) Due to the increasing use of social media specially Facebook, Instagram and WhatsApp etc. rural students neglecting their basic education.
- 7) As Teachers in rural environment are above 50 years of age, they are not interested to learn new digital skills to use artificial intelligence in education.

Suggestions :

1) Promote Social Awareness:

Increase awareness among society, students, and teachers about the significance and benefits of Artificial Intelligence in education, encouraging its adoption for enhanced learning experiences.

2) Develop AI-Enabled Computer Labs:

Educational institutions should establish AI-equipped computer labs with essential hardware and software for AI learning. Key components include data storage and management applications, data processing frameworks, machine learning frameworks, and MLOps platforms to support AI education.

3) Introduce Basic Certification Courses:

Launch introductory certification programs in computer science and data science, focusing on programming, mathematics, and machine learning concepts, to build foundational AI skills among students.

➤ **CONCLUSION:**

In today's rapidly evolving education system, traditional classroom training is gradually being replaced by digital learning, driven by high-speed internet and technological advancements. Artificial Intelligence (AI) is transforming education by introducing innovative teaching and learning solutions, many of which are currently being tested across different contexts. The COVID-19 pandemic accelerated the adoption of e-learning worldwide, highlighting its growing importance. Studies and surveys conducted after 2020 emphasize the significance of online education, which offers flexibility and accessibility compared to conventional chalk-and-board teaching methods. With AI-powered platforms, students can access lessons remotely, fostering convenience and self-paced learning. Moreover, AI enhances cognitive development by encouraging higher-order thinking skills and promoting academic growth. Recognizing this, the Ministry of Electronics and Information Technology has identified e-learning as a crucial tool for education. Technological advancements continue to improve access to information, making AI-driven education a key component of the future learning landscape.

➤ **RECOMMENDATIONS :**

Policymakers of higher educational institutes from Nashik should develop clear guidelines for the ethical use of AI in education. This will help prevent misuse and ensure AI is used to enhance teaching and learning. Educators should embrace AI tools but stay aware of potential risks. Future studies should aim to establish widely accepted guidelines for the responsible use of AI. As AI becomes more common, these rules will help society maximize AI's benefits while avoiding controversies.

This research contributes to these efforts by informing AI users about acceptable and unacceptable practices, promoting responsible AI use, and supporting the broader development of society.

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**A STUDY OF CHALLENGES AND OPPORTUNITIES OF TECHNO BASED EDUCATION
FOR SUSTAINABLE DEVELOPMENT WITH SPECIAL REFERENCE TO
NIPHAD TALUKA**

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➤ **ABSTRACT :**

The study examines the challenges and opportunities that techno-based education can pose in Niphad Taluka, characterized by a diverse tribal population and diverse socio economic landscape. In spite of the potential of technology for improving educational access and quality, several obstacles prevent it from being effectively implemented. There are several factors contributing to these problems, such as inadequate infrastructure, economic constraints, cultural resistance, and inadequate educator training. In this study, mixed-methods are employed to identify challenges and present successful initiatives demonstrating the positive impacts of technology on learning. As a result of this study, it has been discovered that the integration of techno-based education into student life can enhance student engagement, enhance skill development, and encourage community involvement in the educational process.

Ultimately, the study offers policymakers, educators, and community leader's actionable recommendations to overcome existing barriers and promote sustainable development through education. The use of technology can play an important role in transforming educational landscapes in these areas, ultimately contributing to broader social and economic development goals.

Key Words : Technology, Techno-based education, Sustainable Development

➤ **INTRODUCTION :**

Education plays an essential role in the development of a society, especially in tribal areas where socio-economic challenges often obstruct access to high-quality learning opportunities. Niphad Taluka is located in Maharashtra State and houses a variety of tribal communities facing unique educational obstacles, including limited infrastructure, economic constraints and cultural barriers. Despite these challenges, technology integration into education, called technical-based education, provides promising opportunities to improve learning results and promote sustainable development. Technology-based education includes a number of digital tools and resources that can facilitate more interactive, meaningful and inclusive (informative) learning experiences. Using technology, teachers can reach remote learners, provide access to a wealth of information and promote critical skills that meet local economic needs. However, the effective implementation of such education models in tribal areas requires a sensitive understanding of the existing obstacles and opportunities.

This study aims to examine the challenges and opportunities of technology-based education in Niphad Taluka, focusing on its role in promoting sustainable development. It will analyze the current educational landscape to identify key barriers such as poor infrastructure, cultural resistance, and limited training for educators. The research will also showcase successful case studies and innovative practices that can guide future initiatives. By exploring how technology, education, and community dynamics interact, the study aims to

offer practical recommendations for stakeholders, including policymakers, educators, and local communities. The ultimate goal is to improve access to quality education in tribal areas, contributing to a more sustainable and prosperous future.

➤ **REVIEW OF LITERATURE :**

This research paper focuses on technology-based education, highlighting its impact, challenges, and advancements in enhancing learning experiences.

- **Ankesh Shubham Pandey (2022)**, This study reveals that “The development of society depends on effectively utilizing government schemes aligned with sustainable development goals. Tribes in villages like Patkani, Uttar Pradesh, face challenges in accessing welfare programs due to poor infrastructure. This paper examines how Information and Communication Technology (ICT) can promote sustainable development by enhancing digital inclusion and access to services like e-health, e-education, and e-employment among the tribal population.”
- **Miss. Sasmita Behera (February 2023)**, The Study shows “Tribal communities in India face challenges in education, economy, and health, limiting their growth and adaptation to modern developments. The use of Information and Communication Technology (ICT), especially among tribal youth, can enhance their quality of life by bridging the digital divide and improving access to essential resources. This study explores the impact of digital technology on tribal societies, addressing challenges, progress, and solutions for promoting digital inclusion and reducing inequalities between tribes and non-tribes.”
- **Ajmel Ayyob, Nishant Singh (2022)**, This paper highlights the challenges and difficulties faced by tribal children in accessing digital education.

➤ **OBJECTIVES OF THE STUDY :**

- 1) To understand the importance of Techno Based education in Niphad Taluka.
- 2) To identify the major challenges encountered in implementing technology-based education in the region.
- 3) To explore how technology can improve learning outcomes and support sustainable development within the community.
- 4) Assess the impact of existing technology-based educational programs on student engagement, learning outcomes, and skill development in alignment with local economic needs.
- 5) To offer actionable recommendations to improve the implementation and long-term sustainability of technology-based education in the region.

➤ **RESEARCH METHODOLOGY**

This study employs a mixed-methods approach to investigate the challenges and opportunities of technology-based education in Niphad Taluka. By integrating both quantitative and qualitative methods, the research aims to provide a comprehensive understanding of the region's educational landscape.

1. Research Design

A descriptive research design was adapted to systematically document and analyzes the current state of techno-based education in the region, enabling a detailed examination of existing practices and challenges.

2. Sample Selection

The study was focus on diverse groups, including students, teachers, community leaders, and local education authorities within Niphad Taluka. A stratified random sampling technique was used to ensure fair representation from various tribal communities and educational institutions.

➤ **Data Collection Methods**

1. Surveys

Structured questionnaires were designed to collect quantitative data from students and teachers. These surveys focused on aspects like technology access, perceptions of its effectiveness, and key challenges encountered in adopting technology-based education.

2. Interviews

In-depth interviews were conducted with key stakeholders, including educators, community leaders, and local policymakers. This qualitative approach provides deeper insights into the local context and the specific factors influencing the success and barriers to techno-based education.

➤ **DATA ANALYSIS :**

• **Quantitative Analysis**

Survey data was analyzed using statistical tools to identify trends, correlations, and significant differences across various demographic groups.

• **Qualitative Analysis**

A thematic analysis was applied to interview and focus group transcripts. This method helps to identify common themes and patterns related to the challenges and opportunities of techno-based education in the region.

➤ **Importance of Technology Based Education in learning**

1) Flexibility in Learning:

Technology-based education offers students the flexibility to learn anytime and anywhere. AI chatbots allow learners to balance their studies with work, family, friends, or other activities. This approach helps students enhance their skills at their own pace and convenience.

2) Enhanced Individual Attention:

With direct access to instructors through emails or online platforms, students can ask questions and receive personalized responses. This is especially helpful for those who feel hesitant to ask questions in a classroom setting. The online environment can help reduce fear and encourage more open communication with educators.

3) Global Connectivity:

Technology-based education connects students to a global learning community. AI-driven platforms provide opportunities to acquire new skills and knowledge anytime, anywhere, expanding access to global educational resources and creating broader learning opportunities.

4) Unlimited Access to Lectures:

Unlike traditional classroom settings, online learning allows students to access lectures multiple times. This is especially beneficial during exam preparation, as students can revisit lessons whenever they need to reinforce their understanding.

5) Access to Updated Content:

Technology-based education platforms ensure that learners have access to the most current and relevant content. This helps students stay aligned with modern trends and developments, ensuring their knowledge is up-to-date.

6) Quick and Easy Access to Lessons:

These platforms enable students to quickly access learning materials and develop new ideas. They also offer opportunities to gain knowledge beyond traditional education, helping students acquire advanced skills and stay competitive in their fields.

➤ **Challenges and Opportunities of Techno-Based Education in Tribal Areas for Sustainable Development**

Challenges :

- **Limited Internet Access:**

Several regions in Niphad Taluka struggle with unstable internet connectivity, restricting access to online learning platforms and digital educational resources.

- **Unreliable Power Supply:**

Frequent power outages and insufficient electricity infrastructure pose significant challenges to the effective integration of technology in education.

- **Technological Skepticism:**

Traditional beliefs and doubts about the benefits of technology often result in resistance to adopting new educational methods.

- **Language Limitations:**

The lack of educational content in local dialects makes comprehension and engagement difficult for learners.

- **Limited Affordability:**

Families in tribal regions may prioritize basic needs over investing in education and technological resources.

- **Resource Constraints:**

Schools often face financial shortfalls, limiting their ability to procure technological tools and implement training programs.

- **Educator Training Gaps:**

Many teachers lack adequate training to effectively incorporate technology into their teaching practices.

- **Community Awareness Deficit:**

Limited understanding of the potential benefits of technology-based education among community members hinders broader adoption.

- **Irrelevant Content:**

Educational materials often fail to reflect local contexts or economic realities, reducing their relevance and practical application.

Opportunities :

- **Dynamic Learning Experiences:**

Technology fosters interactive and engaging educational methods, enhancing student motivation and participation.

- **Expanded Access to Resources:**

Students can utilize diverse educational materials, online courses, and platforms, enriching their learning experience.

- **Local Industry Readiness:**

Tech-based education can be customized to develop skills relevant to local industries like agriculture, crafts, and entrepreneurship.

- **Digital Proficiency:**

Exposure to technology enhances digital literacy, preparing students for employment in a digital-driven economy.

- **Community Participation:**

Involving local communities in educational initiatives fosters ownership and encourages support for technology-based learning.

- **Collaborative Partnerships:**

Engaging with NGOs and government bodies can provide essential resources, training, and funding to promote digital education.

- **Mobile Learning Solutions:**

Leveraging mobile devices ensures educational access for remote learners, offering flexible learning opportunities.

- **Localized E-Learning Platforms:**

Developing customized digital platforms can bridge educational gaps and provide relevant, quality content to learners.

- **Alignment with SDGs:**

Technology-driven education supports sustainable development goals, especially in areas of quality education, gender equality, and economic growth.

➤ **FINDINGS OF THE STUDY :**

1. Infrastructure Challenges

- **Connectivity Issues:** Many regions lack consistent internet access, restricting the use of online educational resources.
- **Power Supply:** Frequent electricity outages reduce the usability of electronic devices and internet services.

2. Cultural and Social Barriers

- **Resistance to Change:** Traditional beliefs and skepticism towards technology can hinder its adoption in education.
- **Language Barriers:** The absence of educational materials in local dialects can affect comprehension and engagement.

3. Economic Constraints

- **Affordability:** Financial limitations make it challenging for families to invest in technology or for schools to procure essential tools.
- **Basic Needs Prioritization:** Immediate survival concerns may overshadow the perceived importance of investing in education.

4. Lack of Training and Support

- **Teacher Preparedness:** Many educators require training to effectively integrate technology into their teaching methods.
- **Community Awareness:** There is a need for awareness programs that highlight the benefits of technology-based education to the broader community.

5. Positive Impact on Learning Outcomes

- **Enhanced Engagement:** Incorporating technology into lessons can increase student interest and participation.
- **Access to Resources:** Technology enables access to a broader range of educational materials, enriching the learning experience.

6. Community Involvement

- **Local Partnerships:** Collaborations with local NGOs, government agencies, and technology companies can provide resources and training to support education.
- **Empowerment through Education:** Active community participation in educational initiatives fosters ownership and promotes sustainability.

7. Innovative Educational Solutions

- **Mobile Learning:** Using mobile devices for education shows potential, particularly in areas with limited infrastructure.
- **E-learning Platforms:** Customized online platforms are bridging educational gaps by addressing local needs.

8. Skill Development for Local Needs

- **Alignment with Local Economy:** Tech-based education can be tailored to local industries like agriculture and handicrafts, equipping students with relevant skills for future opportunities.

➤ SUGGESTIONS :

- 1. Promote Social Awareness:** Foster awareness among society, students, and teachers about the significance and benefits of technology-based education.
- 2. Establish Technological Infrastructure:** Educational institutions can set up computer labs equipped with essential hardware and software for technology-based learning. Key components should include data storage and management systems, data processing frameworks, machine learning frameworks, and MLOps platforms.
- 3. Introduce Certification Courses:** Launch basic certification courses in fields like computer science and data science, focusing on foundational concepts such as programming, mathematics, and machine learning.

➤ CONCLUSION :

The education system is rapidly evolving, with traditional classroom learning gradually giving way to technology-based education due to advancements in the internet and digital technologies. Technology-based education is introducing innovative teaching and learning solutions that are being tested in various contexts. The growing emphasis on global education in India reflects the need to adapt to emerging trends, with surveys highlighting the rising significance of e-learning, especially after 2021. Unlike conventional chalk-and-board methods, technology-based education offers flexible learning, allowing students to access lessons remotely while fostering higher-level thinking skills and academic development.

This study emphasizes that, despite significant challenges in implementing technology-based education in Niphad Taluka, there are promising opportunities for sustainable development. Overcoming infrastructural and cultural barriers, encouraging community participation, and providing teacher training are essential steps to unlocking the potential of

digital education. By addressing these challenges, stakeholders can enhance educational access and quality, empower local communities, and contribute to sustainable growth in tribal regions.

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THE CHALLENGES OF GLOBAL VALUE CHAINS : A STUDY OF MULTINATIONAL CORPORATIONS

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➤ ABSTRACT

This study examines the challenges faced by multinational corporations (MNCs) in managing their global value chains (GVCs). Using a qualitative approach, we investigate the experiences of MNCs in the automotive and electronics industries. Our findings suggest that MNCs face significant challenges in managing their GVCs, including supply chain disruptions, quality control issues, and reputational risks.

➤ INTRODUCTION

Global value chains (GVCs) have become a critical component of international business, enabling firms to access new markets, technologies, and skills. However, managing GVCs is a complex task, requiring firms to coordinate activities across multiple countries and organizations.

In today's interconnected world, global value chains (GVCs) have become a crucial component of international trade and commerce. GVCs enable businesses to access new markets, leverage specialized skills, and optimize production processes. However, managing GVCs poses significant challenges, including navigating complex global supply networks, managing cultural and regulatory differences, and ensuring the smooth flow of goods and services across borders. following are main challenges :

1. Supply chain disruptions and risks
2. Quality control and assurance
3. Cultural and regulatory differences
4. Logistics and transportation complexities
5. Risk management and mitigation

Impact on Businesses :

1. Increased costs and reduced efficiency
2. Decreased customer satisfaction and loyalty
3. Damage to brand reputation and image
4. Reduced competitiveness and profitability

Importance of Understanding GVC Challenges:

1. Improved supply chain resilience and sustainability
2. Enhanced customer satisfaction and loyalty
3. Increased competitiveness and profitability
4. Better risk management and mitigation

This topic explores the challenges of global value chains and their impact on businesses. By understanding these challenges, organizations can develop effective strategies to manage their GVCs and improve their overall performance.

➤ OBJECTIVES OF THE STUDY :

1. To identify the key challenges faced by multinational corporations (MNCs) in managing global value chains (GVCs).
2. To analyze the impact of GVC complexity on MNC performance.
3. To explore the strategies and best practices used by MNCs to manage GVCs effectively.
4. To develop recommendations for improving GVC management and mitigating challenges.

➤ HYPOTHESIS :

1. H1: MNCs that adopt effective GVC management strategies are more likely to achieve improved performance and competitiveness.
2. H2: The complexity of GVCs is positively correlated with the level of risk and uncertainty faced by MNCs.
3. H3: MNCs that invest in supply chain visibility and transparency are better equipped to manage GVC challenges and improve performance.
4. H4: The use of digital technologies, such as block chain and artificial intelligence, can enhance GVC management and mitigate challenges.

➤ LITERATURE REVIEW:

Previous research has highlighted the importance of governance structures in shaping the behavior of firms within GVCs (Gereffi et al., 2005). However, this literature has also noted that GVCs can be vulnerable to disruptions, including supply chain disruptions, quality control issues, and reputational risks.

➤ METHODOLOGY :

This study uses a qualitative approach, involving in-depth interviews with 30 executives from 10 MNCs in the automotive and electronics industries.

➤ FINDINGS

Our findings suggest that MNCs face significant challenges in managing their

GVCs, including :

1. Supply chain disruptions : MNCs reported that supply chain disruptions, including natural disasters, labor disputes, and transportation delays, were a major challenge.
2. Quality control issues : MNCs reported that quality control issues, including defects and recalls, were a significant challenge.
3. Reputational risks : MNCs reported that reputational risks, including negative media coverage and consumer boycotts, were a major concern.

➤ **CONCLUSION :**

This study highlights the challenges faced by MNCs in managing their GVCs. Our findings suggest that MNCs need to adopt a more proactive and collaborative approach to managing their GVCs, including investing in supply chain resilience, implementing quality control measures, and engaging in reputation management.

➤ **RECOMMENDATIONS :**

Based on our findings, we commend that MNCs :

1. Invest in supply chain resilience : MNCs should diversify their suppliers, invest in logistics and transportation infrastructure, and develop contingency plans for potential disruptions.
2. Implement quality control measures : MNCs should implement regular audits and inspections, invest in employee training and development, and establish clear quality control protocols.
3. Engage in reputation management : MNCs should monitor social media, engage with stakeholders, and develop crisis management plans to mitigate reputational risks.

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**“ THE ROLE OF DIGITAL TRANSFORMATION IN IMPROVING TAX COMPLIANCE
AMONG INDIAN SMALL AND MEDIUM - SIZED ENTERPRISES ”**

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➤ **ABSTRACT :**

Digital transformation has become a crucial aspect for businesses to improve customer experiences, modernize operations, and develop innovative business models. However, Small and Medium-sized Enterprises (SMEs) in India are lagging behind in adopting digital transformation, despite their significant contribution to the country's economy. This study aims to investigate the impact of digital transactions on tax compliance among SMEs in India. The research explores the opportunities, challenges, and trends of digital transformation in SMEs, with a specific focus on digital transactions and tax compliance. The study employs a case study approach to gather in- depth insights from SMEs in India. The findings of this study will provide valuable insights for policymakers, regulators, and SME owners to understand the implications of digital transactions on tax compliance and to develop strategies for promoting digital transformation among SMEs. The study will also explore the benefits of digital transactions for SMEs, including improved transparency, reduced errors, and increased efficiency. The research will contribute to the existing literature on digital transformation and tax compliance, and provide practical recommendations for SMEs to improve their tax compliance processes. The study will also inform policymakers and regulators about the need to promote digital transformation among SMEs and to develop policies and regulations that support the adoption of digital technologies.

Keywords : Digital Transformation, Small and Medium-sized Enterprises (SMEs), Digital Transactions, Tax Compliance, Digital Economy.

➤ **INTRODUCTION :**

The World Economic Forum's Digital Transformation (DT) initiative, launched in 2015, aimed to harness the benefits of digital technologies for businesses and society. Since then, rapid technological advancements have transformed industries and organizational processes. As Klaus Schwab noted, "Change always provides opportunities – to learn new things, to rethink on processes, and to improve the way we work." The Fourth Industrial Revolution, driven by emerging technologies like artificial intelligence, blockchain, and the Internet of Things (IoT), is reshaping the global economy. According to a report by the World Economic Forum, digital transformation has the potential to increase global income levels and improve the quality of life.

In India, the government's initiatives, such as Digital India and the Goods and Services Tax (GST), have accelerated the adoption of digital technologies. The COVID-19 pandemic has further accelerated this trend, with a significant increase in digital transactions and online commerce. Small and Medium Enterprises (SMEs) play a vital role in India's economy, contributing significantly to GDP and employment. However, SMEs face unique challenges in adopting digital technologies, including limited resources and expertise.

This study aims to investigate the impact of digital transactions on tax compliance among SMEs in India. The research will explore the opportunities and challenges of digital transformation in SMEs, with a specific focus on digital transactions and tax compliance. The Indian government's Digital India initiative aims to transform the country into a digitally empowered society. The Goods and Services Tax (GST) has increased the adoption of digital technologies among SMEs. The COVID-19 pandemic has accelerated the growth of digital transactions and online commerce in India. According to a report by the International Monetary Fund (IMF), digital technologies have the potential to increase tax revenue and improve tax compliance.

The Indian economy is undergoing a significant transformation due to technological advancements, affecting all manufacturing and service sectors. Small and Medium Enterprises (SMEs) have realized that customers' expectations are changing due to technology and information, and they must adapt to remain competitive. However, SMEs are lagging behind in digital transformation due to unclear digital transformation understandings, lack of skills, and digital competences. Digital transformation is essential for SMEs to build their business models and remain competitive in the rapidly changing marketplace. Advances in connectivity and communications with the internet have made it imperative for SMEs to change and adapt to digital transformation. According to the App Direct Digital Economy Report (January 2019), companies investing in digital transformation have seen significant benefits, including:

- Growth in the company
- Improvement in operational efficiency, innovations and competitiveness
- Increase in revenue
- Observed agility
- Increase in customer acquisition and experience
- Decrease in operational costs

Recent trends indicate that digital transformation is crucial for establishing a competitive position. According to Josh Bersin (HBR, 2016), 21% of executives see significant results from digital transformation in their enterprises today. This study aims to investigate the impact of digital transactions on tax compliance among SMEs in India. The research will explore the opportunities and challenges of digital transformation in SMEs, with a specific focus on digital transactions and tax compliance.

➤ LITERATURE REVIEW :

1. **Kaanael Simon Mbise and Lukundo Baseka (2022):** This study assessed the impact of the digital tax administration system on compliance among SMEs in the TRA, Tanga regional office involving 133 SMEs. Digitizing tax administration boosts tax compliance among small and medium-sized businesses by leveraging technology and data analytics.
2. **Lucie Gadenne, Tushar Nandi and Ross Warwick (2022) :** We find that the shift to electronic means of payments during demonetisation did induce firms to report higher sales to the tax authorities: a 10% increase in electronic payments in a local area increased average reported sales by 0.3%. Empirical evidence suggests that

electronic payments have a positive impact on tax compliance, resulting in a significant increase in tax revenues.

3. **Anne Brockmeyer & Magaly S’aenz Somarriba (2022)** : We have studied whether the digitization of transactions through electronic payment technology can help improve tax compliance. Leveraging variation generated by Uruguay’s financial inclusion reform, notably the introduction of large VAT rebates for credit and debit card payments, we find no evidence that digitization spurs tax compliance.
4. **Jerome Joseph and Dr N Ramalingam** : This paper analysed the nature of the relationship between digital payments and tax revenue growth in India. Regression analysis reveals a statistically significant positive correlation between digital payments and GST revenue in India over the long term. The promotion of digital payments, apart from tax revenue, has a strong positive correlation with economic growth, trade, and consumption.
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7. **Benjamin Tallin (2018)**, Digitization is changing SMEs and their opportunities research thesis shared research on digital transformation. Large corporations have been actively engaged in the implementation of new strategies and new opportunities. However, the topic of digitization has not been addressed to the smaller companies or the extent and speed of implementation were not appropriate.
8. **Matthieu Bellon, Era Dabla-Norris, Salma Khalid, Frederico Lima (2022)** : This Paper investigates the effect of e-invoicing adoption on firm performance and tax compliance using administrative tax data on all VAT paying firms in Peru. Our econometric analysis reveals that e-invoicing significantly boosts firm sales, purchases, and VAT liabilities by 5% on average, with disparate impacts across firms, particularly benefiting small firms and high-risk sectors. Together, this indicates that e-invoicing exerts its influence mainly by mitigating tax evasion through enhanced compliance.

➤ **OBJECTIVES OF THE STUDY :**

1. To study the impact of digital transactions on tax compliance among Small and Medium Enterprises (SMEs) in India.
2. To investigate the relationship between digital payments and reported sales among SMEs
3. To identify the challenges faced by SMEs in adopting digital transactions and tax compliance procedures.

➤ **NEED FOR THE STUDY :**

The need for this study arises from the increasing importance of digital transactions in the Indian economy and the lack of understanding about their impact on tax compliance among Small and Medium Enterprises (SMEs). With the Indian government's push for digitalization and the increasing adoption of digital technologies among SMEs, it is essential to investigate the impact of digital transactions on tax compliance among SMEs.

➤ **STATEMENT OF THE PROBLEM :**

This study aims to investigate the relationship between digital transactions and tax compliance among SMEs, identify the benefits and challenges of digital transactions for tax compliance, and provide recommendations for policymakers, regulators, and SME owners.

➤ **RESEARCH GAP :**

While existing literature explores the impact of digital transformation on tax systems and compliance in various global contexts, limited research specifically addresses how digital transactions influence tax compliance among Small and Medium Enterprises (SMEs) in the Indian context. Most previous studies either focus on large corporations or offer generalized conclusions without adequately examining the sector-specific challenges faced by SMEs in adopting digital tools for tax purposes. Furthermore, though the Indian government has introduced several reforms such as GST, e-invoicing, and the Digital India initiative, there is a lack of empirical evidence evaluating how these reforms are translating into improved tax compliance among SMEs. This study bridges this gap by focusing on the unique dynamics, challenges, and opportunities for SMEs in India in the wake of accelerated digitalization, especially post-demonetization and the COVID-19 pandemic. By doing so, the research contributes targeted insights that can inform policy and practical interventions to enhance tax compliance and digital adoption among SMEs.

➤ **RESEARCH METHODOLOGY:**

Research Design : This study implies that descriptive research design, aiming to describe the impact of digital transactions on tax compliance among Small and Medium Enterprises (SMEs) in India. **Data Collection Method:** The study relies on secondary data, collected from existing literature, reports, and studies on digital transactions and tax compliance among SMEs in India. **Data Sources:** This research consists of various sources of data like Academic Journals, Government Reports, and Industry Reports etc.

➤ **SCOPE AND LIMITATIONS OF THE STUDY :**

The scope of this study is limited to investigating the impact of digital transactions on tax compliance among SMEs in India. The study will explore the current state of digital transactions among SMEs, the benefits and challenges of digital transactions for tax compliance, and the implications of digital transactions for tax policymakers and regulators.

➤ **LIMITATIONS OF THE STUDY :**

1. The study relied on secondary data, which may have limitations in terms of accuracy and generalizability.
2. The study is limited to investigating the impact of digital transactions on tax compliance among SMEs in India and does not explore other aspects of digital transactions.
3. The study may not fully capture the experiences of SMEs in rural areas, where access

to digital infrastructure may be limited.

4. The study may not fully capture the impact of awareness and training on the adoption of digital transactions among SMEs.

➤ **DISCUSSION OF RESEARCH RESULTS :**

The research findings suggest that digital transactions have a positive impact on tax compliance among Small and Medium Enterprises (SMEs) in India. The study's results indicate that:

1. **Digital transactions improve tax compliance :** The research shows a positive correlation between increased digital payments and higher reported sales, indicating a reduction in tax evasion.
2. **Increased transparency and improved tax administration :** Digital transactions leave a clear audit trail, making it harder for businesses to underreport income. Digital platforms also allow tax authorities to monitor transactions in real-time, facilitating quicker identification of potential non-compliance issues.
3. **Ease of filing and reduced administrative burdens:** Online tax filing systems, enabled by digital transactions, simplify the tax filing process for SMEs, reducing administrative burdens. The research highlights several numerical data points that support the findings:
 - **10% increase in electronic payments leads to 0.3% increase in average reported sales :** This suggests that digital transactions can have a significant impact on tax compliance.
 - **Demonetization impact:** The 2016 demonetization in India led to a noticeable increase in tax compliance among SMEs.
 - **E-invoicing adoption:** The implementation of mandatory e-invoicing for B2B transactions has further boosted tax compliance, with research showing a significant increase in reported sales for SMEs adopting this system.

➤ **CHALLENGES :**

1. Not all SMEs, especially in rural areas, have equal access to digital infrastructure, which can hinder full adoption of digital transactions.
2. Awareness and training: Some SMEs might lack adequate knowledge about digital tax filing systems and compliance procedures.

➤ **SUGGESTIONS:**

1. **Bridge the Digital Divide :** Expand internet connectivity and digital infrastructure in rural areas to ensure equitable access for SMEs. Subsidize low-cost digital tools (e.g., POS devices, accounting software) for small businesses.
2. **Strengthen Awareness and Training:** Launch government-led workshops and multilingual campaigns to educate SMEs on digital tax filing and compliance. Partner with fintech firms to provide user-friendly training modules for SMEs.
3. **Incentivize Digital Adoption:** Offer tax rebates or reduced GST rates for SMEs that achieve a threshold of digital transactions. Simplify compliance procedures for early adopters of e-invoicing and digital payment systems.

- 4. Leverage Technology for TaxAdministration:** IntegrateAI and data analytics into tax monitoring systems to identify evasion patterns and streamline audits. Promote interoperability between banking platforms and tax portals to automate transaction reporting.

➤ **CONCLUSION :**

Digital transactions have demonstrably improved tax compliance among Indian SMEs by enhancing transparency, enabling real-time monitoring, and simplifying tax processes. Post-demonetizationreformsande-invoicingmandateshavefurtheracceleratedthisshift, contributing to higher reported sales and a broader formal economy. However, persistent challenges such as rural digital gaps and low awareness require targeted policy interventions. By investing in infrastructure, education, and incentives, India can maximize the potential of digitalization to foster a culture of compliance, boost tax revenues, and create a fairer business ecosystem. Future efforts should focus on inclusive, tech-driven solutions to ensure no SME is left behind in this transition. Overall, the research suggests that digital transactions are playing a crucial role in enhancing tax compliance among SMEs in India, enabling better tax collection and promoting a more transparent business environment.

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- 3. Anne Brockmeyer & Magaly S’aenz Somarriba (2022):** Electronic Payment Technology and Tax Compliance: Evidence from Uruguay’s Financial Inclusion Reform Policy Research Working Paper 9947
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“ AGRICULTURAL DEVELOPMENT AND CHALLENGES IN INDIA ”

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➤ **ABSTRACT :**

The present paper highlights the agricultural development and challenges in India, which is the backbone of Indian financial system. Regarding 65% of Indian people depends openly on farming and it accounts for about 22% of GDP. It also derives its significance from the verity that it has imperative provide and demand links with the industrialized segment. Throughout, the earlier period, farming sector has observed impressive advances in the manufacture as well as efficiency of food grains, oilseeds, money-making crops, fruits, vegetables, food grains, poultry as well as dairy. India has come forward as the next major manufacturer of fruits as well as vegetables in the globe in adding to being the major overseas exporter of cashews as well as spices. Supplementary, India is the uppermost manufacturer of milk in the globe.

Keywords : India, Agriculture, Financial System.

➤ **INTRODUCTION :**

The present paper highlights the farming progress and challenges in India, which is the backbone of Indian financial system. The post-Independence the past of Indian farming may be generally grouping into periods. Before describing them, the researcher should mention that all through the majestic period famines are recurrent as well as food crisis commissions are plentiful. The growth rate in foodstuff invention through the 1900-1947 periods is hardly 0.1%. Most of the imperative institutional developments in farming originated from the suggestion of food deficiency commissions. In the 1942-43, the huge Bengal Famine gives the background to India's autonomy.

➤ **OBJECTIVES OF THE STUDY :**

The present research work deals with the following objectives :

1. To encompass a well-versed review of the potential challenges as well as opportunities before Indian cultivation with plan their explicit implications on small possessor farming society.
2. To deed as well as recognize flourishing models and strategies in India and overseas for facing the up-and-coming challenges as well as harnessing innovative

opportunities.

3. To develop device for up-scaling as well as out-scaling of flourishing models in order to attain a superior, sustainable and wide-ranging development in farming.
4. To classify suitable strategies, institutional arrangements and technical desires for upcoming.

Some Issues in Agriculture in India :

Although, there are a number of issues accountable for the current state of farming in India, the following issues merit concentration on main concern:

1. **Turn Down in Money Structure:** in the 1990s, a stable recession in asset rates is experienced by the undeveloped division, mostly in public asset. The share of community sector money formation in farming to Gross Public Sector Capital Formation declined from 17.7% in 1980-81 to only 4.1% in 2000-01. While, the confidential zone money formation in farming has been on the increase in the past decade, it has not been able to meet the deficit on clarification of the corresponding refuse in community asset. The inadequacy of innovative capital arrangement has slowed the pace and pattern of technological alter in farming with unfavorable effects on efficiency. To revitalize farming increase, the waning tendency in public asset needs to be corrected.
2. **Inadequate Credit Delivery:** even though the ratio of farming credit to rural GDP has increased from 5.4% in 1970s to 8.7% in 2001-02, it may be noted that farming credit as a quantity to total credit has declined from 20.5% to 10.5% in the same stage indicating inferior operation of credit in agriculture. Moreover, the degree of praise deployed from out of deposits mobilized in rural areas has fallen rapidly as reflected in the Credit-Deposit ratio which refused from 65% in mid-1980s to about 42% at the present.
3. **Refuse in praise to little borrowers:** Besides the in general refuse in farming praise, what is even extra troublesome is the refuse in the numeralof small loans. These are essentially familiar sector loans which slipped from a peak of 62.55 million in March 1992 to 37.22 million in March2002. Their split in total bank credit also declined from 25% to only 6% through the same stage. Therefore, it seems that force of credit compress in agriculture is being faced by small farmers.
4. **Sub-Optimal Use of Inputs and embracing of equipment:** The very important of stabilizing as well as augmenting agricultural yields is also obvious from the fact that there is less range for growing area under cultivation of diverse crops. Supplementary, apart from the refuse in land- holding extent, there is rising cost of manufacture and reduction of ground water. To amplify in undeveloped production would therefore have to emanate from improvements in efficiency from the existing cultivated area through use of location-specific high springy varieties, balanced fertilizer doses, effective transfer of technology and timely supply of all inputs. There is also a vital need to increase the accessibility of farm electricity authority to increase efficiency.
5. **Insufficient Increase of Innovative Equipment:** One of the major reasons for the low levels of yield in Indian farming has been the unsatisfactory spread of innovative

technical practices, including the espousal of High Yielding Varieties of seeds and usage of fertilizers, insufficient increase of farm organization techniques and other practices such as soil conservation and crop rotation.

- 6. Distortionary Cost as well as Funding :** The least Support Price mechanism is put in place to supply guaranteed incomes to producers. On the other hand, during the 1990s, considerable increases in MSPs of rice and wheat have considerably undecided the incentives provided to these crops at the charge of other crops. At the same time, power funding supply for irrigation has more tilted the incentives against rain dependent crops like pulses and oilseeds.

Indian Agricultural Status :

In 2007-08, India achieved a record food grain production of 227 million tones, posting a growth of 10 to 12 million tons in excess of the previous fiscal. With an added two to three million tons during the Rabi season, it would touch 230 million tones a landmark in food grain production. The agri-biotech sector in India is growing at a whopping 30% since the last five years, and it is likely to sustain the growth in the future as well. The food processing sector, which contributes 9% to the GDP, is presently growing at 13.5% against 6.5% in 2003-04, and is going to be an important driver of the Indian economy.

India is the largest producer of coconuts, mangoes, bananas, milk and dairy products, cashew nuts, pulses, ginger, turmeric and black pepper. It is also the second largest producer of rice, wheat, sugar, cotton, fruits and vegetables. Agricultural production is likely to increase significantly during fiscal year 2009. Centre for Monitoring Indian Economy has projected a growth of 3.2% during fiscal year 2009, for the GDP of agriculture and allied sectors. The allied sectors comprising livestock, forestry and logging, and fishing are likely to see a growth of 4.8% during fiscal year 2009. India's exports of agricultural and processed food products posted a 38% increase in the 2007-08 fiscal, bolstered by an increase in shipments of coarse cereals like maize, jowar and barley.

Concluding Remark :

Farming or Agricultural makes the uppermost input in GDP, India. It also gives nearly regarding 18% to India's GDP, which has observed with the most recent few years that the effort of the cultivation division has been moribund. However, it is silent the major supplier. It also occupies a well-known location in Indian policy-making. This is because of its input to GDP; this is because of the huge quantity of the people that is reliant on the division for its income. The development in people as well as prosperity has encouraged require to the amount that familial construction has not constantly been able to keep up. There is growing theory that the Indian financial system maybe overheating important to price rises. The disadvantage of the enlarged import insists and the recent produce grumble is that India's fare import bill will increase penetratingly.

On the other hand, it is obvious that India's emergent sector has finished gigantic strides in increasing its probable. The green uprising particularly amplified the invention of imperative fare grains as well as introduced technological innovations into agriculture.

This growth is visible in India's net trade situation. Where formerly India has to depend on introduce to nourish its citizens, since 1990, it is a net exporter of agri-food food stuffs. Its agriculture is large and diverse and its sheer size means that even slight changes in its trade have note worthy effects on globe farming bazaars.

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CHANGING BUSINESS LANDSCAPE & ITS IMPACT ON B - SCHOOLS

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➤ ABSTRACT :

The business landscape has been undergoing a rapid transformation due to globalization, digitalization, and evolving market dynamics. The rise of technological advancements, automation, and artificial intelligence has redefined business operations, leading to significant shifts in the skills and competencies required in the corporate world. These changes have had a profound impact on business schools (B-Schools), necessitating curriculum modifications, industry-aligned training, and innovative teaching methodologies to prepare future leaders.

It is crucial for business education institutions to adapt to these evolving demands to ensure graduates remain relevant in the job market. This study aims to analyze the extent of these changes, their influence on management education, and the preparedness of B-Schools to equip students with the necessary skills. An attempt has been made to highlight the issues pertaining to the teaching methodologies, financial considerations, learning outcomes, digital marketing and social media on student decisions. The research is based on primary data collected through a structured questionnaire distributed across various stakeholders, including students, faculty, and industry professionals. A sample of 64 respondents was selected using random sampling, representing different segments: MBA aspirants (30.62%), current students (45.93%), and corporate recruiters (23.45%). Null hypothesis was accepted using chisquare as a statistical test.

Key words : Business Education, Globalization, Technology, Curriculum Transformation, Management Students, Corporate Expectations

➤ INTRODUCTION :

In recent years, business education has undergone a profound transformation due to the rapid evolution of the corporate world. Traditional business models are continuously being reshaped by technological advancements, market disruptions, and shifting employer expectations. The rise of artificial intelligence, automation, big data, and digital transformation has created a demand for professionals with new-age skills such as analytical thinking, adaptability, and technological proficiency. As a result, business schools are re-evaluating their curricula, teaching methodologies, and industry partnerships to remain competitive and relevant in a fast - changing landscape.

The modern business environment has influenced MBA programs in several key ways. Prospective students are increasingly seeking programs that blend theoretical knowledge with practical applications, such as experiential learning, case studies, and live consulting projects. Business schools are integrating interdisciplinary learning, entrepreneurship, and data-driven decision – making into their programs to ensure graduates are well-equipped to

handle complex challenges. Additionally, collaboration with corporations, startups, and technology firms has become essential in providing students with hands-on experience, networking opportunities, and exposure to real-world business problems.

This paradigm shift in business education significantly impacts MBA selection, pedagogy, and outcomes. Students now prioritize flexibility, innovation, and career advancement potential when choosing an MBA program. Employers, in turn, expect graduates to possess not only technical expertise but also leadership, problem-solving, and strategic decision-making skills. Business education is no longer confined to traditional classroom settings but is evolving into a dynamic and immersive experience. This paper explores how these factors are reshaping modern MBA education and influencing the career trajectories of business graduates in today's competitive and technology-driven economy.

Research Question

Why do B-Schools need to adapt their curriculum to keep pace with the evolving business landscape?

➤ REVIEW OF LITERATURE

Nanda gopal & Devasia (2020) A study was conducted to analyze factors influencing MBA aspirants in South India when selecting business schools. This research identified various critical decision-making factors, including institutional rankings, accreditation, faculty quality, placement opportunities, and word of mouth recommendations. All these factors played a crucial role in shaping student's preferences and choices about higher education in business management

Business school's reputation and credibility was mainly influenced by rankings and accreditation these are the Benchmark for education excellence, institutional reliability, and industry recognition which is often considered by MBA aspirants. Accreditation, in particular, was seen as a mark of academic rigor, ensuring that the institution adhered to quality standards set by regulatory bodies. Faculty quality is also consider as important factor, as students sought experienced, knowledgeable, and industry-experienced educators who can provide important insights and will enhance their learning experience

Placement records played a decisive role, as career prospects, salary packages, and industry connections were primary concerns for MBA candidates. Institutions with a strong history of successful placements and partnerships with top-tier companies were more attractive to students. Additionally, word-of-mouth recommendations, particularly from alumni, industry professionals, and peers, greatly influenced aspirants' choices, as firsthand experiences provided valuable insights into the institution's strengths and weaknesses. The study also focused on growing impact of digital platforms in influencing students decision. Online forums, educational websites, and social media platforms, particularly Shiksha. Command Quora, emerged assign if I cant sources of information for MBA aspirants. These platforms offer student reviews, faculty feedback, and discussions about various business schools, helping them make more informed choices. The increasing reliance on digital platforms indicated a shift in how students gather information, moving beyond traditional sources likes brochures and direct consultations.

Overall, Nandagopal & Devasia (2020) emphasized the evolving landscape of MBA aspirants' decision-making processes. While traditional factors such as rankings, accreditation, faculty quality, and placements remained vital, digital engagement and online discussions were becoming increasingly influential. Study also focused on strong online presence, fostering positive online reviews, and leveraging social media to increase their

reputation among potential students.

Jain & Kamal (2010) A study was conducted to investigate alignment between MBA curriculum and manage managerial competencies required in the workplace across business schools in India and the USA. The research aimed to evaluate the courses in MBA programs effectively equips graduates with the skills necessary for professional success. Courses from top- tier and second-tier business schools in India, as well as top-tier institutions in the USA, categorizing them under distinct competency areas was analyze by author.

The findings revealed a misalignment between the competencies required in managerial roles and those emphasized in MBA curricula. All categories of business schools observed this gap, suggesting that graduates may not be adequately prepared for the challenges of the corporate world. Furthermore, the study found insignificant differences in the required curricula across different tiers of business schools. This indicates that even prestigious institutions do not necessarily off era curriculum that is more aligned with industry demands than their lower-tier counterparts.

The study also found that there is no correlation between the required curricula and average salary offerings. This suggests that factors beyond curriculum structure—such as institutional reputation, networking opportunities, and placement support play a greater role in determining salary outcomes for MBA graduates.

By Giving these findings, Jain and Kamal (2010) emphasize the urgent need for business schools to work on their curricula. They advocate for a more industry-focused approach that integrates practical, competency-based learning to bridge the gap between academic instruction and real-world managerial expectations. The study also highlights the importance of continuous curriculum evaluation to ensure that MBA graduates should possess the skills necessary to thrive in dynamic business environments.

Dakduk et al. (2016) conducted a comprehensive review of research on admission criteria for MBA programs, analyzing studies published between January 1990 and December 2013. Their study aimed to explore the key factors of academic performance in MBA students by reviewing existing literature from international databases.

Findings tell that a lot of researcher have focused on the relationship between standardized test scores, particularly the Graduate Management Admission Test (GMAT), and undergraduate academic performance (UGPA) as predictors of success in MBA programs. GMAT scores and UGPA have consistently been studied as the primary determinants of student success, with several studies establishing amoderate to strong correlation between these factors and GGPA

However, the study also highlights a notable gap in research regarding non-academic predictors of performance. Factors such as work experience, personality traits, motivation, learning strategies, self-efficacy beliefs, and achievement expectations have been studied less frequently, and the existing research on these factors has yielded inconsistent results. Due to this lack of conclusive evidence, these personal and experiential attributes are not yet considered reliable predictors of MBA student performance.

The study highlights the need for further research into non-traditional predictors of academic success, particularly providing the growing emphasis on leadership, problem-solving, and interpersonal skills in business education. The authors suggest that business schools should consider a more holistic approach to MBA admissions, incorporating both academic metrics and qualitative factors to better assess candidates' potential.

Shirole (2020) In his paper the author examined the factors influencing MBA aspirants in India when selecting business schools. Research acknowledges both traditional and emerging considerations that shape students' decision-making processes. Among these conventional factors, campus infrastructure, academic quality, financial considerations, and social influences continue to play an important role. However, it also recognizes the impact of the

COVID-19 pandemic, which has introduced new priorities such as online teaching capabilities and safety measures.

By using correlation and regression analysis, the study assesses the relative importance of these factors in shaping students' final decisions. The findings showed that academic quality and financial considerations are the most influential factors. However, modern elements such as an institution's online presence, digital learning infrastructure, and flexibility in course delivery have gained utmost importance due to the pandemic. The shift toward digital education has made online teaching capabilities a critical factor for prospective students.

Additionally, the study confirms that MBA aspirants continue to prioritize rankings, faculty expertise, placements, and institutional reputation when choosing a business school. These factors, combined with the emerging emphasis on technological adaptability, suggest that business schools must continuously evolve to meet changing student expectations.

Evolving student preferences in MBA education is the main thing on which this research focused. It highlights the growing importance of adaptability in business schools, particularly in a post-pandemic world where digital learning and institutional flexibility are becoming key determinants of student choice.

Aggarwal (2019) conducted an in-depth study on the transformation of management education in India following economic liberalization and the rapid expansion of the IT sector post-1990. The research shows that how these changes have resulted in a surge in business schools and an increasing diversification of specialized courses in fields such as finance, marketing, human resources, and information technology. However, the study also underscores the pressing need for curriculum restructuring to align with international standards and evolving industry demands.

A major focus of the research is the disconnect between traditional theoretical teaching methods and the dynamic requirements of the corporate world. He emphasizes the importance of interactive and experiential learning techniques, including case studies, simulation exercises, internships, and live industry projects. These methods can enhance students' practical understanding and better prepare them for real-world business challenges. Along with that, the study supports for integration of technology into management education, emphasizing on the role of digital tools, online learning platforms, and AI-driven analytics in enhancing the overall learning experience.

The research also stresses on the importance of strong industry-academia collaboration. Maintaining a strategic partnerships between educational institutions and corporate organizations which can provide students with a lot of practical exposure and can bridge the skill gap, ultimately resulting in improving employability. Furthermore, the study focuses on the increasing demand for entrepreneurial education, encouraging the development of problem-solving abilities, critical thinking skills, and an innovative mindset among students for better align with the evolving business environment. And other important aspect is faculty, as they should be equipped with contemporary knowledge and modern teaching methodologies by continuous training programs. A multidisciplinary approach for integrating subjects like ethics, sustainability, and global business practices to create well-rounded professionals.

At last, Aggarwal suggested that a shift towards competency-based education, personalized learning experiences, and industry-oriented training to enhance the quality and relevance of management education in India. By choosing these strategies we can produce MBA students who are more industry ready and capable of surviving in this competitive world.

Manu T U, Shollapur, and Panneerselvam (2021) conducted a study to analyze about the brand value of an MBA Institutes considered by recruiters. In this research we came to know that branding is critical factor in attracting students, faculty, and recruiters, making it a

decisive element for highly competitive landscape of business education.

A sample of 51 recruiters across various B-schools in Karnataka, criteria for hiring candidates was the crux, the findings reveal recruiters focuses on student's communication and soft skills, coordination with placement cells, leadership qualities, and confidence in the institute's management, other parameters were institute's reputation, ranking, and past placement records, industrial exposure, training programs, and focus on skill development and real world experience all of which contribute to its brand perception

Furthermore, the study examines how institutional infrastructure, faculty quality, industry collaboration, and digital branding impact recruiters' perceptions. It highlights that well-known B-Schools benefit from strong rankings, such as those published by the National Institutional Ranking Framework (NIRF), which significantly influence their brand equity. In contrast, lesser-known institutes struggle to establish a strong presence without effective branding strategies.

The research concludes that a well-established brand not only enhances the employability of graduates but also ensures the long-term success of B-Schools in the evolving management education landscape. By investing in branding strategies, strengthening corporate partnerships, and adapting to industry needs, business schools can secure a competitive edge and attract top recruiters.

➤ **OBJECTIVE OF THE STUDY :**

- To analyse how changes in the business landscape impact B-school rankings and student job prospects.
- To examine how teaching methodologies influence student learning outcomes.
- To understand the role of financial considerations in business school selection.
- To explore the influence of digital marketing and social media on student decisions.
- To evaluate the impact of alumni networks and industry connections on career growth.

➤ **HYPOTHESIS**

- Null Hypothesis (H_0) : There is no significant association between the changing business landscape (e.g. Industry alignment, Online presence, Skillbased Learning) and the need for B-schools to upgrade and become relevant.
- Alternative Hypothesis (H_1): There is a significant association between the changing business landscape and the need for B-schools to upgrade and become relevant.

➤ **SCOPE OF THE STUDY**

- This study examines how the evolving business landscape influences business schools, focusing on rankings, teaching methodologies, student preferences, and career prospects.
- It evaluates the role of digitalization, industry collaborations, and financial considerations in shaping MBA programs.
- A survey of 57 B-school students was conducted, analyzing key factors like job prospects, experiential learning, alumni networks, and online presence.
- The findings aim to provide insights for institutions, students, and policymakers to enhance MBA education and decision-making.

➤ **RESEARCH METHODOLOGY**

- Primary data for research is collected through questionnaire. It includes 13-item questionnaire-based on Chi-square test to identify the hypothesis. The online questionnaire is filled by using any suitable device (e.g., tablet, smartphone, personal computer) with access to the Internet.
- Secondary data is collected from journals, articles, research papers, reports, websites, etc. it is not first-hand data and is not guaranteed to be accurate or genuine.

➤ **DATA ANALYSIS**

Categories	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Job Prospects	22.01	24	9.98	6.97	1.02
Financial Considerations	4.99	20.03	24	11	3.96
DigitalMarketing& social media	42.68	0	0	0	21.31
AlumniNetwork	49.02	0	0	0	14.97

Chi – Square Test Statistics

- **Chi – Square Value** : 177.01
- **Degrees of Freedom** : 12
- **p-value** : 1.75×10^{-31} (almost 0)

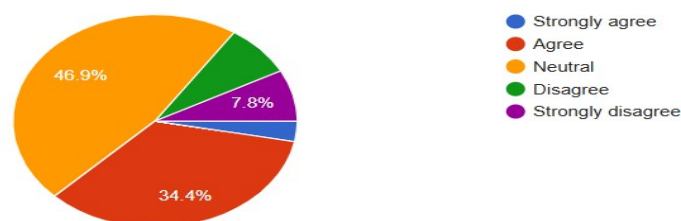
Interpretation

Since the **p – value remains extremely small**, confirming that we **reject the null hypothesis (H₀)**. This means there is a **strong significant association** between the changing business landscape and students' perception of B-schools.

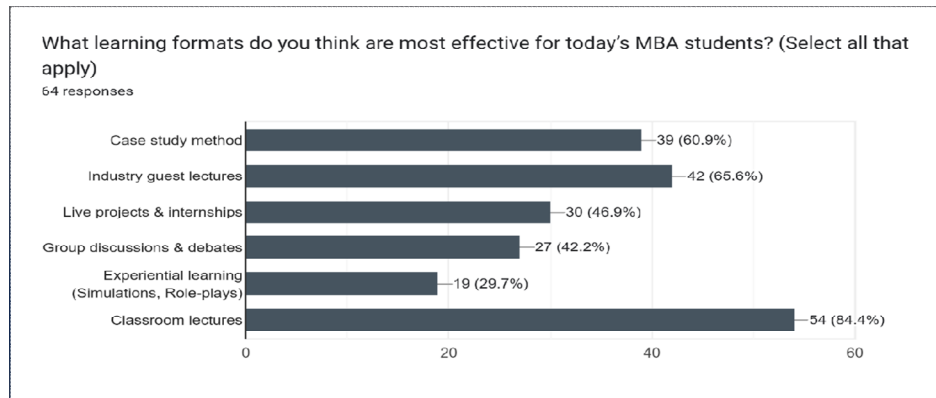
RESULTS

Do you think your curriculum is aligned with current industry standards?

64 responses



The survey indicates that **46.9% of respondents are neutral**, suggesting uncertainty about their curriculum's alignment with industry standards. **34.4% agree**, but very few strongly agree, showing room for improvement. A small **7.8% disagree**, highlighting some dissatisfaction.



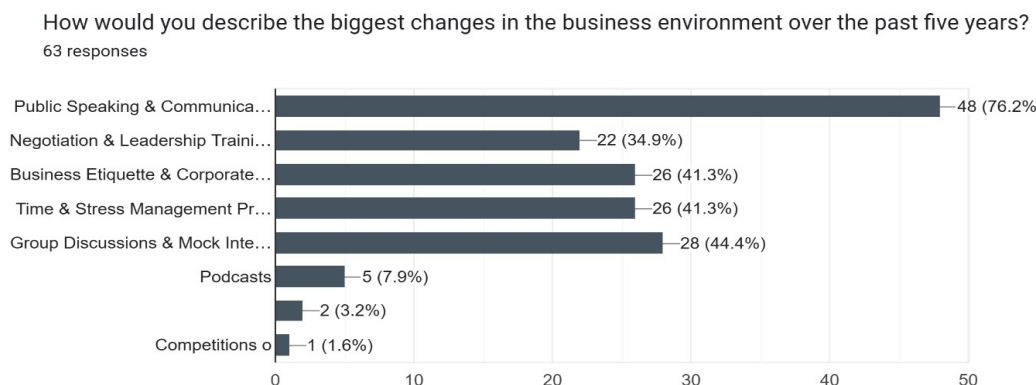
This suggests a possible **lack of practical exposure** and a need for **curriculum updates** to better integrate industry trends, real-world applications, and experiential learning. B-schools should enhance **industry collaboration, internships, and case – based learning** to bridge this gap.

The survey shows that **classroom lectures (84.4%)** remain the most preferred learning format, followed by **industry guest lectures (65.6%)** and **case studies (60.9%)**, highlighting the need for structured learning with real-world insights. **Live projects (46.9%)** and **group discussions (42.2%)** are also valued, while **experiential learning (29.7%)** is the least preferred.

Key Takeaways :

- **Blend of theory and practical exposure** is essential.
- **Guest lectures, case studies, and live projects** should be emphasized for industry relevance.
- **Experiential learning needs more focus** to enhance hands-on skills.

B – schools should **balance traditional methods with interactive, real-world applications** to improve MBA learning effectiveness.



The biggest changes in the business environment over the past five years, according to the survey, include:

Public Speaking & Communication (76.2%) – The most significant shift, emphasizing the growing need for strong communication skills.

Group Discussions & Mock Interviews (44.4%) – Highlighting the increasing importance of collaboration and interview readiness.

Business Etiquette & Corporate Culture (41.3%) and **Time & Stress**

Management (41.3%) – Indicating a focus on professionalism and work-life balance.

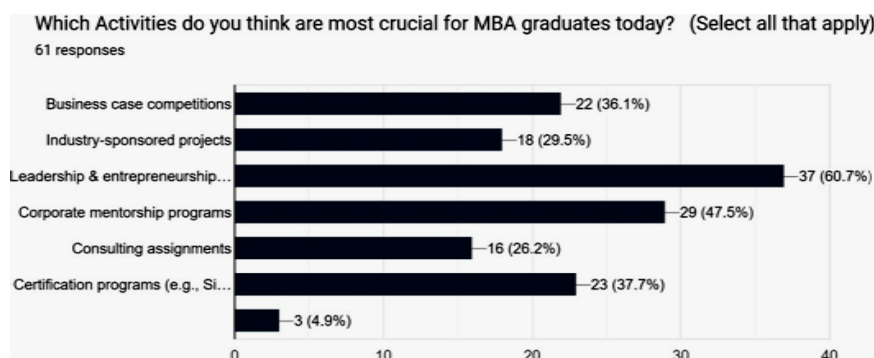
Negotiation & Leadership Training (34.9%) – Reflecting the demand for managerial and strategic skills.

Podcasts (7.9%) and **Competitions (1.6%)** – Have minimal impact in shaping business trends.

Key Takeaways :

Communication, leadership, and workplace adaptability are now **critical business skills**. Professionalism, stress management, and team work are gaining importance. Emerging formats like podcasts and competitions have **limited influence** on business changes.

B-schools should focus on **enhancing communication, leadership, and corporate adaptability skills** to align with evolving industry needs.



The survey highlights the most crucial activities for MBA graduates :

Leadership & Entrepreneurship (60.7%) – The most valued, indicating the importance of strategic thinking and innovation.

Corporate Mentorship Programs (47.5%) – Emphasizing the need for guidance from industry professionals.

Certification Programs (37.7%) and **Business Case Competitions (36.1%)** – Recognized for enhancing specialized skills and problem-solving abilities.

Industry – Sponsored Projects (29.5%) and **Consulting Assignments (26.2%)** – Show moderate importance, reinforcing practical exposure.

Certification Programs (4.9%) – The least preferred, possibly due to their limited impact compared to hands-on experiences.

Key Takeaways :

Leadership, mentorship, and practical exposure are top priorities for MBA graduates. B-schools should **integrate more hands – on projects, competitions, and mentorship programs** to enhance industry readiness.

Certifications alone may not be enough — **experiential learning matters more** in today’s job market.

The survey reveals mixed opinions on whether MBA graduates are prepared for the evolving job market:

51.6% say Yes – A majority believe MBA programs equip graduates with the necessary skills.

25% say May be – A significant portion is uncertain, indicating gaps in perceived job readiness.

23.4% say No – Nearly a quarter feel MBA graduates are not adequately prepared.

Key Takeaways :

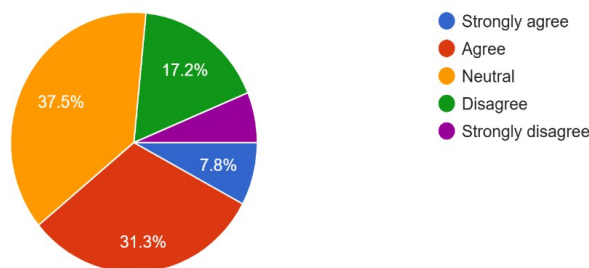
While most believe MBAs are job - ready, a **substantial 48.4 % (May be + No)**

Indicate room for improvement.

Bridging industry gaps through updated curricula, practical training, and mentorship programs is crucial.

B – schools should **focus on real – world application, leadership skills, and adaptability** to enhance job readiness.

To understand the role of financial considerations in business school selection.
64 responses



The pie chart illustrates the responses of **64 participants** regarding **the role of financial considerations in business school selection**.

7.8 % (Strongly Agree) & 31.3 % (Agree) → Total : 39.1%

- Nearly **40% of respondents acknowledge** that financial factors significantly influence their decision to choose a business school.
- This suggests that aspects like tuition fees, scholarships, loan availability, and return on investment (ROI) are major considerations for students.

37.5% (Neutral)

- A large portion of participants remains neutral, indicating that financial considerations **may not be the only** deciding factor for them.
- Other factors like reputation, faculty, curriculum, and placements might be equally or more important.

17.2 % (Disagree) & 6.3 % (Strongly Disagree) → Total : 23.5 %

- Nearly **a quarter of respondents do not consider financial aspects as a primary factor** in selecting a business school.

This suggests that these students may prioritize factors such as academic quality,

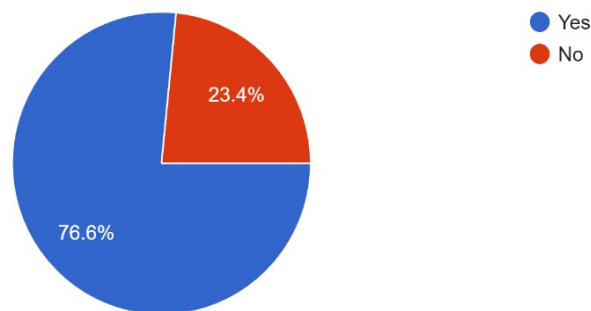
- networking opportunities, or career growth over financial constraints.

Key Takeaways :

While financial considerations play a crucial role in B – school selection for many students, the **overall impact is mixed**. Some students focus heavily on cost-effectiveness, while others prioritize other attributes like reputation, faculty, and career opportunities. Business schools can **offer scholarships, flexible financing options, and strong placement support** to appeal to students with financial concerns.

Does alumni network and industrial connections help in career growth?

64 responses



The pie chart presents the responses of **64 participants** regarding the impact of **alumni networks and industrial connections on career growth**.

76.6 % of respondents (majority) answered "Yes"

- This indicates that most individuals recognize the significant role of alumni networks and industry connections in career advancement.
- It highlights that networking can provide job opportunities, mentorship, and industry insights, ultimately boosting professional growth.

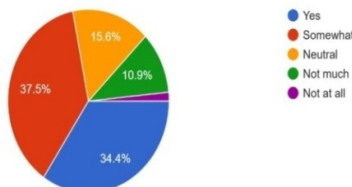
23.4 % of respondents answered "No"

- A smaller group believes that alumni networks and industrial connections do not have a significant impact on career growth.
- This could imply that some individuals rely more on personal skills, experience, or qualifications rather than networking for career advancement.

Key Takeaways :

The results suggest that alumni networks and industry connections are generally perceived as **Valuable assets for career growth**. Educational institutions and businesses should **Strengthen alumni relations and industry collaborations** to maximize career opportunities for students and professionals.

Do you feel changes in the business landscape impact B-school rankings and student job prospects ?
64 responses



The pie chart presents responses from **64 participants** on whether **changes in the business landscape impact B-school rankings and student job prospects**.

34.4% (Yes)

- A significant portion of respondents firmly believes that shifts in the business environment directly influence **B-school rankings and job opportunities** for students.
- This could indicate that economic trends, industry demands, and technological advancements play a major role in shaping business education and Employment prospects.

37.5% (Somewhat)

- The largest percentage of respondents feels that business land scape changes have a **moderate** impact.
- This suggests that while these changes are influential, other factors like a school's reputation, networking opportunities, and faculty quality also Contribute to rankings and career prospects.

15.6% (Neutral)

- A small segment remains uncertain, indicating that they may not have Observed a clear correlation between business trends and B-school outcomes.

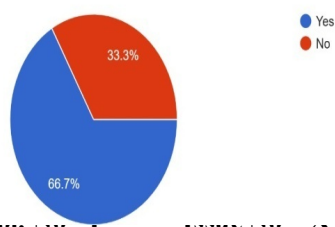
10.9% (Not Much) & 1.6% (Not at All)

- A minority of respondents believe that business land scape changes **do not significantly** affect rankings or job opportunities.
- This implies that factors like **institutional stability, curriculum strength, and alumni networks** might play a more dominant role than external business trends.

Key Takeaways :

The overall responses suggest that **business landscape changes do impact** B-school rankings and job opportunities, but the extent of their influence varies. While most respondents acknowledge at least some impact, **other factors like reputation, faculty, and industry connections also play a crucial role**. Business schools should continuously **adapt their curriculum, industry collaborations, and placement strategies** to stay relevant in a

Would a business school's strong online presence influence your decision to apply, even if you haven't visited the campus?
63 responses



changing business environment.

The pie chart presents responses from **63 participants** regarding whether a **business school's strong online presence** would influence their decision to apply, even without visiting the campus.

66.7% (Yes)

- A **significant majority (about two-thirds)** of respondents agree that a business school's online presence can impact their decision to apply.
- This suggests that factors like a well-designed website, active social media engagement, virtual campus tours, alumni testimonials, and online faculty interactions play a crucial role in shaping applicants' perceptions.

33.3% (No)

- About **one-third of respondents** do not rely on an institution's online presence when making their decision.
- This implies that they may prioritize **physical visits, word-of-mouth recommendations, rankings, or direct interactions with faculty and students** before finalizing their choice.

Key Takeaways :

In today's digital era, a **strong online presence is a key factor** in influencing potential applicants. Business schools should invest in digital marketing strategies; inter active virtual experiences, and transparent online communication to attract students, especially those who cannot visit the campus in person. However, a portion of applicants still **prefer traditional methods of evaluation**, indicating that physical engagement and offline reputation remain relevant.

➤ SCOPE FOR FURTHER RESEARCH :

Most studies focus on ranking methodologies (e.g., Financial Times, QS, Bloomberg) but do not deeply analyze which factors matter most to recruiters and employers.

Limited comparative studies on pedagogy across global B-schools (e.g., case-based vs. experiential learning vs. traditional lectures).

Limited research on how industry partnerships influence curriculum design and job placements.

➤ LIMITATIONS OF THE STUDY :

- **Sample Size Constraint** – The study is based on a sample of 64 respondents, which may not be fully representative of the broader population of B-school students, faculty, and recruiters.
- **Geographical Limitation** – The research is primarily focused on a specific region, and findings may not be generalizable to global B-schools.
- **Limited Industry Representation**–The study includes corporate recruiters, but a larger, more diverse industry sample could provide deeper insights.
- **Survey Bias** – Respondents' personal experiences and perceptions may influence

survey results, leading to potential bias.

- **Rapid Industry Changes** – Business landscapes evolve quickly, and findings may become outdated as new industry trends emerge.
- **Lack of Longitudinal Data** –The study captures a snap shot of current trends but does not track long-term changes in management education.
- **Limited Focus on Pedagogical Comparisons** – The research does not deeply Analyze how different teaching methods (e.g., experiential vs. case-based learning) impact student preparedness.

➤ **CONCLUSION :**

The findings from this study reveal a statistically significant association between the changing business landscape and students' perception of B-schools. The chi-square test results indicate that key factors such as job prospects, financial considerations, digital marketing, and alumni networks significantly shape how students evaluate the relevance and effectiveness of business education.

A notable disparity in student opinions suggests that while B-schools have adapted to some industry demands, gaps remain in areas such as curriculum innovation, industry collaboration, and experiential learning. The results emphasize the growing influence of digital transformation and networking opportunities in shaping students' choices and expectations.

To enhance their value proposition, B-schools should focus on practical skill development, leadership training, stronger industry-academia partnerships, and technological integration in pedagogy. Addressing these aspects will ensure MBA graduates are better equipped for a rapidly evolving corporate landscape. Future research should explore global best practices, employer perspectives, and the long-term impact of curriculum changes to further refine business education strategies.

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OCCUPATIONAL STRESS AND PSYCHOLOGICAL WELL-BEING OF EMPLOYEES IN ORGANIZED RETAIL OUTLETS : A COMPREHENSIVE ANALYSIS

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➤ ABSTRACT :

This research delves into the intricate relationship between occupational stress and psychological well-being among employees in organized retail outlets. The retail sector, characterized by its dynamic and demanding nature, presents a unique set of stressors that can significantly impact employee mental health. This study aims to comprehensively assess the prevalence of occupational stress, analyze its effects on psychological well-being, and explore the mediating and moderating factors that influence this relationship. Employing a mixed-methods approach, including quantitative surveys and qualitative interviews, this study examines the specific stressors encountered by retail employees, such as customer interactions, work-life imbalance, and performance pressures. The quantitative analysis utilizes standardized scales to measure occupational stress and psychological well-being, while qualitative interviews provide in-depth insights into the lived experiences of employees. The findings reveal a significant negative correlation between occupational stress and psychological well-being, with specific stressors like emotional labor and role ambiguity playing a prominent role. Furthermore, the study investigates the potential moderating effects of coping mechanisms and organizational support. The research concludes by emphasizing the need for targeted interventions and organizational strategies to mitigate occupational stress and enhance the psychological well-being of retail employees, fostering a healthier and more productive work environment.

Keywords : Occupational Stress, Psychological Well-being, Organized Retail, Emotional Labor, Role Ambiguity, Work-Life Imbalance, Coping Mechanisms, Organizational Support, Employee Mental Health, Retail Employees.

➤ INTRODUCTION :

The organized retail sector is a cornerstone of modern economies, providing employment and essential services. However, the inherent characteristics of retail work, including long hours, high customer interaction, and demanding performance targets, can lead to significant occupational stress. This stress, if left unaddressed, can profoundly impact the psychological well-being of retail employees, affecting their mental health, job satisfaction, and overall quality of life. Psychological well-being, encompassing emotional, social, and psychological dimensions, is crucial for individual and organizational success.

Employees experiencing high levels of stress are more susceptible to burnout, anxiety, depression, and reduced productivity.

Understanding the complex interplay between occupational stress and psychological well-being in the retail context is vital for developing effective strategies to support employee mental health. This research aims to provide a comprehensive analysis of this relationship, exploring the specific stressors prevalent in organized retail and examining their impact on employee psychological well-being. By considering the role of moderating factors like coping mechanisms and organizational support, this study seeks to offer valuable insights for improving the work environment and fostering a culture of well-being within the retail sector.

➤ **OBJECTIVES :**

1. To identify and analyze the specific occupational stressors experienced by employees in organized retail outlets.
2. To assess the impact of occupational stress on the psychological well-being of retail employees.
3. To examine the mediating role of emotional labor and role ambiguity in the relationship between occupational stress and psychological well-being.
4. To provide recommendations for organizations to mitigate occupational stress and enhance the psychological well-being of their retail employees.

➤ **RESEARCH METHODOLOGY :**

This study employs a mixed-methods research design, combining quantitative and qualitative data collection and analysis techniques.

Quantitative Data Collection :

- A cross-sectional survey was conducted using standardized questionnaires to measure occupational stress and psychological well-being.
- Occupational stress is assessed using the Perceived Stress Scale (PSS) or similar validated instrument.
- Psychological well-being is measured using the Scales of Psychological Well-being (SPWB) or the Warwick-Edinburgh Mental Well-being Scale (WEMWBS).

Qualitative Data Collection :

- Semi-structured interview was conducted with a subset of retail employees to gain in-depth insights into their experiences with occupational stress and its impact on their psychological well-being.
- Quantitative data is analyzed using descriptive statistics, correlation analysis, regression analysis, and structural equation modeling (SEM) to examine the relationships between variables.
- Qualitative data is analyzed using thematic analysis to identify key themes and patterns related to occupational stress and psychological well-being.

➤ **REVIEW OF LITERATURE :**

- Existing research highlights the prevalence and impact of occupational stress in the retail sector. Stressors in Retail: Studies have identified various stressors, including customer aggression, emotional labor, role ambiguity, work-life conflict, and performance pressures. (e.g., Hochschild, 1983; Lee & Ashford, 1996)
- Psychological Well-being and Stress: Research consistently demonstrates a negative relationship between occupational stress and psychological well-being, leading to increased anxiety, depression, and burnout. (e.g., Lazarus & Folkman, 1984)
- Emotional Labor: The requirement to display specific emotions during customer interactions can lead to emotional exhaustion and reduced psychological well-being. (e.g., Grandey, 2000)
- Coping Mechanisms: Effective coping strategies can mitigate the negative effects of occupational stress on psychological well-being. (e.g., Carver et al., 1989)
- Organizational Support: Supportive work environments and organizational practices can enhance employee well-being and reduce stress. (e.g., Eisenberger et al., 1986)

➤ **OCCUPATIONAL STRESS :**

This refers to the psychological, physical, and behavioral reactions that occur when job demands exceed an employee's resources and capabilities. In retail, this can stem from ;

- **Customer Interactions :** Dealing with difficult or demanding customers, handling complaints, and managing emotional labor (the need to display specific emotions).
- **Workload and Pace :** Long working hours, irregular schedules, peak-season demands, and pressure to meet sales targets.
- **Role Ambiguity and Conflict :** Unclear job expectations, lack of autonomy, and conflicting demands from supervisors.
- **Job Insecurity :** Concerns about job stability, especially in a competitive retail environment.
- **Lack of Work-Life Balance :** The inability to separate work and personal life, leading to exhaustion and burnout.

➤ **PSYCHOLOGICAL WELL-BEING :**

This encompasses an individual's overall mental and emotional health, including:

- **Emotional Well-being :** Experiencing positive emotions, managing negative emotions, and feeling emotionally stable.
- **Social Well-being :** Maintaining positive relationships, feeling connected to others, and having a sense of belonging.
- **Psychological Functioning :** Feeling competent, autonomous, and having a sense of purpose and meaning in life.

➤ **Potential Consequences of Occupational Stress :**

1. **Reduced Job Satisfaction :** Employees experiencing high levels of stress are more likely to be dissatisfied with their jobs.
2. **Increased Absenteeism and Turnover :** Stress can lead to increased sick leave and employee turnover, which can be costly for organizations.

- 3. Decreased Productivity and Performance :** Stress can impair cognitive function, leading to decreased productivity and performance.
- 4. Mental and Physical Health Problems :** Chronic stress can contribute to anxiety, depression, burnout, and other health issues.
- 5. Impact on Customer Service :** Stressed employees are more likely to provide poor customer service, which can damage the reputation of the organization.

➤ **Importance of Addressing Occupational Stress :**

1. Organizations have a responsibility to create a healthy and supportive work environment for their employees.
2. Addressing occupational stress can lead to :
3. Improved employee well-being and job satisfaction.
4. Reduced absenteeism and turnover.
5. Increased productivity and performance.
6. Enhanced customer service.
7. Improved organizational reputation.

➤ **CONCLUSION :**

This research provides a comprehensive understanding of the complex relationship between occupational stress and psychological well-being among employees in organized retail outlets. The findings highlight the significant impact of specific stressors, such as emotional labor and role ambiguity, and emphasize the importance of coping mechanisms and organizational support. This study contributes to a deeper understanding of the challenges faced by retail employees and offers valuable insights for developing targeted interventions and organizational strategies to promote a healthier and more supportive work environment. Future research could explore the long-term effects of occupational stress and examine the effectiveness of specific interventions in mitigating stress and enhancing psychological well-being.

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A STUDY OF CHALLENGES FACE BY DIVYANJAN INDIVIDUAL AT THEIR WORKPLACE WITH SPECIAL REFERENCE TO PUNE CITY

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➤ ABSTRACT

Divyanjan individual face various challenges at their workplace despite efforts to promote inclusivity. In Pune, a rapidly growing city with diverse employment opportunities, differently-abled individuals face barriers related to accessibility, discrimination, and inadequate support systems. One of the primary challenges is physical accessibility. Many workplaces lack ramps, elevators, and adapted restrooms, making mobility difficult. Additionally, transportation remains a concern, as public transport is not always wheelchair-friendly. Another major issue is discrimination and bias. Employers often hesitate to hire divyanjan individuals due to misconceptions about productivity and additional costs for accommodations. This results in limited job opportunities and unequal career growth. Lack of assistive technology and infrastructure further complicates employment. Many offices are not equipped with specialized software, ergonomic furniture, or sign language interpreters, making it harder for disabled employees to perform effectively. Social isolation is another challenge, as differently-abled workers may struggle to integrate into workplace culture due to communication barriers or biases. Moreover, inadequate legal enforcement of disability rights in private sectors limits their opportunities.

To foster inclusivity, companies should focus on accessibility improvements, sensitization programs, and government incentives for hiring divyanjan individuals. A truly inclusive workplace benefits not only the disabled but the organization as a whole.

➤ INTRODUCTION :

Employment plays a critical role in ensuring financial independence and social inclusion for divyanjan individuals, however, divyanjan individuals often face various challenges at their workplace, ranging from physical accessibility barriers to societal prejudices. In a progressive city like Pune, which is a hub for various industries, the issue of workplace inclusivity for the divyanjan remains an important issue. Despite legal provisions such as the Rights of Persons with Disabilities Act, 2016, many workplaces in Pune still lack the necessary infrastructure and support systems to accommodate divyanjan employees. Factors such as inaccessible office spaces, limited job opportunities, discrimination, and inadequate technological support hinder their professional growth. Moreover, a lack of awareness among employers and colleagues further contributes to the difficulties faced by disabled individuals. This study aims to explore the challenges faced by divyanjan employees in Pune, highlighting

workplace barriers, employer attitudes, and policy gaps. By understanding these issues, organizations and policymakers can work towards creating a more inclusive and accessible work environment, ensuring equal opportunities for all. One of the primary issues is the lack of accessibility in offices, making it difficult for divyanjan employees to navigate workspaces. Many companies still do not have adequate infrastructure, such as ramps, elevators, and accessible washrooms, leading to discomfort and dependence on others. Furthermore, employer biases and social stigmas often result in reduced employment opportunities for disabled individuals, as many recruiters perceive them as less productive or requiring extra resources. Additionally, technological and institutional limitations pose challenges in providing an inclusive work environment. The absence of assistive technologies, such as screen readers for the visually impaired or sign language interpreters for the hearing impaired, further isolates disabled employees. Social exclusion from workplace activities and limited career growth opportunities exacerbates the problem.

➤ **OBJECTIVES :**

1. To Study the Challenges Faced by Divyanjan individual at their workplace
2. To know the job satisfaction level of Divyanjan individual at workplace
3. To critically analyses the accessibility issues of the Divyanjan individuals at their workplace
4. To Recommended Some Measures for overall development of the divyanjan individuals at their workplace.

➤ **HYPOTHESIS :**

1. H1 There is No Significant Challenges Faced by Divyanjan individual at their workplace
H0 There are Various Challenges Faced by Divyanjan individual at their workplace
2. H1 There are no significant problems faced by Divyanjan in terms of accessibility at the workplace.
H0 Divyanjan faces significant problems in terms of accessibility at the workplace.

➤ **LITERATURE REVIEW**

- a. **(Education Forum 2015)**. The concept of inclusive education system was formed in number of nations at the beginning of the 18th century in order to teach all children, regardless of their modifications.
- b. **(Bano, Akhter, & Anjum, 2013)**. Examine educations have underlined need for inclusive instruction rather than differentiated teaching in order to treat students with disabilities equally in terms of services and chance.
- c. **(Schmidt & Cagran, 2008)**. As per **Hall, Healey, and Harrison (2002)**, students with special needs are disadvantaged groups in the world that struggle with a number of problems like exclusion, loneliness & discrimination. Their limitations, which prohibit them from integrating into society at large, pose the biggest challenges to their learning and development.
- d. **(Konur, 2000; Szymanski & Bilus, 2011)**. Both philosophically and practically, it is recognized that individuals with disorder merit different learning provision (Tinkling, Riddell, & Wilson, 2004). Giving learners with special needs equal opportunities has

remained a pipe vision in Pakistan.

- e. **(Vickerman & Blundell, 2010)**. Students with special needs meet the significant challenges in achieving their educational goals (Holloway, 2001). Instructive societies need to take appropriate and effective action in method of resource allocation and capacity building rather than simply showing compassion for the challenged population and all buildings civil and personal must be easily available to them. There has beavery little and marginal progress onAct in terms of PWD facilitation in both public and private sectors
- f. **(Ahmed & Khan, 2011 ; Lewis, 2004). Selvum (2004)** led the study in a South African school, on the other hand, discovered that the majority of kids with learning difficulties or other special need shave negative classroom experiences. When students participate in peer group tasks and activities in the classroom, their classmates tease them, label them, and leavethem out. These issues raise questions about the reasons for the students.
- g. **(Allam & Martin, 2021)**. struggles, the root causes of the issue, and the impact on the acceptance of inclusive education at the university level. One of the main barriers preventing people with disabilities from obtaining a university degree is a deficiency of reachable structure Teachers may not receive sufficient training up on inclusive teaching methods and strategies to accommodate diverse learning needs, making it challenging to cater to the requirements of the differently-abled students.

➤ **RESEARCH METHODOLOGY**

A. Research Design :

This study follows a descriptive and analytical research design to explore the challenges faced by Divyanjan in workplaces, with a special focus on Pune City. The research aims to assess workplace accessibility, employer attitudes, and the effectiveness of government policies in promoting inclusivity.

B. Research Approach

A mixed-method approach will be used, incorporating both quantitative and qualitative data. A structured questionnaire will be used to collect numerical data, while case studies will provide deeper insights into individual experiences.

C. Data Collection Methods :

1. Primary Data Collection:

Primary data for this study was collected using a structured questionnaire designed to obtain relevant insights from employees at various oration in Pune. The questionnaire incudes main aspects related to the study's objectives and were distributed to selected beneficiaries using the snowball sampling technique.

A. Survey Method: A structured questionnaire will be distributed to Divyanjan employees working in different sectors in Pune.

B. Observations : Field visits to workplaces to assess accessibility infrastructure.

2. Secondary Data Collection:

Reviewing reports, articles, and government policies related to employment accessibility for disabled individuals. Analysis of employment statistics and legal frameworks such as the Rights of Persons with Disabilities (RPWD) Act, 2016.

D. Sampling Technique and Sample Size

Sampling Method :

Purposive and convenience sampling will be used to select participants.

Sample Size : The study will target at least 50 Divyanjan employees across various industries, including IT, government, retail, and manufacturing sectors in Pune.

E. Data Analysis Techniques

Quantitative Analysis :

Descriptive statistics bar graph chart to analyses survey responses.

Hypothesis testing using Chi-square test or T-test to determine the significance of workplace accessibility challenges.

Qualitative Analysis : Thematic analysis of interview responses to identify key workplace issues and policy gaps.

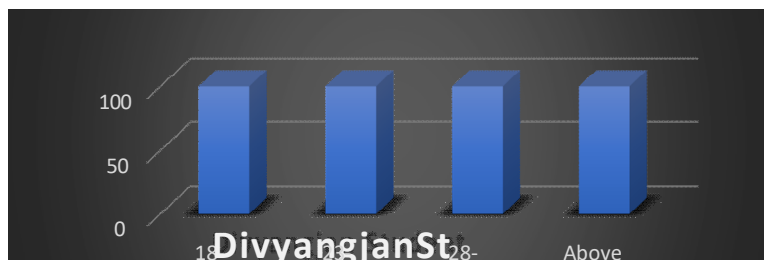
➤ SCOPE OF THE STUDY :

The study aims to explore the various challenges faced by Divyanjan (persons with disabilities) in the workplace, with a specific focus on Pune city. The research delves into the barriers that hinder their full participation and inclusion in professional environments, spanning across different sectors such as corporate offices, government organizations, educational institutions, and small to medium enterprises. It investigates workplace challenges related to physical accessibility, discrimination opportunities, inadequate workplace accommodations, lack of assistive technologies, and social inclusion issues. By focusing on Pune, a rapidly growing metropolitan city with a diverse work force, the study seeks to analyses how well organizations are integrating disabled individuals into their workforce and the effectiveness of current policies in ensuring an inclusive work environment.

The research encompasses a wide range of disabilities, including physical disabilities (mobility impairments), sensory disabilities (visual and hearing impairments), speech-related disabilities, cognitive disabilities (such as autism and intellectual disabilities), and psychological disabilities (such as anxiety and depression). By examining these various disability categories, the study provides a holistic understanding of the diverse experiences of Divyanjan individuals in professional settings. Additionally, it evaluates the role of government policies, corporate diversity initiatives, and legal frameworks such as the Rights of Persons with Disabilities Act, 2016 in shaping employment opportunities and workplace accommodations for disabled individuals.

8. DATA ANALYSIS :

AGE

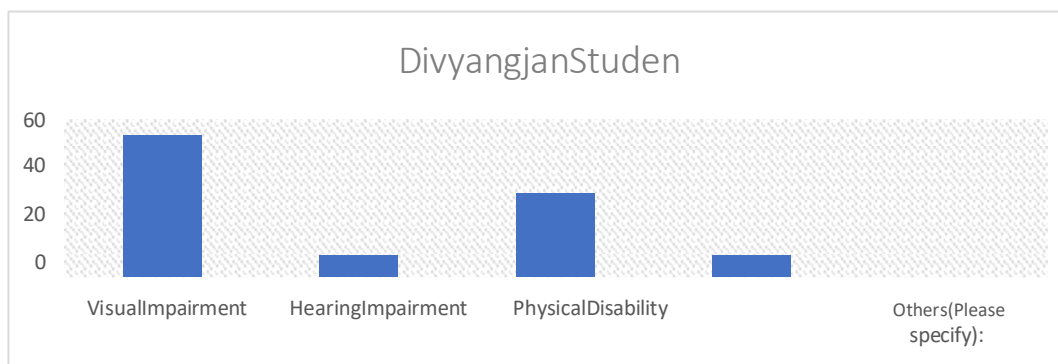


- 1. 18-22 years (24%)** This age group represents the largest portion of the Divyanjan Student population. These students are likely in the early stages of their educational journey, likely in undergraduate or vocational courses. There may be a higher focus on inclusive education programs, awareness campaigns, and accessibility services to fulfil to their needs.

2. **23-27 years (44%)** The largest proportion of students falls into this age group. These students pursuing advanced education like postgraduates or specialized training. This age group could be more focused on career preparation, internships, or skills development, and need more targeted resources like career counselling, assistive technology, and academic support to ensure they have equal opportunities to excel.
3. **28-32 years (30%)** This group includes students who may be returning to education after sometime or are pursuing advanced studies or certification courses. The needs of this group might involve support for balancing studies with life responsibilities, such as family or work. They might require more personalized academic support and flexibility in course schedules.
4. **Above 32 years (2%)** This age group is quite small and may represent students pursuing advanced education or career changes later in life. Institutions should provide tailored support services for older students, particularly for those who may need accommodations for physical or challenges.

5.

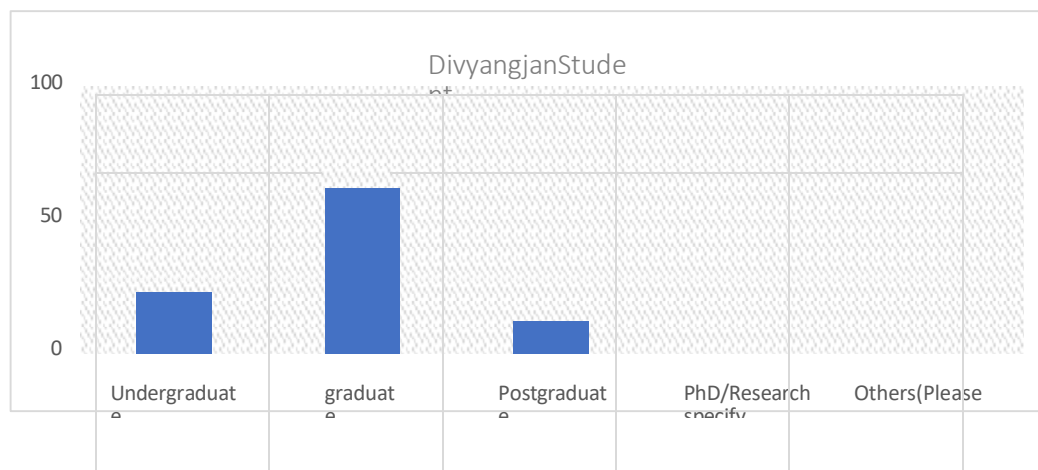
1. **Type of Disability :**



1. **Prevalence of Visual and Physical Disabilities :** The fact that visual and physical impairments are the most common among the students suggests a greater need for assistive technologies and accessible infrastructure.
2. **Low Incidence of Hearing and Learning Disabilities:** While there are students with hearing impairments and learning disabilities, these categories represent a much smaller portion of the student population. However, it's still important to address their needs with targeted communication strategies and tailored learning plans.
3. **Need for Comprehensive Support:** Schools should invest in both physical accessibility and educational tools that cater to the specific needs of these students. This might include Training staff to be more inclusive and aware of the unique challenges these students face.
4. **Implementing peer support programs** where students with different disabilities can assist and learn from each other. **Customized and Inclusive Educational Strategies:** Schools and educators can consider individualized education plans (IEPs) for students with learning disabilities or other specific impairments to enhance learning outcomes.
5. **Importance of Assistive Technology:** Many students across the categories could benefit from assistive technology, whether for visual aids, hearing aids, or mobility devices. These tools can make a significant difference in the students' daily lives and

academic performance

3. Education :



- 1. High Representation at Graduate Level:** The fact that 62 students are in the graduate category is encouraging, suggesting that Divyanjan students are participating in higher education. More programs that support accessibility and academic accommodation could increase participation at the undergraduate and postgraduate levels.
 - 2. Barriers to Doctoral Studies:** There is significant underrepresentation at the PhD and research level. Given the challenges associated with doctoral research, Divyanjan students may require additional support, including financial assistance, academic mentorship, and accommodations for research processes. Increased emphasis on inclusive research opportunities and funding could help address this gap.
 - 3. Support for Early Career Students:** Programs aimed at undergraduate students should focus on building a strong foundation for Divyanjan students to continue their education beyond the bachelor's level. Scholarships, student support services, and mentorship programs would go along way in encouraging more Divyanjan students to pursue advanced education.
 - 4. Diversity in Educational Paths:** Encouraging a variety of educational qualifications and career paths, including vocational training, skill-building courses, and apprenticeships, could provide more options for Divyanjan students who may not pursue traditional academic degrees.
 - 5. Collaboration with Institutions:** It's important that educational institutions collaborate with organizations, government programs, and support networks for Divyanjan students to ensure they have the resources and opportunities needed for success at every academic level.
- 4. Which of the following accessibility issues do you face in your institution? (Multiple options can be selected)**

Question	Category	Severity
Assistive Devices (41%)	High	Affects learning, independence,

		and participation
Ramps / Lifts (26%)	Moderate	Limits classroom access and mobility
Transportation (19%)	Moderate	Causes absenteeism and delays
Inaccessible Accessibility (10%)	Low	Creates usability issues, slows down processes
No Sign Language Interpreter (4%)	Low	Affects hearing-impaired students but is Less reported
Unspecified Issue (7%)	Unknown	Requires further investigation

- 1. Assistive Device Availability is the Biggest Concern** : 41% of students struggle due to the lack of assistive devices, indicating a significant gap in resources.
- 2. Physical Infrastructure Needs Improvement** : 26% report a lack of ramps / lifts, making movement difficult for mobility – impaired students.
- 3. Transportation Barriers Exist** : 19% of students face transportation difficulties, possibly due to a lack of accessible public or institutional transport.
- 4. Communication Barriers are Relatively Low but Present** : 4% report the absence of sign language interpreters, affecting hearing – impaired students.

Unclear Data Point (7%):

The "7" in the data set is ambiguous. Clarification is needed to determine what this represents.

5. Which mode of transport you are prefer for going to the college ?

Mode of Transport	No. of Students	Percentage (%)	Usage Level
Public Transport	47	47%	High
Auto Rickshaw	30	30%	Moderate
Blind Stick	23	23%	Low
Tricycle	0	0%	None
Wheelchair	0	0%	None

1. Public Transport is the Most Used Mode (47%)

Nearly half of the students rely on buses, trains, or shared transport.

Suggests affordability and availability but may also indicate challenges in accessibility for differently-abled students.

2. Auto Rickshaw (30%) is the Second Most Preferred

Auto-rickshaws are often chosen for shorter distances or convenience.

3. **The relatively high percentage (30%) suggests that public transport may not be fully accessible or convenient for some students.**

Blind Stick Users (23%) Indicate a High Number of Visually Impaired Students These students likely walk or use partial assistance to reach the institution. Highlights potential accessibility challenges in public transport and pedestrian infrastructure.

4. **No Students Use Tricycles or Wheel chairs for Transport (0%)** – Indicates a lack of accessible tricycles or wheelchair - friendly transport. May suggest poor infrastructure that forces students with mobility impairments to depend on others.

6. **Other students’ behavior towards you in your college ?**

Behaviour Type	No. of Students	Percentage (%)	Behaviour Level
Good	82	82%	VeryPositive
Helpful	16	16%	Supportive
Bad	2	2%	MinimalNegative

- 1. Good Behaviour** Majority (82%) Indicates a highly inclusive and accepting environment. Most students treat their differently-abled peers with respect.
- 2. Helpful Behaviour** Moderate (16%) Shows active support from some students May include assisting in mobility, academics, or communication.
- 3. Bad Behaviour** Minimal (2%) A small percentage reports negative experiences. could discrimination, bullying, or lack of awareness?
4. Do you get extra time or assistance during exams?

Response	No. of Students	Percentage (%)	Level of Support
Yes	68	68%	Majority Receive
Sometimes	25	25%	Inconsistent Support
No	7	7%	Lack of Support

- 1. Majority (68%) Get Extra Time or Assistance** – Indicates the institution has supportive exam policies for differently – abled students.
- 2. Some Students (25%) Get In consistent Support** –
 - Uncertainty in accommodations may be due to Lack of awareness among faculty. Administrative delays in providing assistance. In consistent application of disability policies.
- 3. A Small Percentage (7%) Receive No Support**
- These students might be overlooked or unaware of available accommodations. Highlights the need for stronger policy enforcement and awareness.

7. **Do you get availability of wheel chair / blind stick in your college ?**

Response	No. of Students	Percentage (%)	Level of Availability
Yes	87	87%	Highly Available
No	13	13%	Limited Availability

1. Majority (87%) Have Access to Wheel chairs / Blind Sticks

- a. Indicates that the institution has a good supply of assistive devices.
- b. Shows a commitment to accessibility for students with mobility and visual impairments.

2. Some Students (13%) Report Unavailability

- a) Insufficient stock of wheelchairs / blind sticks. And
- b) Lack of proper distribution or awareness about how to obtain them. Devices may be outdated or non-functional.

Teachers / professors behaviours towards you your college

Response	No. of Students	Percentage (%)	Behaviour Level
Very Good	57	57%	Highly Positive
Neutral	33	33%	Moderate
Bad	7	7%	Negative
Very Bad	3	3%	Highly Negative

- 1. Majority (57%) Experience Very Good Behaviour-** Indicates that most professors are supportive and accommodating. Shows positive faculty engagement with differently-abled students.
- 2. A Significant Portion (33%) Reports Neutral Behaviour** -These professors may not be actively supportive but also not discriminatory. Suggests a lack of awareness or training on inclusive teaching methods.
- 3. Some Students (10%) Face Bad or Very Bad Behavior** - 7% bad and 3% very bad experiences suggest: Possible bias or lack of sensitivity from some faculty. Inconsistent application of accommodations (e.g., extra time, assistive support). Potential exclusion from academic discussions.

8. Do you have a scholarship for your course

Response	No. of Students	Percentage (%)	Level of Support
Yes	82	82%	High Availability
No	18	18%	Limited Availability

Majority (82%) Have Access to Scholarships

A significant portion of students benefit from financial support for their education. Suggests that the institution is committed to financial inclusion for differently-abled students.

1. Some Students (18%) Do Not Have Access to Scholarships

These students may face financial barriers to their education. Potential causes Limited availability of scholarships. Awareness gap or difficulty in accessing the scholarship application process.

9. Which scholarship are you a beneficiary of ?

Scholarship Type	No. of Students	Percentage (%)
Central	40	49%
State	30	37%
District	12	15%
Other	0	0%

- 1. Central Scholarship – Most Common (49%)** The majority of scholarship recipients benefit from central governments scholarships.

Indicates that national programs for differently-abled students are effectively reaching many students.

- 2. State Scholarship Second Most Common (37%)** A significant number of students receive state-level support, suggesting that regional governments are also committed to providing financial aid.

- 3. District Scholarship Smaller Proportion (15%)** A smaller proportion benefit from district-level scholarships, which might be more localized or limited.

This could indicate gaps in district-level support or the need for more targeted outreach to students.

- 4. No Other Scholarship**

Indicates no additional scholarship programs are being utilized by students outside of government schemes.

10. Are you applied any kind of scholarship or fellowship

Response	No. of Students	Percentage(%)
Yes	70	70%
No	30	30%

70% of Students Have Applied for Scholarships / Fellowships

A majority of students are actively seeking financial support for their studies, indicating a strong awareness of available opportunities.

30% of Students Have Not Applied for Scholarships / Fellowships

11. Are there any bureaucratic challenges in availing financial assistance ?

Lack of applications might be due to Unawareness of available scholarships / fellowships.

Difficulties in the application process, such as complex documentation or eligibility criteria.

Response	Number of Respondents	Percentage
Yes (Challenges Exist)	67	64.4%
No (No Challenges)	33	35.6%

Perceived lack of opportunity or self-doubt in receiving financial study highlights that 64.4% of differently – abled students face bureaucratic challenges in availing financial aid, primarily due to lengthy procedures, lack of awareness, delayed fund disbursement, and accessibility issues. Addressing these problems through policy reforms, institutional support, and better digital accessibility can significantly ease financial stress and enhance educational opportunities for differently-abled students.

Bureaucratic Challenge	Number of Respondents	Percentage
Lengthy Documentation Process	25	37.3%
Lack of Awareness	18	26.9%
Delayed Disbursement	12	17.9%
Institutional Barriers	10	14.9%
Complicated Eligibility Criteria	9	13.4%
Limited Digital Accessibility	7	10.4%
Frequent Application Rejections	6	9.0%
Multiple Approval Levels	5	7.5%
Total	67	100%

1. Major Challenges Identified :

Lengthy Documentation Process (25 responses, 37.3%):

The most significant issue, suggesting that students struggle with excessive paperwork and verification requirements.

Solutions : Simplification of forms, digitization of records, and reducing redundant documentation.

Lack of Awareness (18 responses, 26.9%):

Many students are unaware of available scholarships and the process to apply.

Solutions : Awareness campaigns, dedicated university helpdesks, and better outreach programs.

Delayed Disbursement (12 responses, 17.9%) :

Even after approval, financial aid is often not received on time, affecting students’ ability to pay fees.

Solutions : Implementing a real-time tracking system and setting clear deadlines for fund distribution.

2. Moderate Challenges:

Institutional Barriers (10 responses, 14.9%) :

Universities may not provide sufficient support, making the process even more difficult.

Solutions : Appointing disability coordinators and financial aid counsellors.

Complicated Eligibility Criteria (9 responses, 13.4%):

Strict or unclear rules make it difficult for students to qualify for financial aid.

Solutions : Standardizing and simplifying eligibility requirements.

3. Minor but Notable Issues:

Limited Digital Accessibility (7responses, 10.4%):

Online application processes may not be accessible to visually or physically impaired students.

Solutions : Ensuring assistive technology compatibility and user –friendly portals.

Frequent Application Rejections (6 responses, 9.0%):

Many students face rejections without clear reasons or an option to appeal.

Solutions : Transparent rejection criteria and an appeal mechanism.

Multiple Approval Levels (5responses, 7.5%) :

Too many bureaucratic approvals slow down the process.

Solutions : Reducing unnecessary levels of verification

➤ LIMITATIONS OF THE STUDY :

- Findings may not be generalizable to all cities in India.
- Some respondents may hesitate to share negative work place experiences due to job security concerns.
- Limited Sample Size the study may be based on a limited number of respondents, which may not fully represent the diverse experiences of Divyanjan individuals across different industries in Pune.
- Due to social desirability bias or fear of workplace repercussions.
- Limited Scope of Disabilities The study may not cover all types of disabilities equally (e.g., physical, sensory, cognitive, or psychological disabilities), leading to an incomplete understanding of workplace challenges.
- Lack of Employer Perspective If the research focuses mainly on employees with disabilities, it may not capture the perspectives of employers, HR professionals, or policymakers.
- Time Constraints The research may be conducted over a limited period, which might not be sufficient to analyse long-term workplace trends and policy changes.
- Legal and Policy Changes Workplace policies and government regulations are subject to change, which may affect the relevance of the findings over time.
- Data Availability Reliable and comprehensive data on employment rates, workplace accommodations, and specific challenges faced by Divyanjan individuals may be limited or difficult to obtain.
- Technological Accessibility Issues Some respondents may have difficulty accessing digital surveys or interviews due to their disabilities, affecting data collection.

➤ RECOMMENDATIONS :

I Campuses should have accessible ramps, elevators, wide doorways, specially designed furniture, tactile paths, Braille signage, and audio assistance for visually impaired students.

Disability support centres should be established with specialized staff, including

counsellors, sign language interpreters, and personal assistants, along with peer mentoring programs.

Institutions should provide flexible learning materials like audio books, screen readers, captioned videos, and modify assessments with extra time or alternative formats, while introducing disability awareness courses for students and faculty.

Regular workshops should be held to raise awareness about the challenges faced by differently-abled students and promote inclusivity on campus.

Scholarships, grants, fee concessions, and financial assistance for assistive technology should be offered to differently-abled students.

Institutions should provide modern assistive technologies, including speech recognition software, screen readers, Braille tools, and accessible resource libraries with audio books and large print materials.

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FINTECH : AN EASE OF DOING FINANCE

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➤ ABSTRACT :

Fintech, a combination of the words "financial" and "technology", is the use of technology to provide financial services and products. Fintech companies use technology to improve, streamline, or digitize their offerings.

The word “fintech” is simply a combination of the words “financial” and “technology”. It describes the use of technology to deliver financial services and products to consumers. This could be in the areas of banking, insurance, investing – anything that relates to finance. Although it’s a relatively new word, fintech is actually nothing new. Technology has always changed the financial industry. However the internet, combined with the widespread use of devices like smartphones and tablets, means the speed of this change has accelerated greatly in recent years.

Fintech refers to the integration of technology into offerings by financial services companies to improve their use and delivery to consumers. It primarily works by unbundling offerings by such firms and creating new markets for them. Companies in the finance industry that use fintech have expanded financial inclusion and use technology to cut down on operational costs.

In this article efforts have been taken to make out in detailed discussion on fintech and also SWOT analysis of fintech technology.

Keywords : Fintech, finance, technology, integration, digital.

➤ INTRODUCTION :

Fintech, a combination of the words "financial" and "technology", is the use of technology to provide financial services and products. Fintech companies use technology to improve, streamline, or digitize their offerings.

The word “fintech” is simply a combination of the words “financial” and “technology”. It describes the use of technology to deliver financial services and products to consumers. This could be in the areas of banking, insurance, investing – anything that relates to finance. Although it’s a relatively new word, fintech is actually nothing new. Technology has always changed the financial industry. However the internet, combined with the widespread use of devices like smartphones and tablets, means the speed of this change has accelerated greatly in recent years.

➤ OBJECTIVES :

- To know the current state of Fintech research?
- To know the current maturity level of Fintech research?

- To study types of Fintech does Fintech research involve?
- To study the potential future directions of Fintech studies?

➤ **METHODOLOGY :**

This Research is based on secondary resources of existing research done on fintech

What is Financial Technology (Fintech)?

- Fintech refers to the integration of technology into offerings by financial services companies to improve their use and delivery to consumers.
- It primarily works by unbundling offerings by such firms and creating new markets for them.
- Companies in the finance industry that use fintech have expanded financial inclusion and use technology to cut down on operational costs.
- Fintech funding is on the rise, but regulatory problems exist.
- Examples of fintech applications include robo-advisors, payment apps, peer-to-peer (P2P) lending apps, investment apps, and crypto apps, among others.

Fintech companies can include start-ups and established financial and technology firms.

Such as:-

- Store customer money in a bank account
- Provide additional services and value to clients
- Create and refine systems for completing transactions, storing data, and interacting with customers
- Focus on customer requirements to improve and automate the delivery of financial services.
- Some examples of fintech include: mobile banking, online lending platforms, digital payment systems, robo-advisors, and blockchain based applications such as cryptocurrencies.

Potential benefits of Fintech

- **Speed and convenience**
Fintech products tend to be delivered online and so are easier and quicker for consumers to access.
- **Greater choice**
Consumers benefit from a greater choice of products and services because they can be bought remotely, regardless of location.
- **Cheaper deals**
Fintech companies may not need to invest money in a physical infrastructure like a branch network so may be able to offer cheaper deals to consumers.
- **More personalised products**
Technology allows fintech companies to collect and store more information on customers so they may be able to offer consumers more personalised products or services.
- **Potential risks under Fintech**
- **Unclear rights**

Fintech companies may be new to the financial industry and use different business models to traditional providers. This can make it harder to ascertain which ones are regulated, and what your rights are if something goes wrong.

- **Making a rash decision**

Financial products that are bought instantly online without ever meeting anyone face-to-face may make it easier for consumers to make quick, uninformed decisions.

- **Technology-based risks**

Financial products bought online may leave you more exposed to technology-based risks. For example, your personal data could be mis-used or you could fall victim to cybercrime.

- **Financial exclusion**

While technology increases choice and access for most consumers, it can exclude those who don't know how to use the internet or devices like computers, smartphones and tablets.

Examples of fintech?

Fintech is changing the world of finance for consumers in a myriad of ways. For example, you can now open a bank account over the internet, without physically visiting a bank. You can link the account to your smartphone and use it to monitor your transactions. You can even turn your smartphone into a “digital wallet” and use it to pay for things using money in your account.

Fintech is also rapidly changing the insurance and investment industries. Car insurance providers now sell “telematics-based” insurance where your driving is monitored using data collected via your smartphone or a “black box” fitted in your car. This data can then be used to determine how much you pay for your insurance policy. In the future, it may be possible to buy insurance on a short-term or “pay as you go” basis.

Advances in technology means consumers can also invest over the internet on an “execution only” basis without any face-to-face interaction. In time, you may be able to get automated financial advice or “robo advice” with little or no human interaction.

Fintech has been applied to many areas of finance. Here are just a few examples.

- **Robo-advisors** are apps or online platforms that optimally invest your money automatically, often for little cost, and are accessible to ordinary individuals.
- **Investment apps** like Robinhood make it easy to buy and sell stocks, exchange-traded funds (ETFs), and cryptocurrency from your mobile device, often with little or no commission.
- **Payment apps** like PayPal, Venmo, Block (Square), Zelle, and Cash App make it easy to pay individuals or businesses online and in an instant.
- **Personal finance apps** such as Mint, YNAB, and Quicken Simplifi let you see all of your finances in one place, set budgets, pay bills, and so on.
- **Peer-to-peer (P2P) lending** platforms like Prosper Marketplace, LendingClub, and Upstart allow individuals and small business owners to receive loans from an array of individuals who contribute microloans directly to them.
- **Crypto apps**, including wallets, exchanges, and payment applications, allow you to hold and transact in cryptocurrencies and digital tokens like Bitcoin and non-fungible tokens (NFTs).

- **Insurtech** is the application of technology specifically to the insurance space. One example would be the use of devices that monitor your driving in order to adjust auto insurance rates.

How do fintech companies make money?

Fintech make money in different ways depending on their specialty. Banking fintech, for example, may generate revenue from fees, loan interest, and selling financial products. Investment apps may charge brokerage fees, utilize payment for order flow (PFOF), or collect a percentage of assets under management (AUM). Payment apps may earn interest on cash amounts and charge for features like earlier withdrawals or credit card use.

Overall, fintech has brought about many changes and advancements in the financial world. Fintech's advantages include easy access, transaction efficiency, and lower costs. Nevertheless, fintech also has disadvantages, such as data security issues, technological dependence, and a lack of consistent regulation.

Various Fintech Users

There are four broad categories of users for fintech:

- Business-to-business (B2B) for banks
- Clients of B2B banks
- Business-to-consumer (B2C) for small businesses
- Consumers

Trends toward mobile banking, increased information, data, more accurate analytics, and decentralization of access will create opportunities for all four groups to interact in unprecedented ways.

As for consumers, the younger you are, the more likely it will be that you are aware of and can accurately describe what fintech is. Consumer-oriented fintech is mostly targeted toward Gen Z and millennials, given the huge size and rising earning potential of these generations.

When it comes to businesses, before the adoption of fintech, a business owner or start-up would have gone to a bank to secure financing or start-up capital. If they intended to accept credit card payments, they would have to establish a relationship with a credit provider and even install infrastructure, such as a landline-connected card reader. Now, with mobile technology, those hurdles are a thing of the past.

Regulation and Fintech

Financial services are among the most heavily regulated sectors in the world. As such, regulation has emerged as the number one concern among governments as fintech companies take off.

While fintech firms create new opportunities and capabilities for companies and consumers, they are also creating new risks to be aware of. “Data privacy and regulatory arbitrage” are the main concerns. Regulation is also a problem in the emerging world of crypto-currencies. Initial coin offerings (ICOs) are a form of fund-raising that allows start-ups to raise capital directly from lay investors. In most countries, they are unregulated and have become fertile ground for scams and frauds. Regulatory uncertainty for ICOs has also allowed entrepreneurs to slip security tokens disguised as utility tokens past the U.S. Securities and Exchange Commission (SEC) to avoid fees and compliance costs.

Because of the diversity of offerings in fintech and the disparate industries it touches, it is difficult to formulate a single and comprehensive approach to these problems. For the most

part, governments have used existing regulations and, in some cases, customized them to regulate fintech.

SWOT Analysis:-

Strengths

- The advantages of Fintech are manifold. By making the interaction between consumers and financial services as well as between financial service providers easier and simpler, Fintech offers significant potential to enhance efficiencies, reduce costs, modernise financial infrastructure, enable more effective risk management and expand access to financial services across a range of different areas including lending, payments, personal finance, money transfer, and insurance.

Weaknesses

- The privacy of personal information provided by consumers online is under the spotlight these days. The recent data breach at Facebook is a case in point. This issue is particularly relevant for the Fintech sector as is the risk of fraud or financial risks associated with consumers not fully understanding the new financial products.

Opportunities

- The ‘de-risking’ phenomenon has become an existential threat to many small states in the Commonwealth, especially in the Caribbean and the Pacific. Fintech could potentially offer solutions to some of the key drivers of de-risking such as ‘Know Your Customer’ policy, or eliminate the need for corresponding banking relationships altogether.
- The declining cost of internet services and growing mobile and smartphone penetration in small and developing countries also provide an excellent opportunity to leverage Fintech to promote financial inclusion amongst the estimated two billion people who remain without access to formal financial services. Kenya’s M-Pesa is one commonly cited example.
- While many Central Banks are actively promoting Fintech through ‘sandbox’ approaches, the existing regulatory barriers are helping banks to maintain the status quo. The Fintech and the traditional banking sector, however, need not always compete but can also complement and learn from each other, forging new partnerships for the efficient delivery of financial services.

Threats

- Cybercrime can potentially undermine the integrity of the entire financial system. This is perhaps the main reason why some Central Banks are reluctant to embrace Fintech more broadly. In the Commonwealth, many small and developing countries lack the capacity and infrastructure to safeguard cybersecurity. There are also concerns that many Fintech start-ups are too focussed on launching their product quickly, without paying due attention to security measures.
- Then, there is a potential abuse of Fintech. Without proper regulation, easy access to finance can encourage risky behaviours like excessive borrowing and high personal debt accumulation. There is also some legitimate concern about market competition. A few early entrants in the market can get too large too soon and can wield considerable monopolistic power. On the other hand, too many entrants providing

similar services can also crowd the market and make supervision more difficult. This is especially true for many small and developing countries where the rise of the sector can stretch already limited regulatory and supervisory capacity.

- The wide range of technologies and their possible use under the Fintech umbrella means that all countries can benefit from the technological innovations in financial services in a way that suit their needs. This can lead to more sustainable growth by enhancing productivity and creating new markets and jobs.
- The main challenge is striking the right balance between regulation and promotion of this rising sector. What is your take on it? What role, if any, can we at the Commonwealth Secretariat play to help our member countries realise the full potential of Fintech?

➤ **Key Takeaways**

- Fintech refers to the integration of technology into offerings by financial services companies to improve their use and delivery to consumers.
- It primarily works by unbundling offerings by such firms and creating new markets for them.
- Companies in the finance industry that use fintech have expanded financial inclusion and use technology to cut down on operational costs.
- Fintech funding is on the rise, but regulatory problems exist.
- Examples of fintech applications include robo-advisors, payment apps, peer-to-peer (P2P) lending apps, investment apps, and crypto apps, among others.

➤ **CONCLUSION**

The fintech are changing the traditional financial sector, both at the level of individuals and companies. These companies are growing exponentially and have decided to compete with traditional banking to avoid financial monopoly.

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**AN ANALYTICAL STUDY OF THE E - COMMERCE AND ITS CONTRIBUTION
IN HOTEL INDUSTRIES.**

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➤ **ABSTRACT :**

E-Commerce has completely changed the way we do business around the world. However, traditional offline businesses still hold a significant share in the major economies. Recently, e-commerce companies have experienced remarkable growth, driven by government regulations, health concerns, and advancements in technology. This paper explores the latest trends in the e-commerce hotel industry in India, examining both the positive and negative impacts on e-commerce activities. It also highlights the opportunities seized by e-commerce players, the challenges they face, and how these factors affect consumers and the overall business landscape. Furthermore, the paper provides a critical analysis of the Indian e-commerce industry before and after the COVID-19 pandemic, looking at various parameters. It discusses how businesses have adapted their models to meet the new normal and evolving customer expectations. Additionally, this study contributes to the existing literature on e-commerce adoption in Ghana, offering a socially constructed perspective on the factors influencing e-commerce in a developing country context. Strategies for enhancing e-commerce development in businesses are presented, along with the managerial implications of the research findings, emphasizing the crucial role of e-commerce in the hotel industry. This research paper specifically focuses on the impact of e-commerce on hotel industries in India.

Keywords : E-Commerce, Hotel Industries, Online, Pune City, Opportunities in Hotel Industries, Sales Revenue.

➤ **INTRODUCTION :**

E-commerce refers to the buying and selling of goods or services through electronic platforms. It's a relatively new concept that has gained traction thanks to the rapid growth of the Internet. This digital revolution has transformed the way we conduct business. E-commerce has evolved beyond just online shopping; it encompasses all sorts of electronic transactions that happen over computer networks and messaging systems. In essence, it's about how traders leverage technology to meet their business objectives. The rise of e-commerce is a remarkable outcome of globalization, allowing people to engage in online transactions across the globe with just a few clicks on their computers or smartphones, available 24/7 for seamless transactions.

Through e-commerce, a global marketplace has opened up for entrepreneurs. This shift has had a positive impact on many businesses, providing them with access to a wider audience. E-commerce has influenced both the financial and non-financial aspects of numerous enterprises. It's particularly prevalent in the restaurant industry, where platforms like Paytm, Google Pay, online reservations, and food delivery services are commonly used. This digital approach has significantly boosted sales for many restaurants. E-commerce isn't just about transactions; it also facilitates the exchange of information, often involving financial data.

In the realm of e-commerce, there are various types of interactions, including business-to-business, business-to-consumer, consumer-to-business, and business-to-government. When it comes to licensing municipal businesses, a wide range of establishments falls under the restaurant category, such as tea shops, beverage houses, sweet shops, snack bars, dining halls, and lodging facilities. For the purpose of this study, the researcher has focused specifically on restaurants that serve food and breakfast, as well as those that specialize solely in breakfast offerings.

➤ **OBJECTIVE OF RESEARCH :**

1. To clarify the concept of E-Commerce.
2. To discuss the impact of E-commerce on the hotel industry.

➤ **REVIEW OF LITERATURE :**

"A Critical Study of Economics and its impact on the hotel industry, particularly in Pune, highlights the importance of reviewing existing literature when exploring this topic. This literature review plays a crucial role in achieving the research objectives. By examining past research, we can ensure our study is thorough and precise. Previous studies serve as a foundation to enhance our own research efforts.

1. Dr. Amar Nath –

“Profitability and sustainability from waste management practices in hotels and its impact on the environment.”

This thesis dives into the hotel industry, focusing on the financial implications of waste management. It aligns closely with my research topic. Essentially, this work explores how hotels can manage their waste effectively to foster sustainable business practices while also turning a profit. The thesis introduces a comprehensive model that integrates profitability and sustainability through waste management. This model aims to minimize waste at its source and find ways to repurpose waste materials, ultimately boosting the overall profitability of the business.

Additionally, the thesis touches on e-commerce and its financial effects on the hotel sector. The hotel industry is encouraged to develop responsible strategies that provide a competitive edge. Achieving business sustainability involves reducing the company's impact on climate change. These strategies can open up new avenues for profit generation within the organization.

Top strategists and marketing professionals in leading hotels must navigate the ever-changing market landscape to ensure their establishments remain competitive and sustainable.

Implementing effective waste management practices is one of the best ways to utilize existing resources without resorting to costly strategies. Therefore, the framework for hotel waste management developed in this study can assist hoteliers in identifying weak points in their sustainability efforts and taking corrective actions right from the start.

2. Dr.Prasanth, S – (2018)

“Tourism development role of hospitality industry a study of select hotels of Andhra Pradesh state”

These studies focused on various dimensions of tourism development in different States of India and abroad and also problems and potentials. Some researchers also carried out studies on Hospitality Industry and its service quality, one of the most important factors for tourism development. 298 Based on the review of earlier research studies, it is observed that there are many researchers carried out studies on problems and prospects of tourism at National level and State level, problems and prospects of hotel industry in India, Service quality in hotel industry, pilgrimage locations tourism, etc.

The pilot study conducted by the researcher Involving the above activities also clearly establishes a dearth for studies on role of Hospitality Industry in Tourism Development, specifically the researcher thus was able to identify the gap for the research to be conducted on ‘Tourism Development – Role of Hospitality Industry: A Study of Select Hotels of Andhra Pradesh State’. This thesis gives information about the contribution of the Hotel Industries in the Tourism development it’s related to my research Paper.

3. Nan Hau, CristinMarosan, Agnes DeFranco – (2015)

“The other side of technology adoption: Examining the relationships between e-commerce expenses and hotel performance”

As information technology (IT) increasingly permeates all aspects of the contemporary society, hotels have spent millions of dollars to deploy electronic (e-commerce) tools and develop appropriate strategies to attract and retain guests. Yet, while the literature reflects the drivers of adopting certain e-commerce tools, it does not provide a conclusive answer regarding the effectiveness of e-commerce expenditures. Specifically, it is unclear whether such expenditures affect performance in terms of revenue and gross operating profit, or whether such effects are consistent over time and across different chain scales. Based on financial data reported by a sample of 275 hotels from 2007 through 2012, this study found that e-commerce expenses significantly and positively impacted rooms revenue for all sample years, except in 2007. When subgroup analyses were performed by chain scale, it was found that e-commerce expenses significantly contributed to the gross operating profit for midscale and upscale hotels but not for the luxury, upper upscale, and the upper midscale categories. This journal related to e-commerce and it is part of my research paper.

4. Dr. Tyagi Vaktar - (2019)

The research paper asserts that hotels play a very important role in the service sector. Food, accommodation and other recreational services are provided. Cleaning staff plays a very important role in making the hotel business more profitable. If good quality service

facilities are provided to the customers coming to the hotel, the reputation of the hotel can increase. Cleaning is considered to be a very important tool in a hotel business. Work in hotel business.

5. Santasi Das- (2019)

In the above research articles, the researcher found that online food delivery does not take proper care of the customer's food. Therefore, proper services cannot be provided to the customers. Restaurants need to tie up with third parties for online food distribution chain to be efficient. How online apps help for efficient use of online food distribution chain is helpful for restaurants to increase efficiency. This thought has been given by the researcher in the research article.

➤ RESEARCH METHODOLOGY :

This paper is based on secondary data, which was gathered from a variety of sources including published books, journals, research papers, magazines, daily newspapers, the internet, and official statistical documents. The study takes a qualitative approach.

E-Commerce and its contribution in the Hotel Industries :

1) Boosting transactions

The rise of e-commerce has opened up new avenues for businesses to carry out transactions. It has significantly expanded the global marketplace for entrepreneurs. Thanks to e-commerce, sellers can showcase their products to a worldwide audience. This digital approach is incredibly beneficial for many business owners, as it not only increases transaction volume but also makes the whole process more convenient.

2) Lowering product prices

Shopping online has revolutionized how we buy goods and services, making it more affordable and efficient compared to traditional shopping methods. With the power of the Internet, consumers can easily research and find manufacturers for various products, which often leads to lower prices due to reduced costs in commissions, advertising, and more.

3) Enhanced return on investment

In today's competitive global market, businesses are constantly looking for ways to cut down on investment costs while still delivering high-quality products at fair prices. E-commerce minimizes the reliance on human labour, which can lead to fewer errors and ultimately a better return on investment.

4) Providing information to customers becomes easier.

Making it easier to share information with customers is a game changer. Now, customers can handle business transactions whenever they want, and they can easily find the information they need online. Thanks to e-commerce, accessing desired information has never been simpler. It streamlines the process of getting the products they want.

5) A Global View of E-Commerce.

With e-commerce technology, we can share details about our products and services far and wide. We can ship goods to other countries through various partners. E-commerce ensures that the information customers seek is readily available, which not only attracts more

customers but also boosts business revenue. If a business aims to reach a global audience, having a broad perspective on e-commerce is essential.

6) Boosting Revenue.

E-commerce has transformed how we order food. Customers no longer need to visit a restaurant in person; they can simply place their orders online. Services like Zomato, Swiggy, Blingee, and Uber Eats deliver food right to their doorstep. This convenience has led to a surge in demand for online food ordering, significantly increasing profits for restaurant owners.

7) Expansion of markets

In the past, the expansion of markets was limited. Due to global globalization, the whole world has become a market. Manufacturers can sell their products in the international market. The products and services produced should be marketed in various modern ways. This has resulted in an increase in industry sales.

8) Employment Opportunities

The current situation of the food distribution chain has been studied. Many entrepreneurs have entered the food distribution business. Because this business requires minimum education, minimum skills and minimum capital. Food distribution has provided employment opportunities to many entrepreneurs.

9) Increase in reputation

When it comes to hotels, food, accommodation, and entertainment services are all part of the package. The cleaning staff play a crucial role in boosting profits for the hotel industry. If guests receive top-notch service and facilities, the hotel's reputation can really soar. Cleaning is a vital aspect of running a successful hotel. Efficient cleaning not only keeps things tidy but also positively influences the overall business. Happy customers who enjoy great service are more likely to be satisfied, which ultimately contributes to the growth and expansion of the hotel.

10) Innovation and Opportunities

More information about developing new ideas in the restaurant and the working methods implemented by the online distribution chain (Zomato, Swiggy) has been provided. Objective: The restaurant tries to keep the customers as satisfied as possible by providing online facilities. Consumers are increasingly attracted to the demand for online food delivery. Accordingly, food delivery in India is booming as a result of urbanization.

➤ CONCLUSION :

Analysing the secondary research shows that there's a significant opportunity for e-commerce growth in countries like India. It brings numerous benefits for both businesses and customers, such as lower costs, discounts, a broader selection, and increased demand. However, a major hurdle for e-commerce development in India is the inadequate infrastructure and the literacy rate. On a positive note, research indicates a steady rise in the

number of people using smartphones and gaining internet access, which is positively influencing business organizations.

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THE ECONOMIC AND POLICY IMPLICATIONS OF BANGALORE’S WATER CRISIS : INDUSTRIAL IMPACT, URBAN DEVELOPMENT, AND SUSTAINABILITY

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➤ ABSTRACT :

Bangalore, India's leading technology and industrial hub, is facing an escalating water scarcity crisis that threatens its economic stability, urban development, and business continuity. The city's rapid population growth, unregulated urban expansion, and inadequate water management have exacerbated the depletion of ground water reserves and surface water sources, pushing industries and households into severe distress. This paper examines the economic ramifications of Bangalore’s water crisis, with a specific focus on the garment manufacturing sector, one of the hardest - hit industries. It explores the broader impact on business operations, migration patterns, and real estate development, highlighting how water shortages are reshaping the urban economy. The study also evaluates responses from industries, households, and policymakers, including emergency measures, conservation strategies, and regulatory interventions. Furthermore, it provides policy recommendations aimed at improving Bangalore’s water governance, augmenting supply through infrastructure projects, strengthening demand- side conservation, and integrating sustainable urban planning. The findings underscore the urgent need for proactive, long-term water management strategies to safeguard Bangalore’s economic future and resilience against recurring crises.

Key Words : Water scarcity, Bangalore (BLR), urban economy, policy economics, garment industry, industrial impact, business resilience, migration, urban development, Bangalore Water Supply and Sewerage Board (BWSSB), Cauvery Water Supply Scheme (CWSS), water governance, sustainable water management, groundwater depletion, wastewater recycling, water pricing, economic sustainability.

➤ INTRODUCTION

Bangalore (Bengaluru), India’s tech hub, is grappling with a severe urban water scarcity crisis that threatens its economy and liveability. A combination of explosive population growth, rapid urbanization, and inadequate water infrastructure has stretched the city’s water supply to a breaking point (Banerjee, 2024). The metropolitan population has roughly tripled since 1990, while traditional water sources like lakes and groundwater aquifers have been over – exploited or lost to development (Banerjee,2024). In early 2024 the city faced one of its worst droughts in decades, with poor monsoon rainfall and an unusually hot dry season leaving reservoirs and borewells depleted (Chandini Monnappa et al.,2024) (AP,2024). Officials and experts warn that without urgent action, Bangalore could face a “Day Zero” scenario akin to Cape Town’s 2018 water crisis (AP, 2024) – a situation in which taps run dry for millions of residents. This article examine show water scarcity is impacting Bangalore’s urban economy, focusing on a major industry hit hardest by water shortages, and analyses the broader implications for business operations, migration, and urban development. It also discusses how different stakeholders – industries, households, and policymakers – are

responding to the crisis, and offers policy recommendations to mitigate water scarcity in the city.

Economic Impact and Affected Industries

Garment and Manufacturing Sector Hit Hard

One of the major industries most severely affected by Bangalore’s water shortages is its garment manufacturing sector, part of a broader textile / apparel industry. Bangalore is a hub for garment factories and textile processing units, many clustered in industrial estates like Peenya. These industries are highly water-dependent (for processes like dyeing, washing, and ironing), and the ongoing scarcity has started to slow or halt production. In early 2024, industrial representatives reported that garment factories were struggling to operate at normal capacity due to inadequate water supply (Chandini Monnappa et al., 2024). Anurag Singhla, president of the South India Garment Association, noted that manufacturers “ cannot afford to stall production ” but work had nonetheless “ slowed down ” as companies scrambled to secure enough water (Chandini Monnappa et al., 2024).

At Peenya – one of Asia’s largest industrial areas with over 16,000 business units – the situation became dire for thousands of small and medium manufacturers. “Many from the hosiery or garment sector need water for processing. You need water for workers as well as other needs,” explained H.M.Arif, president of the Peenya Industries Association (Shinde, 2024). Without reliable water, factories face an impending blow to production, as even basic needs like drinking water and sanitation for workers are at risk (Shinde, 2024). Some textile and apparel units began buying water from private tankers at steep costs to keep their operations running, but this significantly raises production costs (Shinde,2024). Industrialists warned that if the crisis persists, higher operating costs and interrupted production could render many small factories unviable, leading to shutdowns (Chandini Monnappa et al., 2024). Similar concerns were echoed for other water-intensive manufacturing segments in the city – local reports identified textile processing, chemical, paper, and packaging industries among the worst hit by the water shortage, all of which rely heavily on water in their production lines (Ramesh, 2024). In summary, Bangalore’s manufacturing base – especially the garment sector – has been hit hard by water scarcity, without put reductions, rising costs, and threats of plant closures that could ripple through the local supply chain.

Broader Business Operations and Services

Beyond manufacturing, the water crisis is disrupting daily business operations across sectors in Bangalore’s economy. Service industries, corporate offices, and small businesses alike have had to adapt to unreliable water supply. For instance, restaurants in the city have seen their water bills double, as they resort to purchasing expensive tanker water to meet kitchen and hygiene needs (Chandini Monnappa et al.,2024).Some restaurants even switched to disposable plates and cutlery to reduce dish washing and put up notices in rest room surging minimal water use (Chandini Monnappa et al.,2024). Such measures, while helping conserve water, add to operating costs and waste management issues. Major tech companies and offices are also feeling the strain : many corporate campuses normally require large volumes of water for their workforce (atech park with 5,000 employees needs roughly 100,000 liters per day – about 10–12 tanker loads (ETOnline,2024). With municipal supplies

faltering, employees in some firms have been skipping meetings or altering work routines to secure water for their homes (Chandini Monnappa et al., 2024), (Banerjee, 2024). One multinational’s manager lamented that team members were “ busy trying to secure water from tankers ” instead of focusing on work, illustrating how the crisis is denting productivity (Banerjee, 2024). In some water-scarce neighbor hoods, people prefer to work from the office simply to access water (for drinking and restrooms) that is unavailable at home (Chandini Monnappa et al., 2024).

Large companies have responded by proactively instituting water-saving technologies and policies in their facilities. For example, Microsoft installed tap aerators to restrict flow and began recycling grey water in its office washrooms to reduce fresh water consumption (Chandini Monnappa et al., 2024). Walmart India had implemented similar conservation measures even before the crisis, and during the shortage it encouraged all its office building landlords to use recycled water for landscaping and other non-potable purposes (Chandini Monnappa et al., 2024). These efforts reflect a growing corporate awareness that efficient water management is now integral to business continuity. Still, not all impacts can be mitigated easily. Many small and medium enterprises (SMEs) without the resources of big firms are anxious about meeting client commitments; an SME in the packaging sector noted that water shortages might force cut backs in production volume even as orders peak at the financial year-end (ET Online, 2024). Rising water costs – tanker prices in some areas surged by 60–70% within weeks (Chandini Monnappa et al., 2024) – are squeezing business margins, especially for cost-sensitive sectors.

If such challenges persist long term, they could erode Bangalore’s status as an attractive business destination. There are already signs of investor wariness: in one poll of property investors, 61% of respondents said the city’s water woes would make them consider alternative locations for investment (Banerjee, 2024). Bangalore’s \$194 – billion IT industry and its startup ecosystem thrive on the city’s talent pool and infrastructure (Banerjee, 2024), but continuous water crises could prompt companies to rethink expansion plans or employees to prefer other cities. In short, the water scarcity is not only a humanitarian and environmental concern, but also a direct economic threat, affecting everything from everyday business operations and costs to the broader confidence in Bangalore’s growth story.

Responses to Water Shortages Industry and Business Responses

Businesses in Bangalore have adopted a range of responses to cope with the water shortages, from emergency measures to longer-term adaptations. In the industrial sector, many companies are prioritizing water conservation and efficiency in their operations. For example, the Whitefield Area Commerce Industries Association noted that its member firms (largely IT and tech companies) deferred all non-essential, water-intensive activities—postponing things like painting, campus construction, and landscaping—to conserve water for critical uses (ETOnline, 2024). Factories and tech parks have installed low-flow fixtures and optimized processes: as mentioned, some offices put aerators on taps and set up on-site grey water recycling for bathrooms (Chandini Monnappa et al., 2024). Numerous large campuses already had sewage treatment plants (STPs) and have ramped up the reuse of treated wastewater for flushing toilets and gardening to cut freshwater demand. Finding alternate water sources is another key strategy. Most companies, big and small, have had to depend on

private water tanker deliveries to meet daily needs when municipal supply falters. This has created a thriving tanker market, albeit at high cost – by Feb 2024, a 12,000-liter tanker load that cost ₹1,200 in January was selling for up to ₹2,000 (Chandini Monnappa et al., 2024). Despite the expense, industries have little choice but to purchase tanker water to avoid downtime. Some have even drilled new borewells or deepened existing ones on their premises, though with nearly half the city’s borewells defunct, this is not a guaranteed solution (kaur, 2024).

Collaboration and advocacy have also been part of the business response. Industry associations are actively engaging with the government, lobby in gforrelief measures and infrastructure support. The Peenya Industries Association, for instance, has been meeting with authorities to find solutions, and pushed for speedier supply of recycled water from city treatment plants to industrial areas (Shinde, 2024). (The government agreed in principle to supply treated wastewater to Peenya for industrial use, but bureaucratic delays in tendering meant this would not materialize before the end of the summer season (Shinde, 2024). Companies are also sharing resources where possible – some multinational firms opened up their office water facilities to employees’ families or nearby communities in emergencies. A noteworthy development is the revival of work- from-home or remote work arrangements as a water-conservation response: in March 2024, many IT employees demanded the option to work remotely, reasoning that if they leave the city (orif offices close to save water) it could reduce strain on Bangalore’s water supply (Sheetal Bhalariao, 2024) (TOI Tech Desk, 2024). While not universally implemented, a few firms did adjust policies to accommodate staff who temporarily relocated due to the water crisis. On the other hand, some employers did the opposite – encouraging staff to come in to the office if their home had now ater, since the office had arranged tankers and could ensure basic amenities (Chandini Monnappaetal., 2024). In sum, industries responded with a mix of conservation tactics, securing alternative supplies, mutual aid, and negotiations with policymakers, all aimed at keeping operations running through the dry spell.

Government and Policy Responses

Policy makers and government agencies in Karnataka have undertaken several actions to manage Bangalore’s water shortages. In the immediate term, the Bangalore Water Supply and Sewerage Board (BWSSB) and city authorities implemented emergency restrictions and regulations aimed at both curbing usage and expanding supply. One of the first orders was a ban on using treated drinking water for non-essential purposes–specifically, residents were prohibited from using municipal water to wash cars, water lawns, or for construction activities (Suresh, 2024). This directive (issued on March 8, 2024) sought to conserve the dwindling treated water for essential household consumption. At the same time, the government moved to rein in the chaotic tanker water market. The state took steps to regulate private water tanker operators, amid reports of rampant price gouging by the so-called “tanker mafia” taking advantage of desperate consumers (Banerjee, 2024), (Chandini Monnappa et al., 2024). All tanker suppliers were ordered to register with the BWSSB, and the price of a standard tanker load was capped (the government fixed it at ₹1,200 for a 12,000-liter tanker, to prevent exploitative hikes) (Chandini Monnappa et al., 2024) (Shinde, 2024). Enforcement of this cap met resistance – some tanker operators went on strike protesting the regulations (Chandini Monnappa et al., 2024) – but the government deployed police and seized unregistered tankers to try and ensure compliance. Additionally, political

leaders announced financial allocations to address the crisis : the Karnataka state government earmarked ₹5.56 billion (~\$67million) for water relief measures in Bangalore (Chandini Monnappa et al., 2024). Part of this funding was directed toward emergency borewell drilling, tanker subsidies, and speeding up ongoing water projects.

Longer - term solutions have also been a focus of policy makers’ response. A critical project in the pipeline is the Cauvery Water Supply Scheme Stage - V, which aims to bring additional water from the Cauvery River to Bangalore. This massive infrastructure project had been underway to increase the city’s piped supply, and during the crisis officials emphasized its urgency. However, it is a complex undertaking that will take time and coordination (the project involves laying new pipes and augmenting treatment capacity to draw more water from a river already stressed by regional demand). Another policy response has been to leverage treated wastewater as an alternative supply. Bangalore generates a large volume of waste water that, if properly treated, can be reused for non- potable needs. Recognizing this, plans were made to supply treated water to industries and construction, reducing their dependence on fresh potable water (ET Online, 2024). The government, for example, is laying a dedicated pipeline to send treated sewage water to the industrial hubs like Peenya—effectively recycling water for factory use so that fresh water can be conserved for drinking. The BWSSB is also upgrading its sewage treatment plants to increase output of usable recycled water. Furthermore, efforts to restore and refill the city’s lakes and groundwater have gained momentum as a policy direction. Environmental authorities have been directed to identify key lakes for rejuvenation (desilting, cleaning, and connecting them to storm water drains) to help capture morer a in in the future (Banerjee, 2024). Officials have also talked of planting trees and increasing green cover to improve rain fall in filtration (AP,2024). Even technology is being deployed : the BWSSB has experimented with using artificial intelligence to detect leaks and manage water flow more efficiently in the distribution network (Banerjee, 2024). By minimizing losses and better monitoring usage, they hope to stretch the existing supply further.

Politically, the crisis has turned into a hot issue, spurring promises and blame-trading. Bangalore’s legislators pressed the need for proactive measures, with one Member of Parliament warning of public protests if swift action was not taken to resolve the drinking water scarcity (ET Online, 2024). This prompted emergency meetings at the state cabinet level to review progress on water projects and to consider importing water from neighbouring districts by rail or tanker trains (an idea used in other Indian cities during extreme droughts). The governmental or e-emphasized enforcement of building by laws requiring rainwater harvesting systems and dual piping in new constructions, acknowledging that poor enforcement contributed to the current situation (Shinde, 2024). In summary, policymakers’ response has been multi-pronged: immediate rationing and regulation, medium-term augmentation through tankers and borewells, and long-term infrastructure investments and policy reforms. While these measures have mitigated some impacts, critics argue they were often reactive and late. The experience of this crisis is likely to shape more resilient water governance going forward, as authorities realize that only a sustained, integrated approach can safeguard Bangalore’s water future.

➤ **POLICY RECOMMENDATIONS :**

To secure Bangalore’s urban water future and prevent recurrent crises, a comprehensive set of policy measures is needed. Below are key recommendations aimed at mitigating water scarcity in Bangalore, addressing both supply and demand side solutions:

- **Augment and Diversify Water Supply :** Accelerate the completion of the Cauvery Stage V water supply project to bring additional river water to the city. Simultaneously, explore new water sources to diversify Bangalore’s supply—for example, harnessing other

nearby rivers through regional agreements, creating upstream reservoirs to capture monsoon runoff, or even investigating desalination or water imports for long-term needs. The city should also expand its use of treated wastewater on a war footing: invest in upgrading sewage treatment plants and building the distribution networks needed to supply recycled water for all non-potable uses (industry, flushing, gardening, etc.) (ET Online, 2024). This will free up more fresh water for drinking purposes. In addition, rejuvenate and protect Bangalore’s lakes as decentralized water sources enforce lake encroachment laws, desilt and deepen lake beds, and connect lakes with storm water can also they can store rainwater and recharge groundwater (Banerjee, 2024) (AP, 2024). Reviving the city’s traditional water bodies and watersheds can provide a buffer during dry periods.

- **Strengthen Demand Management and Conservation :** Implement policies to significantly curb water wastage and reduce per capita use. A priority is to enforce rainwater harvesting (RWH) mandates – ensure every large building and community implements RWH systems to collect rooftop rain and use it or recharge it on-site (Shinde, 2024). This could involve providing subsidies or technical assistance for installations, paired with penalties for non-compliance. Expand the metering of water connections across the city and introduce tiered water pricing, where higher consumption is charged at a progressively higher rate. Such economic incentives will encourage households and businesses to conserve water. Public awareness campaigns are also vital: the government and civic groups should run sustained programs educating citizens on water-saving practices (fixing leaks promptly, using water-efficient fixtures, recycling grey water at home, etc.). Bangalore’s experience shows every drop count, so cultivating a culture of conservation is key.
- **Protect and Regulate Groundwater Resources :** Groundwater has been the unsung lifeline during Bangalore’s growth, but it’s now dangerously overdrawn. The city needs strict groundwater governance. This means mapping aquifers and monitoring extraction, licensing and capping the number of borewells, and discouraging private borewell digging in over-exploited zones. Implement recharge initiatives like neighborhood-scale rainwater percolation pits and restored ponds to replenish aquifers in the wet season. In particularly depleted areas, consider a “groundwater holiday” – a temporary ban on pumping to let water tables recover. By treating groundwater as a regulated common resource (rather than an unlimited private good), the city can avert its complete exhaustion.
- **Infrastructure Upgrades and Smart Water Management :** Modernize the water distribution infrastructure to reduce losses and improve reliability. Currently a significant fraction of Bangalore’s piped water is lost to leakage. Investing in pipeline maintenance and replacement will yield substantial gains. The BWSSB should continue to deploy smart technologies (IoT sensors, AI, automation) to detect leaks or illegal tapping in real time and manage pressure zones efficiently (Banerjee, 2024). Installing smart meters for large consumers can help track usage patterns and identify waste. Additionally, build more decentralized water storage—for example, overhead tanks or cisterns at ward level that can be filled in off-peak hours – to ensure a more continuous supply even when demand spikes. These infrastructure improvements will make the city’s water delivery more resilient to shocks.
- **Emergency Response and Contingency Planning :** Develop a clear drought management plan well in advance of crises. This plan should include predefined water rationing schedules (so that if “Day Zero” looms, the city can equitably allocate water deliveries by area and time slot), contracts for emergency water transport (such as rail tankers from less-affected regions), and stockpiling of water purification supplies for

tankers. Formalize the regulation of water tankers by integrating them into the city’s emergency response network – for instance, maintain a roster of certified tanker operators who can be mobilized at fixed rates when needed, to avoid last-minute chaos (Chandini Monnappa et al., 2024). Community-level contingency measures, like identifying and reviving old wells or setting up public water points, should also be part of this plan. By planning ahead for the worst-case scenarios, Bangalore can respond more smoothly to future droughts without panic.

- **Sustainable Urban Planning and Governance:** Going forward, align Bangalore’s urban development plans with its water resources. Incorporate water availability as a criterion in city expansion – for example, when approving new large housing projects or IT parks, require a comprehensive water impact assessment. If an area is already water-stressed, new developments there must include sustainable water sourcing (such as mandatory recycling plants, dual plumbing, assured external supply) or otherwise be limited. Protecting green spaces and increasing tree cover in the city will aid in groundwater recharge and micro-climate cooling (AP, 2024), so land-use plans should earmark sufficient green belts and stop further loss of catchment areas to real estate. Improve inter-agency coordination: the city’s water board, urban development authority, and environmental agencies should work in tandem – perhaps under a unified Metropolitan Water Management Task Force—to ensure water supply keep pace with growth. Finally, involve citizens and stakeholders in water governance through participatory initiatives (such as “water budgeting” at community levels and transparency in data sharing about supply and demand). Good governance, accountability, and public participation will underpin the success of all the above recommendations.

By pursuing these strategies, Bangalore can begin to close the gap between water demand and supply, build resilience against future droughts, and secure its urban economy against water-related disruptions. In essence, water must be treated as a central priority in Bangalore’s planning and policy. The city’s recent crisis has been a wake-up call: only through sustained conservation efforts, infrastructure investment, and smart management can Bangalore continue to thrive without running dry (AP,2024) (Banerjee, 2024). The lessons learned and the policies implemented now will determine whether India’s “Silicon Valley” can overcome its water woes and ensure a sustainable future for its citizens and industries.

➤ **CONCLUSION :**

Bangalore’s ongoing water crisis is a stark reminder that economic growth and urban expansion must be balanced with sustainable resource management. The city’s garment and manufacturing sectors, along with broader business operations and service industries, have been hit hard by unreliable water supply, escalating costs, and operational disruptions. Beyond business, water shortages are reshaping migration patterns, straining urban development, and exposing governance failures in resource planning.

While industries and households have adopted short-term coping mechanisms such as increased reliance on private tankers and conservation practices—these are unsustainable in the long run. Government policies, including supply augmentation projects like the Cauvery Stage V and wastewater recycling initiatives, offer potential relief but require better enforcement, infrastructural upgrades, and integrated water governance to be effective.

To ensure Bangalore remains an economically viable and liveable city, urgent policy interventions are necessary. These include stronger ground water regulation, smart water management technologies, mandatory rain water harvesting, and tiered water pricing to incentivize conservation. Without decisive action, Bangalore risks losing its economic

competitiveness, workforce, and urban sustainability, making water scarcity not just an environmental challenge but a defining economic and policy issue for the city's future.

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ROLE OF GREEN ACCOUNTING – RISK AND RESILIENCE IN DEVELOPING INDIA

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➤ ABSTRACT

Green Accounting is the path which is followed towards the sustainable future. The support level of income which is achieved without exhausting the natural assets of the nation is through Green Accounting. When the economic damages are considered with respect to the exhaustion of natural resources while determining the income of the nation it is known as Green Accounting. The main purpose of the study is to understand the role played by Green Accounting in the development of the Indian Economy and also its objectives, stages, forms, needs and challenges. Methodology of the paper is based on the secondary sources with respect to the role played by green accounting in developing India. The paper is a conceptual research paper. Preparedness of adopting green accounting is not enough, it must be done also. Knowledge regarding the importance of green accounting is not enough, must be utilised in the working as well. Just the imperativeness of doing is not sufficient, everything must be brought into action as well.

Key Words : Green Accounting, Environmental Accounting, Sustainable Accounting, Indian Economy

➤ INTRODUCTION

Money is not the only factor for calculating income or expenditure of the country. The use of natural resources is another important aspect. In order to surround ourselves with the assets and not the liabilities Green Accounting is essential. When the economic damages are considered with respect to the consumption of natural resources while determining the Income of the nation is known as Green Accounting. It is the support level of income which is achieved without exploiting the natural assets of the nation. India is still in the phase of developing is focusing on various factors out of which one factor is sustainable awareness. Mere adherence to the standards and directives won't suffice the need of the hour. Everyone should be aware of this new concept and voluntarily should put in their part of contribution. Green Accounting which is in a nascent stage in India is a very significant part of Corporate Social Responsibility which helps in knowing the resource utilisation and cost

incurred towards environment. The manufacturing companies add more value to the green accounting as compared to non-manufacturing companies according to the survey conducted in New Delhi. Determination of environmental costs helps us in finding the financial outcome of a firm's operation. The success of this new concept is only possible when everyone is aware about it and it is followed according to the requirements.

In order to spread sustainable awareness more is needed is to have a proper demonstration by maintaining a proper account for the environment as well. A number of steps are taken by various sectors of the country to protect and promote the healthy green environment so as to protect the near future and in order to have proper documentation for these steps a new branch of accounting is introduced which is known as Green Accounting. Green Accounting can be replaced by many other terms such as Environmental Accounting or Sustainable Accounting or Resource Accounting or Social Accounting even as Integrated Accounting.

Professor Peter Wood is the one who introduced the term Environmental Accounting in 1980s. Green Accounting or Environmental Accounting deals with maintaining accounting records for the well-being of the environment. It is totally a new aspect of the accounts still its growing due to its importance as recognised as relevant.

Why Green is a buzzword?

In 2010, a report on environment claims made in the North American market and the researchers expressed that green is a difficult word (Defining Green Products 2010). The complicating matters is the widespread use of terms such as natural, organic, planet-friendly, earth-friendly, ecological, non-toxic, biodegradable, plant-based, chlorine-free and 100% compostable, which consumers erroneously assume as synonymous with green (Terra Choice 2009). It is no wonder that every company has a green story. "Green" is a buzzword in green accounting because it symbolizes the environmental focus of this accounting practice, signifying the intention to incorporate the costs and impacts of environmental factors into traditional financial reporting, essentially "greening" the accounting process by considering the sustainability and ecological aspects of business activities. The development and offering of green products and services positively impact consumer and investor perceptions of a company and it also improve the bottom line of the company (Mahajan 2012a, b).

➤ REVIEW OF LITERATURE

- **Cormier & Irene (2001)**, An Examination of social and environment reporting strategies: - The study dealt with the disclosures relating to the society and environment. It gave a conclusion that the costs and benefits of environmental disclosures does not deal with the relationship relating to social disclosures.

- **Gamini Herath (2005)**, Sustainable development and environmental accounting: The challenge to the Economic and Accounting Profession: - This study tries to use the natural resource accounting instead of the gross domestic product for the welfare of the nation which has various drawbacks. All the difficulties were considered while measuring the environmental damage.

- **Aruna Das et.al (2007)**, Social responsibility in India towards Global compact approach: - The research was based upon the trends of the social responsibility in India and concluded that these Trends are encouraging and also very important/significant in India.

- **N Navya & Yamini Apoorva**, Green Accounting and its role in developing India: - This study concluded that the environmental accounting is helpful in decision making and if India successfully adopts it, It may start growing at a more faster pace. Also the government need to make amendments in this aspect and check that all these are being also complied with.

➤ **OBJECTIVES :**

The main objective or purpose of the study is to understand the role played by green accounting in the development of the Indian Economy and also its objectives, stages, forms, needs and challenges.

➤ **METHODOLOGY :**

This paper is a conceptual research paper to contemplate the concept of green accounting and also the role it plays in the development of Indian Economy. It aims at collecting data through secondary sources and tries to find out the feasibility of Green Accounting in the present context. The secondary sources include journals, published research papers, articles, magazines etc.

➤ **ANALYSIS**

Green Accounting is the direction followed towards the sustainable future. The structure used by green accounting is “The structure of Environmental Economic Accounting (SEEA)”. The focus of the environmental accounting is to protect the natural resources which are scarce and also prevent the exploitation of environment. India is a developing country and so it has to face a dual problem that is of protecting the environment as well as developing the economy. There is no choice to be made and both are to be considered and to work upon together.

Measurement of Green GDP :-

When from the conventional GDP the environmental cost of that specific financial year is deducted, we reach to GGDP that is the Green Gross Domestic Product or Green GDP. Green GDP helps in the measurement of the climate change and depletion of resources in the monetary terms. The

Equation of calculating Green GDP is: -

$\text{GREEN GDP} = \text{GDP} - \text{TOTAL STOCK OF THE EARTH'S RESOURCES}$

Objectives of Green Accounting :

The main objectives of green accounting are to integrate environmental concerns into business and economic decision-making, assess the true costs and benefits of economic activities, and promote sustainable development by accounting for environmental impacts and resource depletion.

The key objectives are:-

- **Integrating Environmental Costs and Benefits:**

Green accounting aims to incorporate environmental costs and benefits into national accounts and business decision-making processes, providing a more holistic view of economic activities.

- **Promoting Sustainable Development:**

By accounting for environmental impacts, green accounting supports the transition towards a sustainable economy that balances economic growth with environmental protection.

- **Encouraging Resource Efficiency:**

Green accounting helps businesses identify areas where they can improve resource efficiency and reduce waste, leading to cost savings and environmental benefits.

- **Assessing Environmental Performance:**

Green accounting provides tools to assess and track the environmental performance of businesses and organizations, enabling them to identify areas for improvement and track progress towards sustainability goals.

- **Transparency and Accountability:**

Green accounting promotes transparency and accountability in the use of natural resources and the management of environmental impacts, fostering trust among stakeholders.

- **Facilitating Policy Decisions:**

Green accounting provides valuable information for analyzing policy issues related to environmental protection and sustainable development.

- **Understanding the True Cost of Economic Activities:**

Green accounting helps businesses understand the true cost of their activities by incorporating environmental costs, such as pollution and resource depletion, into their financial statements.

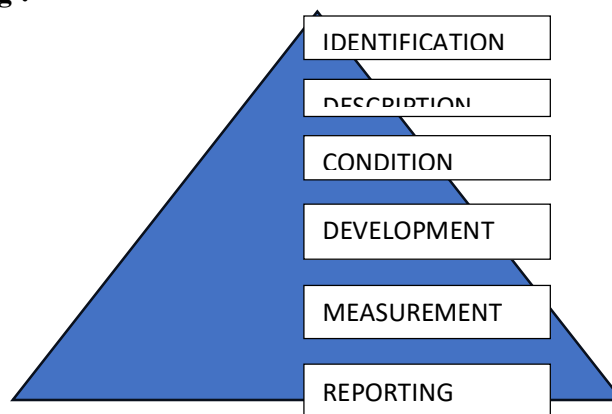
- **Managing Environmental Risks:**

By identifying and quantifying environmental risks, green accounting helps businesses develop strategies to mitigate these risks and reduce potential liabilities.

- **Supporting Green Investments:**

Green accounting can help attract private investments to build and sustain green infrastructure and promote green industries.

Stages of Green Accounting :-



- **Identification:** This is the first step in the accounting process to identify the policies, cost, benefits, liabilities, targets, disclosures relating to the environment.

- **Description:** The next step is to describe the factors identified so as to use them for the measurement of the environmental Performance.

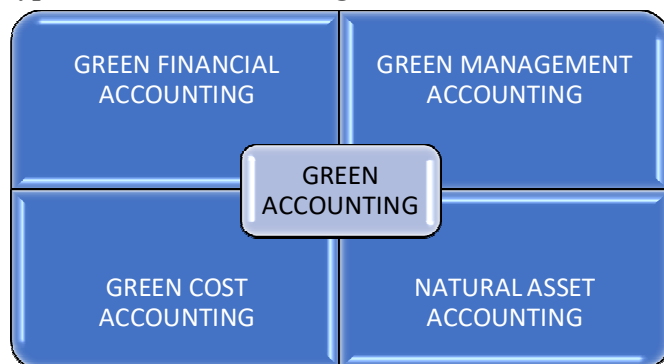
- **Condition:** The next step is to identify the targets with respect to the environment for short term as well as long term.

- **Development:** Development of indicators is an important step wherein these indicators represent the environmental performance.

- **Measurement:** In this step the measurement of actual performance is done and comparison is made with the standard performance.

- **Reporting:** Finally the report is generated based on the result so as to know what further can be done.

Types of Green Accounting :-



- **Green Financial Accounting:** This accounting focuses upon the environmental aspect in the end of the year through the financial statements.
- **Green Management Accounting:** This Accounting involves the management of the Environmental as well as economic performance. It involves all types of planning with respect to the environmental management.
- **Green Cost Accounting:** This Accounting deals with the evaluation of the overall environmental cost. It involves the total social costs as well as private costs.
- **Natural Asset Accounting:** It is used while computing National Income with the inclusion of all environmental aspects which is termed as Environmental Gross National Income.

Needs of Green Accounting:-

- Environmental costs of a business unit may be significantly used, if not removed.
- In its absence some of the environmental costs may remain untouched, hidden, or underestimated.
- Only after having a sound green accounting system the possibility of generating any green revenue can be explored.
- It may lead to better environmental performance which is a significant factor for both the success of the business and the human health.
- It may perform better in product costing, product pricing, and also for developing environmentally desired processes.
- It may help achieve customers, loyalty since the customers always prefer environment friendly products and services.
- It provides macro-economic indicators for sustainability such as changes in total wealth or adjusted net savings that are complementary to GDP.
- It may provide a strong support in developing an overall environmental management system everything into quantitative terms becomes life comparison between firms or countries

CONCLUSION :-

- Green Accounting is a special chance with which India can stay ahead of British Heritage in order to create a new India which will not be a developing but a developed country.
- Green Accounting arouse because it's not just a benefit or revenue which we get by the natural resources but somewhere someone pays for the environment also thus creating a dual aspect.
- India needs to make a choice between protecting our environment or just let it be destroyed and not a choice between protecting our environment or our economy as the environmental protection will gradually lead to the development of our country.
- Willingness of adopting Green Accounting is not enough, it must be done. Knowledge regarding the importance of Green Accounting is not enough, it must be applied in the working as well.
- Just the urgency of doing is not sufficient everything must be brought into action as well.
- Accounting is the language of business and green accounting is language of environment and then the business.
- Green Accounting covers the environment information but also the economic information. Incorporation of green accounting at National level would lead to the development of the Indian Economy.

Challenges and Way Ahead:-

- It is a Long-term process and so reaching the conclusion is a difficult task.
- Green Accounting is really good but theoretically only, practically it requires major actions.
- Not all resources can be covered under this as conversion of everything into quantitative terms becomes difficult.
- Green Accounting does not have a standard accounting method so the comparison between firms or countries requires major actions.
- Social value given to green goods and services are changing so fast that the approximation are not more likely to be in use before they are available for use.
- Green Accounting is not a legal obligation except for few industries in India.

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BUILDING BLOCKS OF A THRIVING STARTUP ECOSYSTEM : A DEEP DIVE INTO CRITICAL FACTORS.

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➤ ABSTRACT :

An incipency ecosystem is a complex and ever-evolving network of individuals, associations, and businesses that produce a terrain conducive to launching and growing successful startups. When the Startup India Initiative 2016 wasn't launched, startups faced numerous walls related to attestation, but with that launch, there was a sharp increase in the number of Startups. Incipency ecosystems are fleetly getting a vital element of the ultramodern frugality. Whether you are an entrepreneur looking to launch a new business or an investor looking to invest in one, understanding the crucial rudiments and strategies for structure and managing a thriving incipency ecosystem is essential. To make the ecosystem for startups vibrant, factors of the ecosystem need to be bettered like structure, nonsupervisory frame, backing and finance, specialized labor force, instructors, counsels, and original and global requests. Global incipency capitals similar to Silicon Valley, Bangalore, and Tel Aviv illustrate thriving ecosystems that have successfully nurtured high-growth startups for decades together. By promoting collaboration and investment in entrepreneurship, incipency ecosystems play a pivotal part in job creation, technological advancement, and profitable development. It encompasses a thorough analysis of colorful rudiments from investment trends to the places of stakeholders like startups, co-working spaces, accelerators, and the overall business terrain.

Keywords : Entrepreneurship, Startups, Ecosystem, Government programs, Collaboration, Innovation, Networking, Stakeholders.

➤ INTRODUCTION :

Entrepreneurs are set up to good inventions, speed up structural changes in frugality, introduce new competition, and contribute to productivity, job creation, and public competitiveness. Innovation has been honored as a critical factor in profitable growth. Partnership successful. It's a matter of great pride that India is ranked 68th out of 137 countries according to the Global Entrepreneurship Development Institute, this appears nothing but moderate if we consider the performance. As per the Startup Outlook report 2019 (Feb), two factors make India charming as an incipient nation thereby contributing to the consummation of a developed and inclusive India by 2047. First, is the cost of doing business which is low because of the propinquity between guests and merchandisers? Alternate is the mammoth size of the domestic request along with the huge base of internet druggies. This study intends to probe the complex aspects of invention, profitable growth, and job creation through the lens of new businesses and technological advancements, with the country on the verge of transformative growth. The paper aims to give a thorough overview and strategic recommendations for fostering an ecosystem that not only thrives domestically but also asserts India's elevation on the global invention stage.

➤ **SIGNIFICANCE OF THE STUDY :**

By offering substantiation-grounded perceptivity into India's entrepreneurship and start-up ecosystem, the study seeks to inform policy opinions. It'll help lawmakers in creating sensible programs that encourage invention and entrepreneurship, performing in increased profitable growth and the creation of jobs. Viksit Bharat@ 2047 will profit greatly from the exploration's identification of stylish practices, success factors, and pivotal interventions, which will also support a thriving entrepreneurial ecosystem. Since the golden period of startups began in the country, the government has introduced several crucial enterprises that have supported startups in the country. The rapid-fire pace of technological advancements fosters a culture of nonstop invention, with tools like artificial intelligence, machine literacy, stoked reality, and the Internet of Effects (IoT) enabling entrepreneurs to produce new results. Blockchain technology enables secure, transparent, and effective deals, opening up openings in fintech and force chain operations.

➤ **OBJECTIVE OF THE STUDY :**

1. To study the Ecosystem of Startup in India and changes that passed over a period.
2. To study how technology-grounded startups get affected by the programs
3. To study the impact that government programs have in boosting entrepreneurship

➤ **RESEARCH METHODOLOGY :**

This exploration paper is substantially grounded on the secondary data. These data are collected from various websites, journals, and review papers. The study is explicatory and abstract.

➤ **GROWTH AND PROSPECTS OF START-UPS IN INDIA :**

It's to be noted that every time more than 800 technology startups are being set up in India. It's applaudable to note that India is amongst the top five countries in the world in terms of startups with 10,000 led by the US with 83,000 comprising 43 tech-grounded enterprises with 9 managed by women entrepreneurs. India is growing incontrovertibly, and so is the incipency script in India. The government of India has declared the period from 2010- 2020 as the decade of invention. Over the once many times, a lot of new and encouraging incipency stories have garnered important- justified attention. Department of Industrial Policy and Promotion (DIPP) is leading the action and is anticipated to start working nearly with banks to protest- and start the government's launch- Up India action in both pastoral and civic India.

Some of the crucial enterprises that have fuelled startups:

- 1) **SETU Fund** The setting up of the SETU (Self-Employment and Talent Application) fund has been monstrosly eaten by the incipency community. Under this fund, the government will be launching an incubation center to produce openings for tone- employment and new jobs, particularly in technology-driven areas. The center has allocated Rs 1000 crore for this purpose.
- 2) **e-biz portal:** To bobble entrepreneurship and to make it easy to start your business, Budget 2015 has pitched for the wide operation of the lately launched gate. The portal

integrates 14 nonsupervisory warrants at one source. Wide use of this gate is anticipated to help enable brisk concurrences for setting up businesses.

3) **MUDRA Bank**: Several entrepreneurs in the MSME sector have frequently complained about lack of or difficulty in getting finances to run their business. Frequently, while applying for loans, these companies are asked for large collaterals by the banks, which makes their business unsustainable. The 2015 Budget addressed this problem by setting up the Microfinance Unit Development Refinance(MUDRA) bank.

4) **Atal Innovation Mission(AIM)**: During the Budget 2015, Mr Arun Jaitley launched the Atal Innovation Fund(AIM). AIM will be an invention-creation platform involving academics, entrepreneurs, and experimenters.

The crucial sectors in the Startup Ecosystem are-

- **E-COMMERCE**- shows a CAGR of 27 between 2019- 2024. Popular startups in this sector are Flipkart, Nykaa, Snapdeal, etc.
- **HEALTH- TECH**- growth rate 39. Popular startups in this sector are Pharmeasy, CureFit, Mfine, etc.
- **FIN- TECH** shows implicit to reach\$ 106 billion approx. 42 by 2025. Popular startups then are PayTm, PolicyBazaar, PhonePe, etc.
- **ED- TECH** eventuality to reach 30 billion around 34 in the coming 10 times. Popular startups in this field are Unacademy, Physics Wallah, Byju's, Vedantu, etc.
- **LOGISTICS**- having the eventuality to grow by 10.4 from 2020- 2024. Startups in this area are Delhivery, Blinkit, Ekart, etc.
- **trip- TECH** eventuality to reach 30 billion, around 26 in the coming 10 times. Popular startups in this field are Go-Ibibo, MakeMyTrip, Yatra, OYO, etc.

➤ **REASONS FOR ENCOURAGING STARTUP IN INDIA :**

- **Employment**- It has been historically proved through exemplifications of numerous Western countries that for large-scale employment generation stimulating entrepreneurship and business creation is pivotal. Generally, invention-driven entrepreneurship tends to resolve India's multifarious social problems like high-quality education, affordable health care, clean energy and waste operation, and fiscal addition.
- **Demographic tip**- India is also said to enjoy a demographic tip and it's estimated that by 2020 India will be home to a 112 million working population falling in the age type of 20- 24 times as compared to 94 million workers in China. The frugality is now graced for its coming stage of development with its youthful demographic profile. With an analogous demographic profile as the US had in 1960, the demographic tip is doubtful to accrue to India as a large number of youths in the country lack the education and jobs to deliver this productivity.
- **Micro, Small, and Medium Enterprises** With 3.6 crore establishments dispersed throughout the country employing nearly 8 crore people, Micro Small, and Medium Enterprises(MSME) contribute 37.5 to the country's GDP. Hence, to promote tone-employment as a means of job creation and to encourage entrepreneurship for further job creation, facilitation, creation, development, and improvement in the competitiveness of micro, small, and medium enterprises.
- **Rural Economy**- India is a different popular country with a population of over 1.2 billion people with different races, persuasions, and languages. The creation of new entrepreneurial enterprises employing a large number of jobless youths and provision of the introductory services like health, education, etc is one of the stylish ways to capture

this request. Indian entrepreneurs are at a distinct advantage in comparison to foreign players entering the space and trying the same results.

- **Monetary Gain-** Everyone wants further and further plutocrats. And the stylish way to get it is by having your own business. In the job, one gets a fixed quantum of payment but in own business, one can get financial earnings as per his choice of inventions.
- **Promoting the research innovation system-** High technology as well as knowledge-based service startup companies are very closely connected to knowledge institutions. An appropriate entrepreneurship ecosystem thus promotes the research & development as well as research & innovation approach of knowledge institutions, companies, and connecting institutions as well as contributes to the applicative orientation of research work at universities and research institutions.
- **Bringing new competitive dynamics into the economic system-** Startup companies are the most dynamic economic organizations on the market since they provide additional dynamics and competitiveness to the economic system. This means that the economy stays healthy, vital, and diligent, while individual companies find it harder to fall asleep on their laurels.
- **New jobs and economic growth-** In the long view, startup companies create a large portion of new jobs and contribute to the country's economic growth. Considering that startup companies are based on innovations; the potential of startup companies represents the healthy core of the economy.
- **Innovations-** these are the main driving force behind economic development and the increase of productivity in a knowledge-based society. Startup companies are the most suitable form of implementing inventions and consequently the best mechanism for commercializing technological and other novelties. Startup companies accelerate the quick development of new technologies and the location where they operate. Large companies often buy startup companies because of technology that they then integrate into their business and thus keep their competitive advantage. These are the main driving forces behind profitable development and the increase of productivity in a knowledge-grounded society. Incipency companies are the most suitable form of enforcing inventions and accordingly the stylish medium for commercializing technology and other sundries. Incipency companies accelerate the quick development of new technologies and the position where they operate. Large companies frequently buy incipency companies because of technology that they also integrate into their business and therefore keep their competitive advantage. At the same time, they give knowledge as well as spin-off and spinout companies to the incipency terrain, which wouldn't be possible without a well-performing incipency ecosystem. An applicable entrepreneurship ecosystem therefore promotes the exploration & development as well as exploration & invention approach of knowledge institutions, companies, and connecting institutions as well as contributes to the actionable exposure of exploration work at universities and exploration institutions.

➤ **FUTURE DEVELOPMENT OF STARTUPS IN INDIA : OPPORTUNITIES FOR STARTUPS IN INDIA.**

- The Nationally Determined contribution (NDC) target of India aims to reduce the emigration intensity of GDP by 33 to 35 percent by 2030 from the 2005 position, achieve 40 percent accretive electric power installed capacity from non-fossil energy-grounded energy coffers by 2030, and produce a fresh carbon Gomorrah of 2.5 to 3 billion tonnes of CO₂ fellow. To achieve the mitigation pretensions backing of USD

834 billion till 2030 would be needed while adaption needs USD 206 billion in this period (MoEFCC 2015).

- There's a need for a significant position of domestic invention and request development to emplace the technologies needed for achieving India's climate change mitigation targets. Formerly several launch-ups in energy effectiveness, waste operation, organic husbandry, etc. have been honored for their implicit contribution to climate change mitigation and adaption along with addressing other environmental and social issues.
- Particularly for the new and renewable energy technology-related enterprises, there are several schemes offered for illustration the Loan for rooftop solar PV power systems and National Clean Energy Fund Refinance, both of which are headed by the Indian Renewable Energy Development Agency. The former provides a 70- 75 percent design cost loan, while the ultimate is a refinancing instrument for listed marketable banks and fiscal institutions.
- Immense Indian Population The large population of the country offers great openings for startups that are anticipated to convert a large jobless population into a working population.
- Changed Perspective of Working-Class Challenging assignments, good compensation packages, and divagation from traditional career paths attract the talented bones to either establish a new incipency or to work for an incipency. The new entrepreneurs are attracted to work with the startups as they're job creators.
- Innovation and Transformation The talented, innovative, unborn entrepreneurs present big openings to the startups to break multitudinous problems arising in the business. The large diversity of the pool provides satisfying services and optimum products to the nation.
- Big Investment in Startups Foreign and Indian investors with their huge investment in the request give a great occasion for the startups to flourish in the business.
- Environmental Issues Startups frequently fail due to a lack of attention to environmental rudiments, similar to legal issues, trends, limitations in the requests, etc. Whereas the effective entrepreneur is largely concentrated on working in a probative terrain and facilitates the startups.
- The population of the country is a well established actuality that India has an extremely enormous populace which is developing step by step. In addition, the greater part of the Indians have a place with the classification of working class salary gatherings. Subsequently, an enormous customer base gets shaped in the nation. This opens up the open doors for the startup adventures which can concentrate on pulling in gigantic numbers of buyers in India.
- Increasing initiatives by the Government has received different measures and approaches for empowering and building up the new businesses in the nation. For example, the Government has presented the MUDRA Yojna, E – Biz Portal, SETU finance and numerous others for helping startup adventures.
- From FinTech to EdTech, HealthTech to renewable energy, Indian startups are at the forefront of solving real problems with innovative solutions. As the startup ecosystem

matures, it's opening an exciting era of investment opportunities for those looking to be part of India's transformative economic journey.

- Investors globally can participate in the aspirational and entrepreneurial nature of India's growth story, by investing in equity funds. With several success stories being listed on Indian, stock exchanges, an actively managed equity fund, like the India Avenue Equity Fund and the India 2030 fund can provide a compelling financial proposition and a way to engage with India's dynamic, rapidly evolving economy.

➤ **CHALLENGES FOR INDIAN STARTUPS**

1. Profit generation is the most grueling task for startups to induce profit as several startups fail due to a lack of profit. The charges grow with adding operations but the profit remains the same. It affects the fundamentals of business and the innovative strategies of startups. The challenge isn't only limited to generating acceptable capital but to expanding and sustaining the growth contemporaneously.
2. Lack of Access to Structure The threat of failure is increased when the startups are deprived of access to support mechanisms like incubators, wisdom, and technology corridors, and business development centers.
3. Government programs The startups face a big challenge in obtaining several warrants from the government before starting the reality. The regulations about labor laws, intellectual property rights, and disagreement resolution make the task more nocuous for startups. India ranks 116 in ease of doing business for the time in 2021.
4. Financial coffers Improper cash operation and inadequate quantum of plutocrats add to the challenges of Startups. The fiscal conditions increase with the progress in business but limited fiscal coffers increase the issues for the establishment to be erected.
5. Lack of mindfulness in requests The Startup has to make every single thing from scrape for a new product or service as requirements to establish the reality for its invention and oneness in the request. The challenge arises when startups fail due to negligence or lack of attention to the colorful limitations of the request
6. Exceeded client prospects The startups come up with inventions and new products in the request to fulfill the needed client prospects. The challenge is to remain innovative with the process to produce as per rising trends to please the guests.
7. Right platoon Members The biggest challenge is to find and retain the righteous gift for the business to contend with the growing client prospects. Assembling the accurate pool is the major demand to sustain in the request.
8. Tenacity of Authors The author of the incipency needs to be effective in dealing with any kind of lapses and complications with applicable results. The success rate of the new and untried business is minimal and the author needs to be patient, conclusive, and innovative to manage the situation.
9. Growth Decelators The agencies being part of Startups themselves produce the hurdles in the budding stage of startups. The issues arise when these agencies break the growth of startups with the influence of incubators, institutes, and analogous associations trying to control and manage the startups
10. Supporting structure Incubators, technology, period premises, business enhancement installations, etc. are many support mechanisms that have a significant impact on the lifecycle of startups. Lack of access to these support systems will raise the threat of failure.

11. Exceed client prospects Lack of interest or request constraints are the main reasons why startups fail. Because the product is specialized, the terrain for an incipency is frequently more delicate than for an established company. For an ultramodern product, the situation is more grueling because the incipency must make everything from scratch.
12. Tenacity of authors Startup authors must be tough when the going gets tough. The adventure of starting a design is replete with detainments, lapses, and problems lacking acceptable results. The entrepreneur wants to be tenacious, and satisfying, and must no-way give up until results are attained.
13. Regulations: Starting a business necessitates obtaining a few licenses from government agencies. Even though there has been a noticeable change, auditing a corporation is still a risk. Regulations about labor regulations, intellectual property rights, dispute resolution, etc. are stringent in India and require about 30 days to comply with, as opposed to just nine days in OECD countries.
14. Taxation issue: Taxes like octroi, VAT, and excise create issues for marketers at the same time as setting out a commercial enterprise. NASSCOM has batted for the exemption of each direct and oblique tax for all startups in India.
15. Exceeded Customer Expectations: The startups come up with innovations and new products in the market to fulfill the required customer expectations. The challenge is to remain innovative with the process to produce as per emerging trends to please the customers.
16. Right Team Members: The biggest challenge is to find and recruit the virtuous talent for the business to compete with the growing customer expectations. Assembling the accurate workforce is the major requirement to sustain the market.
17. Lack of finance: Most of the new organizations in India come up short on cash while beginning their associations. Notwithstanding the way that there are various decisions for finding a good pace simultaneously there is reliably lack of money while beginning a startup. This is in light of the fact that close by the dynamic improvement of business, there is more prominent essential of record. It is significant for the new organizations to have sufficient record for gaining ground as time goes on.
18. Regulations of the Government: The Indian new businesses at first need to enroll themselves as an organization for which they need to confront numerous Entrepreneurship and Economic Development of India 214 difficulties. This is on the grounds that a specific organization needs to take various consents from the Government so as to start its business.
19. Lack of strategic planning: Numerous agents or business visionaries come up short on the capability of having key mentalities for taking care of their business. They neglect to execute a decent arranging methodology so as to develop and build up their business further. Accordingly, numerous startup adventures need to confront disappointment and ruin.
20. Building the right team: According to the survey, The second most important challenge faced by a start-up is to find the right team. Due to this 23 percent of start-ups are shutting down. Investors spend sufficient time to get the right talent at the right time which will lead to the success of the business. So, spend time to obtain the talent who has good communication skills, technical knowledge, good initiation skills and passion to take challenges and adopt them according to the changes in the market

➤ **CRITICAL FACTORS OF STARTUPS IN INDIA**

- The prosecution of a proposed business plan involves managing the factors efficiently at each stage to deliver the needed product or service at the applicable time.
- Query girding the opinions can lead to conduct or quiescence and there are two possible scripts similar as failing to act when action is needed and acting when inactivity is needed.
- A failure is the incapability of an entrepreneur to achieve the asked result. A failure is an event characterized by a steady decline in profit and a steady increase in the cost of an establishment.
- An entrepreneur will have turbulent times in managing this delicate situation. At this stage, marshaling fresh finances through debt or equity will be a major challenge.
- This would call for fresh particular investments leading to posterior family pressure.
- One further option available to the entrepreneur is to initiate an operation change and this may dock his power in the incipency.
- The entrepreneur has an emotional attachment to the incipency and the product they've created and it restricts them to change the operation from the author platoon to a professional operation platoon.
- The entrepreneur blocks the transition from the quality of the idea to the quality of operation, and it's one of the crucial reasons for the value of the establishment going down due to emotional factors.

➤ **Different pitfalls face new startups similar to:**

- The first threat that faces startups is the unknown fixed description, the type of this association and what's the main composition of this association to look for its operation and to arrive at a result if there's a problem
- The startups need to deal with queries in different perspectives request, product, competitiveness, people, and finance.
- Rational application of coffers the main problems that face the startups and beget their failure are using precious tools or retaining professed workers with high stipends, the suitable system is using the applicable tools to reduce the costs in the morning.
- Lack of structured process a major cause of failure in startups is the lack of a structured process to discover and understand their requests, identify their guests, and validate their suppositions in the early stages of design.
- Lack of a fixed plan is the first problem is the appeal of a good plan, a solid strategy, and thorough request exploration. In earlier areas, these effects were pointers of likely success. The inviting temptation is to apply them to startups too, but this doesn't work, because startups operate with too important queries.
- Startups don't yet know who their client is or what their product should be. As the world becomes further uncertain, it gets harder and harder to prognosticate the future. The old operation styles are not over to the task
- Easy access to capital is a pivotal factor that drives entrepreneurship, as finance is the lifeblood of every business. Given the failure of fiscal coffers, icing acceptable force for launch-ups is a significant challenge.
- In the Global Entrepreneurship Examiner (GEM) country report in 2018, 50 entrepreneurs in India declared the lack of fiscal support a major strategic constraint for their businesses. Also, 41 entrepreneurs reported a lack of finances as a chain for business growth.
- Startup India emphasizes building a strong and inclusive entrepreneurial ecosystem. The “about us” section of the Startup India website (Startup India 2016) reads:

Startup India is a flagship initiative of the Government of India, intended to catalyze startup culture and build a strong and inclusive ecosystem for innovation and entrepreneurship in India.

- Roughly 38 entrepreneurs cited fiscal problems as the crucial reason for dissolving their businesses (GEM 2018). Although the flux of adventure capital finances into the Indian entrepreneurial ecosystem has increased over the once decade, similar finances have been concentrated in many crucial sectors.
- For this case, 80 of the overall backing raised by the Indian launch-up ecosystem in 2019 was concentrated in four sectors -consumer tech, SaaS/ software, fintech, and business-to-business (B2B) commerce and tech.
- This further highlights the difficulty that start-ups in technology and “non-hot” sectors experience in raising finances from adventure capital enterprises.
- Therefore, the initiative fails to address and refuses to acknowledge the biggest hurdles to an inclusive entrepreneurial ecosystem—widespread caste and gender disparities in India. Under-representation of entrepreneurs from SC and ST communities: Rigid caste-based social stratification is inherent to Indian society. Although several attempts have been made to address caste inequalities through legislative and political reforms, caste continues to be a potent force in determining an individual’s socioeconomic interactions.

➤ CONCLUSION

In conclusion, the Startup India initiative, launched in 2016, has shown positive strides in addressing regional entrepreneurial disparities in India through the encouragement of dedicated start-up policies at the state level and the establishment of a central online hub providing e-learning, networking, and mentoring facilities. However, the analysis created under the initiative reveals that only 9% of the corpus of `10,000 crores was disbursed and only 1.1% of all DPIIT-recognised start-ups were funded in four years, indicating the need for startups to build up a scale for easier assessment of their strengths and weaknesses across multiple dimensions of innovativeness in India. Furthermore, the study developed a construct for measuring innovativeness based on statistically significant evidence, contributing to the literature by exploring and validating factors representing innovativeness in start-up firms previously overlooked in the Indian and global context. The discussion also highlighted the strategic approach of entrepreneurs in the tech startup business, exposing the initiatives of the Indian government in sponsoring tech startups and providing valuable insights for managing tech-based businesses toward success. While India's startup ecosystem has shown growth and potential, there are significant challenges that require collaborative efforts from ecosystem actors, governmental authorities, and startups themselves, including policy reforms, improvements in the regulatory framework, investments in education and talent development, and a focus on promoting green startups to achieve sustainable impact. In conclusion, a dedicated Green Startups Programme or Mission is essential to unlock the potential of startups across the country and contribute to India's sustainable development goals.

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EMERGING TRENDS IN GST COMPLIANCE FOR BUSINESSES

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➤ ABSTRACT :

The evolving paradigm of Goods and Services Tax (GST) compliance presents a dual spectrum of complexities and strategic imperatives for businesses operating within an increasingly digitalized regulatory architecture. The integration of artificial intelligence-driven risk analytics, e-invoicing protocols, automated return reconciliation and digital tax remittance mechanisms is fundamentally redefining compliance landscapes. This study undertakes a rigorous examination of these transformative trajectories, centering on pivotal areas such as GST registration, filing of return, refunds, tax payments, e-invoicing frameworks and e-way bill. Through an analytical synthesis of global best practices, the research delineates the imperative role of technological assimilation in fortifying fiscal transparency, mitigating systemic tax evasion and optimizing regulatory adherence. The findings underscore the exigency for enterprises to strategically recalibrate their compliance methodologies in alignment with emerging tax governance dynamics, fostering a robust, transparent and efficiency-driven GST ecosystem.

Keywords: GST compliance, emerging trend, e-invoicing, tax automation, artificial intelligence, global trend, digital payments, tax fraud prevention, tax compliance technology.

➤ INTRODUCTION

The realm of Goods and Services Tax (GST) compliance is experiencing a paradigm shift, driven by accelerated technological advancements, increasingly stringent regulatory frameworks and the evolving complexities of global economic integration. Governments are deploying sophisticated digital tax infrastructures to enhance fiscal transparency, optimize tax collection methodologies, and mitigate the risks associated with tax evasion. Modern enterprises must navigate a highly intricate regulatory environment characterized by the convergence of automation, artificial intelligence, and enhanced inter-agency data interoperability. This research paper provides a critical examination of emergent GST compliance trends, analyzing their broader implications for corporate governance and regulatory policy. In particular, it investigates key areas such as GST registration processes, return filing protocols, refund mechanisms, tax payment, e-invoicing systems and e-way bills, underscoring the transformative role of digital governance in the administration of indirect taxation.

➤ RESEARCH OBJECTIVES

This research seeks to:

- Analyze the current GST compliance landscape and its challenges.
- Examine the role of emerging technologies in enhancing GST compliance.
- Evaluate global best practices in GST compliance and their applicability to India.
- Provide insights into future trends that will shape GST compliance.

➤ RESEARCH METHODOLOGY

This study adopts a mixed-methods approach, incorporating both qualitative and quantitative analyses. The methodology includes:

- **Data Collection:** Sourcing secondary data from governmental reports, GST Council directives, industry white papers, and peer-reviewed academic literature.
- **Survey Analysis:** Conducting structured surveys with business operators, tax practitioners, and regulatory authorities to gauge compliance challenges and technological adaptations.
- **Comparative Policy Analysis:** Benchmarking India's GST compliance framework against international taxation models to extract scalable best practices.
- **Stakeholder Interviews:** Engaging with compliance officers, auditors, and tax consultants to evaluate the real-world implications of digital tax enforcement.
- **Case Study Examination:** Analysing real-world business case studies to assess the impact of GST policy reforms on operational efficiency.

➤ EMERGING TRENDS IN GST COMPLIANCE

The modern GST compliance framework is shaped by the convergence of digitalization, stricter regulations, and increased governmental oversight. E-invoicing, now mandatory for businesses with an annual turnover exceeding Rs 5 crore, enables real-time invoice authentication and reduces tax evasion risks. Automated return filing, Input Tax Credit (ITC) reconciliation via GSTR-2B and AI-driven analytics have significantly improved compliance efficiency. Authorities have intensified scrutiny, particularly on fraudulent ITC claims, invoice discrepancies and non-compliance with e-invoicing mandates, resulting in a surge of tax notices and audits.

Moreover, industry-specific compliance requirements, such as Tax Collected at Source (TCS) for e-commerce, stricter export refund processes and complex place-of-supply rules for services, add to the regulatory challenges. The integration of artificial intelligence, big data analytics, and cross-agency data sharing is strengthening tax governance, while biometric authentication for high-risk taxpayers highlights the shift toward technology-driven enforcement.

To navigate this evolving landscape, businesses must adopt advanced tax technology solutions to enhance compliance resilience and minimize fiscal risks. This paper explores emerging GST compliance trends, covering key areas such as registration, return filing, refunds, tax payments, e-invoicing and e-way bills, while also analyzing global trends in tax compliance.

➤ **REGISTRATION**

The GST registration process has evolved significantly with technological advancements aimed at enhancing security, transparency, and efficiency. Key developments include biometric authentication, Aadhaar-based verification, AI-driven risk assessment and geocoding, all of which contribute to preventing fraudulent registrations and ensuring compliance.

a. Biometric Authentication and Aadhaar-Based Verification

To strengthen identity verification, biometric authentication—incorporating fingerprint and facial recognition—has been integrated into the GST registration process. This measure reduces tax evasion risks associated with fake entities. Additionally, Aadhaar-based verification has become a mandatory requirement, linking business registrations to an individual's digital identity. This enhances accountability and prevents misuse of the system by ensuring that only legitimate businesses are onboarded.

A recent advisory from the GST Network (GSTN) has further streamlined biometric authentication. Earlier, applicants selected for biometric verification had to visit a designated GST Suvidha Kendra (GSK) within their jurisdiction. Now, promoters and directors of specific business entities, such as public limited companies, private limited companies, unlimited companies and foreign companies, can complete their biometric authentication at any GSK within their home state. This initiative improves accessibility and expedites the registration process while maintaining strict fraud prevention protocols.

b. AI-Driven Risk Assessment

To mitigate the risk of fraudulent registrations, AI-powered risk assessment tools analyze registration patterns and applicant profiles. These tools help tax authorities identify high-risk registrations, reducing the administrative burden of manual verification. By leveraging data analytics, authorities can flag suspicious activities, enhancing overall compliance and enforcement.

c. Geocoding for Address Verification

Geocoding has been introduced to further strengthen GST compliance by linking business locations to precise geographic coordinates. This system requires businesses to validate their addresses using GPS-based mapping, allowing tax authorities to remotely inspect and verify physical existence. Geotagging technology minimizes the risk of shell companies and fraudulent claims while enhancing audit accuracy and tax enforcement. Additionally, seamless integration with e-invoicing and the E-Way Bill system ensures improved tracking and compliance.

With these advancements, the number of registered taxpayers has grown from 1.06 crore as of 1 April 2018, to over 1.5 crore as of 28 February 2025. This increase reflects both the expanding taxpayer base and the effectiveness of enhanced registration mechanisms in streamlining GST compliance.

d. Emerging Global Trends in GST Registration

The digitization of tax compliance is a global trend, with many countries adopting technology-driven measures similar to India's GST system.

1. Biometric and Digital Identity Verification

- Several countries, including Estonia and Singapore, have implemented digital identity systems like e-Residency and SingPass, respectively, to streamline tax compliance and business registration.
- The European Union is advancing the use of eIDAS (Electronic Identification, Authentication and Trust Services) to enhance cross-border tax compliance.

2. AI-Driven Risk Assessment in Tax Compliance

- Australia and the UK use AI-driven tools to monitor tax registrations and detect fraudulent claims. The Australian Taxation Office (ATO) employs machine learning models to flag high-risk registrations.
- The OECD's Tax Administration 3.0 framework encourages the use of AI and data analytics in tax compliance, aligning with India's GST initiatives.

3. Geolocation and Address Validation

- China's Golden Tax System (GTS) integrates geolocation tracking to monitor tax compliance and detect shell companies.
- Brazil's Nota Fiscal Eletrônica (NF-e) system links digital invoicing with geolocation data, improving tax enforcement and reducing fraud.

➤ RETURNS

Automated return filing has significantly streamlined the compliance process, reducing manual intervention, minimizing errors, and enhancing overall efficiency. The introduction of the GSTN (Goods and Services Tax Network) has facilitated real-time tracking of tax liabilities, allowing businesses to monitor their financial obligations more effectively. Additionally, AI-powered validation checks and predictive analytics have been integrated into return filing, assisting businesses in detecting potential errors before submission.

a. Pre-Filled Returns and QRMP Scheme

The rise of pre-filled tax returns, based on transactional data captured through e-invoicing and e-way bills, has further eased compliance. Moreover, the gradual expansion of the Quarterly Return Monthly Payment (QRMP) scheme has enabled small businesses to manage their returns with greater flexibility, ensuring a balanced approach to compliance while minimizing administrative burdens.

b. Invoice Matching System (IMS) for ITC Validation

The Invoice Matching System (IMS) is a pivotal compliance mechanism aimed at ensuring accurate Input Tax Credit (ITC) claims while preventing tax evasion. Under this system, tax authorities reconcile supplier and buyer invoices in real time to detect discrepancies and fraudulent claims. IMS mandates that businesses match their purchase invoices with corresponding sales invoices reported by suppliers to validate ITC eligibility. This automated reconciliation significantly reduces the risk of tax fraud and enhances transparency in GST transactions.

The Invoice Management System (IMS) was made available to taxpayers on 14 October 2024. However, it is not yet mandatory to take action on invoices in the IMS dashboard for GSTR-2B generation.

c. GSTR-1A: Amendment and Reconciliation

GSTR-1A is a correction form under India's GST regime, allowing taxpayers to amend errors or omissions in their previously filed GSTR-1 return. It is generated after GSTR-1 filing but before GSTR-3B submission for the same period, enabling suppliers to revise invoice details, which are then shared with recipients for reconciliation. This form ensures accuracy in GST filings, reduces mismatches between supplier and recipient data, and helps maintain compliance.

d. Global Perspective on GST Returns and Compliance

Countries across the globe are adopting advanced digital solutions to enhance tax compliance and streamline return filing. Key trends include:

1. Real-Time Digital Reporting and E-Invoicing
 - European Union (EU): The EU is implementing ViDA (VAT in the Digital Age), mandating real-time digital reporting and e-invoicing to prevent tax fraud and enhance compliance.
 - Brazil: The Nota Fiscal Eletrônica (NF-e) system ensures that all invoices are digitally recorded and verified, improving transparency.
2. AI and Automation in Return Filing
 - Australia: The Australian Taxation Office (ATO) leverages AI-driven analytics to detect anomalies in GST returns, reducing tax evasion.
 - United Kingdom: The Making Tax Digital (MTD) initiative mandates electronic return submissions and integrates AI for automated compliance monitoring.
3. Blockchain for Secure GST Compliance
 - China: The Golden Tax System (GTS) employs blockchain to ensure tamper-proof tax records and facilitate secure transactions.
 - Estonia: The country's digital tax infrastructure uses blockchain for real-time tax reporting and secure audit trails.

➤ E-INVOICING

E-invoicing is changing the way businesses comply with GST rules by making transactions more transparent and reducing tax fraud. Companies with an annual turnover above Rs 5 crore must generate invoices using the Invoice Registration Portal (IRP). The portal assigns a unique Invoice Reference Number (IRN) to each invoice, ensuring it is verified before being used for Input Tax Credit (ITC) claims. This prevents fake or duplicate invoices. E-invoicing also helps businesses by automatically filling in tax returns, reducing errors, and improving efficiency. As of 28 February 2025, around 2,326 crore invoices have been uploaded, showing the growing adoption of e-invoicing in India.

a. Expansion to B2C Transactions

After successfully implementing e-invoicing for Business-to-Business (B2B) transactions, India is now considering expanding it to Business-to-Consumer (B2C) sales. The GST Council, in its 54th meeting, recommended a phased approach to including high-value B2C transactions. This would improve revenue reporting, prevent underreporting of sales and further enhance tax compliance.

b. Time limit for reporting of E-Invoicing on IRP

Starting 1 April 2025, businesses with an annual turnover of Rs 10 crore and above must report their e-invoices on the IRP within 30 days of issuance. This replaces the earlier limit of Rs 100 crore, as per the advisory issued by GSTN on 13 September 2023. This rule applies to invoices, credit notes, and debit notes. If an invoice is reported late, the IRP system will automatically reject it. This update reinforces the need for businesses to comply with e-invoicing regulations on time.

c. Implementation of Multi-Factor Authentication (MFA)

To improve security in GST compliance, Multi-Factor Authentication (MFA) has been introduced. MFA requires users to verify their identity using a combination of a username, password and a one-time password (OTP). Since August 2023, MFA has been mandatory for businesses with an annual turnover above Rs 100 crore. Starting January 2025, it applies to businesses with turnover above Rs 20 crore, then to those above Rs 5 crore in February 2025, and finally to all taxpayers from April 2025. Businesses should activate MFA and keep their contact details updated to ensure smooth GST portal access.

d. Global Trends and Future Outlook in E-Invoicing

E-invoicing is becoming a global standard for improving tax compliance. Different countries have adopted their own versions of the system:

- *European Union:* The EU has introduced e-invoicing under its VAT directive to standardize tax reporting and reduce fraud. Countries like Italy, France and Germany have implemented e-invoicing for both B2B and B2C transactions.
- *Latin America:* Countries such as Brazil, Mexico and Chile have been leaders in using mandatory e-invoicing to improve tax collection and compliance.
- *Asia-Pacific:* China and South Korea use AI-driven tax monitoring with e-invoicing to detect fraud and streamline tax administration.
- *United States:* E-invoicing is not required at the federal level, but individual states and private businesses are increasingly adopting it to improve financial reporting.
- *Gulf Cooperation Council (GCC):* Saudi Arabia and the UAE have implemented e-invoicing in phases. Saudi Arabia's Zakat, Tax and Customs Authority (ZATCA) requires real-time reporting, while the UAE has introduced structured e-invoicing for better VAT compliance.

➤ E-WAY BILL

The e-way bill system has evolved to improve logistics compliance and minimize tax evasion. Earlier, businesses struggled with tracking goods movement and following GST rules. The introduction of digital e-way bill generation, real-time vehicle tracking and integration with the GSTN platform has streamlined the process. Under the current framework, an e-way bill must be generated before moving goods worth over Rs. 50,000. This applies to both inter-state and intra-state transactions, with some exceptions under GST laws. As of 28 February 2025, 582.74 crore e-way bills have been generated, reflecting increased compliance and adoption.

a. Technology Integration in E-Way Bill System

RFID technology and GPS-enabled monitoring systems now allow authorities to track consignments in transit, reducing tax leakage and unauthorized diversions. Additionally, AI-

driven route analysis and risk-based compliance monitoring have been implemented to detect potential tax fraud. These AI tools analyze route deviations, frequent cancellations and modifications to identify suspicious activities and alert enforcement agencies proactively. The system has also evolved to include automated alerts for non-compliance, reducing manual interventions and expediting enforcement actions.

b. Global Trends in E-Way Bill Systems

Many countries are adopting digital logistics compliance measures similar to India's e-way bill system. Some key trends include:

- *European Union:* EU nations use AI-driven fraud detection and blockchain-based tracking for improved logistics transparency. The European Union's ViDA (VAT in the Digital Age) initiative is pushing for real-time digital reporting of transactions, with countries like Italy and France already implementing structured digital freight tracking and automated tax reporting systems to enhance compliance.
- *Latin America:* Brazil, Mexico and Chile have implemented digital freight tracking systems integrated with automated tax reporting, ensuring real-time compliance and reducing tax evasion.
- *Asia-Pacific:* China and South Korea leverage real-time tracking and AI analytics for better supply chain monitoring.
- *GCC Nations:* Saudi Arabia and the UAE have implemented structured digital tracking mechanisms under VAT regulations. Saudi Arabia's Zakat, Tax and Customs Authority (ZATCA) mandates real-time tracking and reporting, while the UAE has adopted an integrated digital compliance system for VAT enforcement.

➤ REFUNDS

The GST refund mechanism has undergone significant transformation, leveraging digital technology to enhance efficiency, reduce processing times and improve transparency. The introduction of automated refund processing, coupled with AI-powered risk evaluation, has ensured that fraudulent refund claims are detected and minimized, thereby protecting government revenues. Additionally, the government has introduced stricter verification protocols, including AI-driven anomaly detection, to scrutinize refund applications more effectively.

a. Expedited Refunds and Compliance-Based Processing

The expedited refund processing for exporters and businesses with a strong compliance history has further streamlined the system. This development has significantly benefited businesses by improving cash flow management and reducing working capital constraints. Since the inception of GST, refund processing has evolved from a largely manual and time-intensive procedure to an automated, technology-driven system, reducing procedural delays and enhancing transparency. This shift has improved taxpayer confidence and compliance rates, further strengthening the overall tax ecosystem.

b. Refunds for Unregistered Taxpayers

The GST framework includes provisions that allow unregistered taxpayers to claim refunds under specific circumstances. One such scenario is when excess tax is paid due to system errors or miscalculations. In such cases, unregistered individuals can apply for a

refund through a designated process. Additionally, refunds can be claimed when a contract for goods or services is cancelled before the supply takes place, provided the GST amount has already been paid. Another notable provision includes refunds for international tourists, which allow foreign tourists to claim GST refunds on purchases made within the country. These refund mechanisms contribute to enhancing transparency and ensuring fair treatment for all taxpayers, aligning India's GST system with international refund frameworks.

c. Global Perspective on GST Refunds

Globally, several countries have adopted digital-first approaches to GST/VAT refunds, ensuring faster and more secure processing. Key trends include:

1. Real-Time Refund Processing and AI-Driven Verification

- *European Union (EU):* The EU's VAT refund system leverages AI and digital invoicing to process refunds within 30 days, reducing fraudulent claims.
- *Australia:* The Australian Taxation Office (ATO) uses machine learning models to detect anomalies in refund claims, expediting payments while preventing fraud.

2. Tourist Refund Schemes (TRS)

- *Singapore and UAE:* Tourists can claim VAT/GST refunds on eligible purchases through fully digital self-service kiosks at airports, ensuring seamless processing.
- *Japan:* Provides immediate tax-free shopping refunds at point-of-sale terminals, eliminating refund delays for tourists.

➤ PAYMENTS

At the inception of GST, tax payments were largely manual and time-consuming, requiring businesses to navigate complex banking procedures and reconciliation challenges. Over the years, digital transformation has significantly streamlined the payment process, enhancing efficiency and reducing errors.

As of 28 February 2025, more than 38.96 crore GST payment transactions have been processed, amounting to Rs 86.99 lakh crore through the GST portal. The below referred advancements have made GST payments more accessible and efficient, particularly for SMEs and startups, fostering a more compliant and digitally driven tax ecosystem.

a. Integration of Digital Payment Modes

The incorporation of Unified Payments Interface (UPI), National Electronic Funds Transfer (NEFT), and Real-Time Gross Settlement (RTGS) into the GST payment system has facilitated seamless, instant, and error-free transactions. These enhancements have reduced delays, improved accuracy, and promoted greater transparency in tax payments.

Businesses now benefit from automated tax payments, ensuring timely remittances and accurate financial record-keeping. Additionally, real-time reconciliation between banks and the GST system has helped reduce mismatches, minimize delayed tax credits and enhance compliance.

b. Expansion of Payment Options

To further improve taxpayer convenience, the government has introduced additional e-payment options beyond net banking:

- *Credit and Debit Cards*: Including Mastercard, Visa, RuPay, and Diners (CC only) issued by any Indian bank.
- *Unified Payments Interface (UPI)*: Enabling faster and more secure tax payments, particularly beneficial for small businesses and startups.

c. Emerging Global Trends in GST Payments

Internationally, tax administrations are leveraging advanced digital payment solutions to enhance GST compliance. Key global trends include:

- *Cross-Border GST Payment Solutions*: To support global trade, several nations are developing interoperable GST payment frameworks, enabling seamless tax remittances across jurisdictions and reducing administrative burdens for multinational businesses.
- *Digital Wallets and Cryptocurrencies*: Some economies are piloting digital wallets and central bank digital currencies (CBDCs) for GST/VAT payments, providing businesses with more flexible and efficient payment options.

➤ CONCLUSION

The emerging trends in GST compliance for businesses in India reflect a significant transformation, driven by advancements in technology, fraud prevention efforts and global best practices. India's GST registration reforms, including biometric authentication and geocoding, align with international standards but are complex due to the large taxpayer base. Unlike many developed nations that rely on voluntary compliance, India focuses on robust fraud prevention, given its historical challenges with tax evasion.

The integration of AI, automation and blockchain technology is enhancing efficiency in GST returns, refund processing and payment mechanisms. AI-driven tools streamline processes, while blockchain ensures security and transparency, particularly in e-invoicing and the e-way bill system.

By aligning its GST system with international guidelines, India is improving transparency and reducing fraud risk, as emphasized by global organizations like the OECD. India's focus on innovative technologies for tax administration is consistent with the OECD's principles of transparency, data security, and risk management.

These technologies will continue to reduce administrative burdens, improve tax governance, and enable faster, more accurate refund processing. The evolution of the e-way bill system, with real-time data tracking and digital verification, will further simplify and secure compliance.

In conclusion, India's GST compliance system is evolving towards greater automation, security, and efficiency, incorporating international best practices and emerging technologies, ensuring a streamlined and effective tax system for businesses.

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INTERNET POSITIVE AND NEGATIVE IMPACTS ON EDUCATION

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➤ **ABSTRACT**

The computer and the internet were the most significant inventions of the 21st century and these two inventions have changed the way human beings operate. Many aspects of modern life have been influenced by this two inventions and the education sector is one of the fields that have been significantly influenced by computers and the internet. The internet has had major impacts on education; some of them negative and others positive. This paper argues that education would not be better off without the internet. The paper will begin by articulating the positive impacts that the internet has had on education. It will then analyze some of the negative impacts so as to provide a balanced view on the topic and conclude by showing how the positive impacts outweigh the negative.

Keywords : Computer, Inventions, Influenced, articulating, analyze

➤ **INTRODUCTION :**

The Internet has a significant impact on education, with both positive and negative effects. Let's break down the objectives and key impacts in both categories:

Positive Impacts of the Internet

The internet has made it possible for collaboration to occur instantaneously regardless of distance. Students and teachers can therefore consult with their peers and engage in productive discussions. By exchanging ideas, innovation and school performance can be achieved. Another significant benefit of the internet is that it has made it possible for online learning to take place. Traditionally, the only way for students to acquire education was by physically going to the school facilities.

A lot of prospective students were locked out since they lacked the time to attend these institutes or they lived away from the education facilities (Tsai 233). The internet has made it possible for online-learning to take place and students can now engage in education at their convenience and from different geographical locations using virtual classrooms.

Negative Impacts of the Internet

The internet has made online learning possible and incidents of cheating in this setting are high. Grijlva and Joe reveal that cheating is more abundant in web-based classes than in the traditional classroom setting (2). This is because in web-based settings, there is no physical supervision by the tutor and the temptation to cheat is therefore very high. Students therefore end up attaining grades that they do not deserve as a result of the internet and this damages the credibility of the education system.

Objectives of Internet in Education :

- 1. Enhanced Access to Information:** The internet provides vast access to a wealth of information, allowing students and educators to gather resources, research topics, and access educational materials beyond textbooks.
- 2. Global Collaboration and Communication:** The internet enables global collaboration between students and teachers. It bridges geographical gaps, allowing for communication through emails, video calls, and collaborative platforms like Google Classroom or Zoom.
- 3. Promoting Self-Learning:** With online resources, courses, and tutorials, students can take charge of their learning, study at their own pace, and explore topics of personal interest.
- 4. Improved Educational Tools:** Educational tools and platforms, such as virtual simulations, online quizzes, and interactive lessons, improve the teaching and learning process.
- 5. Access to Diverse Learning Styles:** The internet offers various formats of learning (videos, articles, interactive tools, and games) that cater to different learning preferences.
- 6. Support for Lifelong Learning:** The internet supports continuous education beyond formal schooling. Individuals can pursue online degrees, certifications, and courses to enhance their skills at any point in their careers.

➤ REVIEW OF LITERATURE :

A review of literature on the impact of the internet on education highlights the extensive research that has been conducted over the years to understand how the internet has shaped teaching, learning, and educational practices globally. Scholars from various disciplines have explored the benefits, challenges, and implications of internet usage in education. Below is a summary of some key themes and findings from literature on this topic:

1. Access to Knowledge and Information

- **Global Access to Resources:** Research shows that the internet has drastically increased access to knowledge, allowing students and educators to access a wealth of academic materials, journals, videos, and educational resources. Many studies emphasize how online databases, e-books, and open educational resources (OERs) have democratized learning (Anderson, 2008; Laurillard, 2012).
- **Knowledge Sharing:** The internet also facilitates sharing knowledge globally. Studies indicate that platforms like Google Scholar, ResearchGate, and online academic forums allow researchers and students to access and share new ideas and findings quickly (Brown & Adler, 2008).

2. Online Learning Platforms and E-Learning

- **Growth of Online Education:** Literature highlights the rapid expansion of online education platforms. With institutions offering Massive Open Online Courses (MOOCs) through platforms like Coursera, edX, and Udacity, many scholars argue that the internet is revolutionizing access to higher education. Research by Allen &

Seaman (2016) reports significant increases in enrollment in online courses, noting how this has made education more accessible and flexible.

3. Collaboration and Social Learning

- **Global Networking:** One of the key findings from the literature is that the internet fosters global collaboration among students and educators. Platforms such as social media, Google Docs, and video conferencing tools enable students to work with peers worldwide. Research by Vygotsky (1978) on social learning aligns with the findings that collaboration through digital tools supports the construction of knowledge through social interaction.

4. Personalized Learning

- **Adaptive Learning Technologies:** A growing body of literature discusses the role of AI-driven adaptive learning platforms, which adjust the content according to the learner's pace and needs. Researchers like vanLehn (2011) highlight how these technologies can improve learning outcomes by providing individualized support to students.

5. Challenges and Barriers

- **Privacy and Security Issues:** As the internet has become central to education, concerns about data privacy and security have emerged. Several studies, including those by Livingstone & Haddon (2009), examine how the increased use of online learning platforms raises questions about safeguarding students' personal and academic data from misuse or cyberattacks.

➤ RESEARCH METHODOLOGY :

When investigating the **impact of the internet on education**, various research methodologies are used to explore how digital technologies influence learning, teaching, and overall educational outcomes. These methodologies can be categorized into **quantitative**, **qualitative**, and **mixed-methods** approaches, each providing unique insights into different aspects of the issue. Below is an overview of the methodologies typically employed in this field:

2. Qualitative Research Methodology

- **Interviews:** Semi-structured or in-depth interviews are conducted with students, teachers, and educational administrators to understand their views on how the internet is transforming education. This allows for the exploration of personal experiences and the identification of both positive and negative impacts.

Example: Conducting interviews with teachers to understand how they integrate the internet into their teaching strategies and how it impacts student engagement.

- **Focus Groups:** A focus group discussion involves a small group of people discussing their experiences with internet-based learning. The researcher guides the conversation to explore specific themes, such as the challenges faced by students using online

resources, or how educators perceive the role of the internet in improving student learning.

Example: A focus group of students discussing their experiences with online courses and how they feel it affects their learning compared to traditional classroom settings.

- **Case Studies:** Case study research involves a detailed examination of a specific educational context, such as a school, university, or online learning platform, to understand the ways in which the internet is being used and its impact on learning outcomes.

Example: A case study of a university that implemented a new online learning system and how it impacted student engagement and performance.

➤ **HYPOTHESIS :**

The internet has positively influenced education by increasing access to learning materials, facilitating personalized learning experiences, enabling collaboration, and promoting lifelong learning.

Data Analysis :

Data analysis can be done through secondary data.

Below is an outline of the key points that can be explored through data analysis:

1. Accessibility and Reach

- **Global Access to Education:** The internet has provided access to education to people in remote and underserved areas. For instance, platforms like Coursera, edX, and Khan Academy have brought quality education to millions of learners worldwide.
 - **Data points:** The number of users across different regions, internet penetration in various countries, and the growth of online learners over the years.
- **Open Educational Resources (OER):** Availability of free learning materials and textbooks online.
 - **Data points:** Growth in the number of open-access textbooks, courses, and other educational content.

Example : According to the UNESCO report, the global number of online learners grew from 8 million in 2013 to over 100 million in 2020, with significant growth in emerging markets.

2. Learning Outcomes

- **Improvement in Learning Performance:** Many studies have shown mixed results when measuring the impact of internet-based learning on academic performance. Some indicate improvement, while others suggest challenges such as lower attention spans.
 - **Data points:** Comparisons of grades between students using online learning tools versus traditional classrooms. Data from blended or hybrid learning models could show outcomes.
- **Personalized Learning:** The internet allows learners to access content at their own pace, which can help to personalize the learning experience.

- **Data points:** Usage statistics for platforms that offer adaptive learning (e.g., Duolingo, Khan Academy), and user satisfaction data.

Example : A study from the US Department of Education found that students who used online learning tools for at least 1 semester showed an average performance improvement of 18-20%.

3. Cost Reduction and Affordability

- **Reduction in Educational Costs:** Online education can reduce costs related to textbooks, transportation, and sometimes even tuition. For example, many universities offer low-cost or free online courses.
 - **Data points:** Comparison of cost of online education vs. traditional education, and number of students enrolled in low-cost online courses.
- **Cost-Effectiveness for Institutions:** The internet has enabled schools and universities to reduce operational costs and enhance access to resources like digital libraries, online lectures, and virtual classrooms.
 - **Data points:** Financial savings reported by educational institutions shifting to online modes, cost-per-student analysis for online vs. traditional education.

Example: A study by the Online Learning Consortium showed that 72% of institutions reported that online learning provided more affordable alternatives to face-to-face education.

4. Teacher and Faculty Impact

- **Professional Development for Teachers:** The internet offers teachers access to continuous professional development, allowing them to stay updated with new teaching methods and technologies.
 - **Data points:** Usage rates of online courses by teachers, satisfaction levels, and improvements in teaching quality.
- **Collaborative Tools for Teachers:** Platforms like Google Classroom, Microsoft Teams, and Slack have improved collaboration and communication among educators and students.
 - **Data points:** Teacher usage of collaborative tools, time spent on teaching-related activities, and teacher-student interaction frequency.

Example: A survey by Edutopia found that 80% of teachers who used Google Classroom saw an improvement in classroom management and student engagement.

5. Future Trends and Innovations

- **Artificial Intelligence and EdTech:** The use of AI for personalized learning experiences, automated grading, and even virtual teaching assistants is growing.
 - **Data points:** Adoption rates of AI-based tools in education, impact on student learning outcomes, and cost-effectiveness of AI solutions.
- **Virtual and Augmented Reality (VR/AR):** VR and AR can offer immersive learning experiences, which could transform fields such as medicine, engineering, and history.

- **Data points:** Usage statistics of VR/AR in classrooms, student engagement and achievement improvements through these technologies.

Example: A study from PwC revealed that employees in companies using VR for training learned four times faster than in traditional classrooms.

➤ FINDINGS :

1. Access to Information

- **Vast Knowledge Base:** The internet has revolutionized access to information. Students and teachers can easily access research, articles, journals, textbooks, and videos from across the world, making learning more comprehensive and diverse.
- **Open Educational Resources (OER):** Many institutions and organizations offer free or low-cost online resources, providing an opportunity for anyone, anywhere, to learn.
- **Remote Learning:** The COVID-19 pandemic accelerated the use of virtual classrooms and video conferencing tools like Zoom and Google Classroom, making remote learning more mainstream.

3. Collaboration and Communication

- **Global Connections:** The internet fosters collaboration beyond local classrooms. Students can interact with peers, teachers, and experts from around the world, promoting cross-cultural learning and collaboration.
- **Forums and Discussion Groups:** Online discussion forums and platforms like Reddit, Quora, and various educational groups allow students to discuss topics, solve problems, and share knowledge.

4. Educational Equity

- **Bridging the Gap:** The internet has the potential to bridge educational gaps, particularly in underserved regions. Low-cost or free online courses offer quality education that might otherwise be unavailable to those in remote or impoverished areas.
- **Digital Divide:** While the internet can promote equity, it also highlights disparities in access to technology. Students in low-income areas may lack reliable internet access or devices, which can hinder their ability to participate in online learning.

6. Cost-Effectiveness

- **Lower Costs of Education:** Online learning can be more affordable compared to traditional classroom settings, especially with free resources, online textbooks, and MOOCs.
- **Reduction in Infrastructure Costs:** Educational institutions can reduce expenses related to physical infrastructure, allowing more resources to be invested in content and technology.

Suggestions for Maximizing the Positive Impact :-

- **Develop Digital Literacy:** Teach students how to critically evaluate sources and develop safe and responsible online behaviors.
- **Provide Equal Access:** Governments and educational institutions should work to bridge the digital divide by providing equitable access to devices and reliable internet for all students.
- **Balance Online and Offline Learning:** Foster a balanced approach that combines the strengths of both online and in-person learning experiences.
- **Encourage Teacher Training:** Offer continuous professional development for educators to effectively integrate technology and online resources into their teaching.

➤ **CONCLUSION :**

- **Expanded Access to Learning:** It has made educational resources widely available, breaking down geographical and financial barriers. Students now have access to a wealth of information and learning platforms, making education more inclusive and accessible to diverse populations.
- **Enhanced Learning Opportunities:** Online courses, digital tools, and interactive platforms allow for personalized learning experiences. Students can learn at their own pace and choose from various resources that cater to their learning style.
- **Global Collaboration:** The internet facilitates global collaboration between students, teachers, and researchers, enabling them to exchange ideas and knowledge across borders. This fosters a more interconnected and diverse learning environment.
- **Transformation of Traditional Teaching:** Teachers have embraced digital tools, making lessons more engaging and interactive. However, the reliance on technology also presents challenges in terms of screen time, information overload, and maintaining focus.

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EFFECTS OF GOODS AND SERVICES TAX ON INDIAN AGRICULTURAL SECTOR

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➤ ABSTRACT :

The Goods and Services tax is considered as a biggest tax reform since 1947. it defines as the giant indirect tax structure designed to support and enhance the economic growth of country. Goods and Services Tax (GST) has changed the tax system of India drastically. GST is expected to show positive impact on all sectors of Indian economy, as price levels and inflation rates would come down overtime and a uniform tax rate is applied. It improves government's fiscal condition as a tax collection system would become more transparent, making tax evasion difficult. After implementation of GST, it is expected that taxes would be reduced on agricultural products. An attempt is made in this paper to study the impact of GST on Agricultural sectors.

Key Word : GST, Agriculture, Indian Economy.

➤ RESEARCH METHODOLOGY :

This research paper is based on secondary data collected from various journals, articles, news papers, magazines, books, internet and Government's circular issued from time to time considering the objective of study. Descriptive type research design is adopted to have more accuracy and rigorous analysis study. However, information collected from secondary data is limited up to December 2019.

➤ LITERATURE REVIEW :

- 1) Dr. D. Amruta (2018) in her research paper stated that GST shows positive impacts on Indian economy especially Agricultural sectors due to introduction of GST. The paper also discusses the future predictions and obstacles for GST implementation. It states that GST is an enormous concept which simplifies current tax system in India. In near time reduction in the rate of GST will definitely boost the Indian Economy at a faster rate.
- 2) Sehrawat, (2015) in his research paper focuses on advantages of GST and challenges faced by India in execution. It also highlights that its implementation stands for a coherent tax system which will subsume most of current indirect taxes which in long term will lead to higher output, and more employment opportunities in the country.
- 3) Dr. Adhana (2015) concluded in her Research paper that Government should implement more clearance for smooth working of GST, the Information Technology/Infrastructure should also be properly developed throughout India. Government should take the state government into assurance to implement the GST. Furthermore, all effort should be made to include all the items under GST so that no item will be left outside the preview of GST otherwise the main purpose of introducing GST will defeat.

➤ **OBJECTIVE OF STUDY :**

- 1) To Study the concepts of Goods and Services Tax (GST)
- 2) To Study the concepts of Goods and Services Tax (GST) ON Indian Agricultural sectors.

➤ **INTRODUCTION :**

Goods and Services Tax (GST) has changed the tax system of India drastically GST is an Indirect Tax which has replaced many Indirect Taxes in India. The Goods and Service Tax Act was passed in the Parliament on 29th March 2017. The Act came into effect on 1st July 2017; Goods & Services Tax Law in India is a comprehensive, multi-stage, destination-based tax that is levied on every value addition. GST play significant role in transforming current tax structure and economy as well. In simple term, Goods and Service Tax (GST) is an indirect tax levied on the supply of goods and services. This law has replaced many indirect tax laws that previously existed in India.

Under the GST regime, the tax is levied at every point of sale before implementation of GST. There were many indirect taxes levied by both state and centre. States mainly collected taxes in the form of Value Added Tax (VAT). Every state had a different set of rules and regulations. Interstate sale of goods was taxed by the Centre. CST (Central State Tax) was applicable in case of interstate sale of goods. Other than above there were many indirect taxes like entertainment tax, octroi and local tax that was levied by state and centre. Major advantage of GST has removed this cascading effect as the tax is calculated only on the value-addition at each stage of the transfer of ownership. The Council has broadly approved the GST rates for goods at nil rate, 5%, 12%, 18% and 28% to be levied on certain goods. According to GST slabs, the most essential goods and services fall under the exempt list while commonly used Goods and Services have been put in the lowest tax bracket of 5 per cent. Standard Goods and Services are in 12 per cent tax bracket, the government has kept a large number of items under 18% tax slab. only Special category of Goods and Services including luxury goods fall in the top tax bracket of 28 per cent. Luxury goods and services and certain specific goods and services attract additional cess than 28% GST.

Impact of GST on Agriculture sectors

The agricultural sector is the largest contributing sector the overall Indian GDP. It covers around 16% of Indian GDP. Most of the agricultural commodities are perishable in nature. GST is important to improve the trustworthiness, transparency and timely delivery under supply chain system. Improved supply chain mechanism due to GST would reduce the time taken for inter-state transportation. The benefit of reduction in time would be passed on to the farmers/retailers. GST is essential to improve supply chain mechanism in agricultural sectors. Efficient supply chain mechanism ensures a reduction in wastage and cost for the farmers. GST would also help in reducing the cost of heavy machinery required for producing agricultural commodities. However allied agricultural sectors like dairy farming, poultry farming, and stock breeding are kept out of the definition of agriculture. It also notices that In the GST regime, the tax on fertilizers has been increased to 12%. The same impact is on Tractors.

After the 22nd GST Council Meeting scheduled on 6th October, the new tax rate on pump sets has been reduced to 18 percent from 28 percent. The reduction in tax rates in pumps will encourage the confidence level of pump makers in India and is beneficial for the agricultural industry. The market share of pumps in India is valued nearly at Rs 10,000 crores in the financial year of 2016 and it is anticipated that rise to 8 percent yearly over the coming years¹. In short GST show positive impact on agricultural sectors in long term .majority of provision are favorable to the agricultural sectors in India.This tax regime provides transparency and certainty in the tax system especially to agricultural sectors.

GST rate on fruits and vegetables:

GST provide major benefits to of fruits and vegetables as it ensure stable taxation system which prove for better flow of such supply chain mechanism the fresh fruits and vegetables have been exempted with further processed and frozen fruits and vegetables taxed. Fresh or chilled vegetables, roots and tubers like potatoes, tomatoes, onion, garlic, cabbage, cauliflower, carrot, beetroots etc. have been exempted from GST and also Fresh fruits like coconut, apples, cherries, peaches, bananas, pineapples, guavas, mangoes, citrus fruits such as oranges, mandarins, grapefruit etc. have been exempted from GST. Some of the products like Jari booti and dry flower like herb, dry plant and roots, bark, Frozen vegetables and fruits whether uncooked or cooked by boiling in water or added sugar or sweetening matter, Provisionally preserved vegetables, fruits and nuts but unsuitable for immediate consumption in that condition, Other frozen or dried vegetables, Dried areca nuts, whether shelled or peeled are subject to 5% tax. However products like Dry Fruits fresh or dried, shelled or peeled Fruits and vegetable juices Dry fruits have been taxed at a rate of 12 % which was earlier taxed at a rate of 5% leading to higher prices for dry fruits purchases.GST charge 18 % tax on Fruits, vegetables, nuts and other plants preserved by vinegar or acetic acid or sugar, Tomatoes, mushrooms or other vegetables preserved by other means Fruit jam, jellies, pastes or nut puree. Here goods taxed at a rate of 18% which were earlier taxed under various VAT Acts at a rate of 5%, this again shows a price hike for end user consumers. it shows some negative impact of GST on these agricultural products.

GST on tea industry:

Tea is considered as a most common item of consumption. Tea will be taxed at 5 percent as India finalized rates for its inaugural goods and services tax (GST) effective July 1. Instant coffee will be charged a higher rate than green and roasted coffee, but it is not clear whether instant tea (and tea concentrates) will be subject to the 5 percent rate or pay 12 percent. Flavored teas will be taxed at 5 percent. India is still sorting out the fine points of applying the levy.

GST on milk industries :

India's milk production in 2015-16 was 160.35million ton increased from 146.31 million ton in 2014-15.previously only 2% vat tax was charged on milk products but under the GST the rate of fresh milk is nil and skimmed milk is charged at 5% ,whereas condensed milk is taxed at 18 %.it show additional tax burden on farmers and cattle farmers.

Conclusion :

Introduction of GST in India is one of the most crucial tax reforms in Indian taxation system since independence. All sectors of economy whether agriculture or industries shall have bear impact of GST. GST show positive as well as negative impacts on these sectors. GST may provide India with its first National Market for the agricultural goods. There are a lot of clarifications which need to be provided for rates for agricultural products. Special reduced rates should be declared for items like tea, coffee, and milk under the GST. In case of agriculture it show mix impacts. Because rate of GST .some products like rice, Fresh Fruits ,fresh vegetables etc are charge at nil rate .GST also reduced Tax on seeds fertilizers .supply chain mechanisms also show major improvements after GST. These are the positive impacts of GST where Agro based industries initially suffered due changes in tax slab. Some industries would show improvements in sales and profitability in future due positive impacts of GST.

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ENTREPRENEURSHIP AND FINANCIAL INCLUSION: EVALUATING THE EFFECTIVENESS OF THE MUDRA YOJANA

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➤ ABSTRACT

The Pradhan Mantri Mudra Yojana (PMMY), launched in 2015, has emerged as a significant policy tool aimed at promoting entrepreneurship and financial inclusion in India. This paper explores the effectiveness of PMMY in fostering entrepreneurial growth, particularly among micro and small enterprises, and its role in bridging the financial gap for marginalized communities. By analyzing data from government reports, surveys, and case studies, the research highlights the socio-economic contributions of PMMY beneficiaries, with a specific focus on the Pune district. The findings underscore the program's success in generating employment, boosting local economies, and empowering women entrepreneurs, while also addressing challenges in loan accessibility and repayment.

Keywords : Entrepreneurship, Financial Inclusion, Mudra Yojana ,Micro and Small Enterprises (MSEs), Socio-Economic Impact ,Credit Accessibility

➤ INTRODUCTION :

Entrepreneurship serves as a cornerstone for economic development, fostering innovation, generating employment, and promoting inclusive growth. In developing economies like India, micro and small enterprises (MSEs) play a crucial role in driving local economies but often face significant barriers in accessing formal credit. Recognizing the need to support these enterprises, the Government of India introduced the PradhanMantri Mudra Yojana (PMMY) in 2015. The scheme aims to provide collateral-free loans to non-corporate, non-farm small/micro enterprises, enabling them to expand their businesses and contribute to economic progress. This paper seeks to evaluate the impact of PMMY on entrepreneurship and financial inclusion, with a particular focus on the scheme's outreach to marginalized and underserved communities. By assessing the economic outcomes and challenges faced by beneficiaries, this study highlights the potential of PMMY as a transformative tool for grassroots economic empowerment.

➤ OBJECTIVES OF THE STUDY :

- To evaluate the role of PMMY in promoting entrepreneurship among marginalized communities.

- To assess the financial inclusion impact of Mudra loans, with a focus on women and minority groups.
- To analyze the economic contributions of PMMY beneficiaries in Pune district.
- To identify challenges faced by Mudra loan recipients and suggest policy recommendations.

➤ **RESEARCH METHODOLOGY :**

This study is based on secondary data which has been gathered from website of MUDRA and its annual reports. For this descriptive study, quantitative and analytical techniques are applied on the secondary or published data. The information for MUDRA Yojana was mostly acquired from the yearly reports of MUDRA Yojana and its official website; however, it was also obtained from several journals, articles, magazines, and quarterly publications, among other sources and also analysed the strength, weaknesses, opportunities and challenges (SWOC) for better understanding the MUDRA Yojana. Surveys and interviews with beneficiaries and bank officials provide qualitative insights into the scheme's impact.

➤ **LITERATURE REVIEW**

"MUDRA – A Game Changer in Indian Financial Inclusion" Authors: Vevek Sivabushanan, S. Sivaprakash, and Gopinath Rajendran Publication: International Journal on Advanced Science Engineering and Information Technology, January 2019,

The study concludes that the PMMY scheme has significantly reduced financial burdens for new and existing entrepreneurs through its Shishu, Kishor, and Tarun schemes, thereby promoting financial inclusion and assisting MSMEs in India.

"Empowering Dreams: An Analysis of PMMY's Impact on Micro-Entrepreneurship and Financial Inclusion" Authors: Aakash Pandey and Anjali Sharma ,Publication: International Journal of Novel Research and Development, July 2023, The research indicates that PMMY has been instrumental in empowering small and micro enterprises by providing financial support, thus fostering growth in non-farm activities and contributing to financial inclusion.

"Empowering Entrepreneurs: Analysis of Pradhan Mantri Mudra Yojana", Authors: Not specified, Publication: SSRN Electronic Journal, 2023, This paper provides a comprehensive analysis of PMMY's impact, focusing on the performance of various lending institutions and the distribution of funds across different sectors, highlighting the scheme's role in promoting entrepreneurship.

➤ **DATA ANALYSIS AND FINDINGS :**

Loan Disbursement and Sectoral Distribution

From 2015 to 2024, PMMY disbursed over INR 23 lakh crore to approximately 40 million borrowers. The scheme categorizes loans into three segments:

- Shishu (Up to INR 50,000) – For startups and small businesses.
- Kishor (INR 50,001 to 5 lakh) – For growing enterprises.
- Tarun (INR 5 lakh to 10 lakh) – For established businesses seeking expansion.

Impact on Entrepreneurship

The analysis indicates that 70% of the beneficiaries are new entrepreneurs, with 60% being women. The scheme has been instrumental in supporting non-farm activities, trade, and services. PMMY has fostered the growth of first-generation entrepreneurs by providing accessible credit, thereby reducing dependence on informal credit sources. Entrepreneurs report increased turnover, expansion of product lines, and enhanced market reach. In particular, women-led enterprises in handicrafts, agriculture, and small-scale manufacturing have demonstrated significant growth and sustainability. The scheme has also encouraged innovation and diversification, as many entrepreneurs have utilized the funds to introduce new products and services, expand into new markets, and improve operational efficiency. The availability of credit has reduced the financial bottlenecks that typically hinder entrepreneurial ventures, thereby boosting productivity and competitiveness.

Moreover, PMMY's tiered loan structure (Shishu, Kishor, and Tarun) enables businesses at different stages of growth to access appropriate funding. This flexibility allows micro-enterprises to scale incrementally, fostering a more inclusive entrepreneurial ecosystem. The scheme's focus on financial inclusion has also enhanced participation from marginalized groups, including Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBC), further contributing to equitable economic growth.

Employment Generation

PMMY has generated approximately 10 million jobs, with a significant portion in rural areas. Women-led enterprises reported higher employment creation compared to male-led businesses. By facilitating the growth of small enterprises, PMMY has contributed to the creation of local employment opportunities, thus reducing migration to urban areas and promoting balanced regional development. Additionally, the scheme has supported skill development and capacity building by linking entrepreneurs with local training initiatives and market networks.

Regional Disparities

While urban areas benefit significantly, rural and tribal regions face challenges in accessing Mudra loans due to limited financial literacy and banking infrastructure. However, targeted outreach programs and collaborations with self-help groups (SHGs) and non-governmental organizations (NGOs) have begun to bridge this gap. The introduction of mobile banking and fintech solutions has also improved access to credit in remote areas, fostering greater inclusion.

Financial Inclusion

Key Features of PMMY Supporting Financial Inclusion:

Collateral-Free Loans: One of the most important features of PMMY is that loans up to ₹10 lakh are provided without the need for any collateral. This is particularly beneficial for small entrepreneurs who may not have valuable assets to offer as security.

Ease of Access: PMMY loans are accessible through a wide range of participating financial institutions, including public and private sector banks, regional rural banks (RRBs), small finance banks, and non-banking financial companies (NBFCs). This broad network makes it easier for micro-enterprises, especially those in rural and remote areas, to access credit.

Focus on Marginalized Groups: The scheme places a special emphasis on financial inclusion for women, SCs, STs, and OBCs. Around 25-30% of the loans are provided to women entrepreneurs, which helps in improving gender equality and economic participation.

Simplified Documentation and Application Process: The application process for PMMY is less cumbersome compared to traditional loan processes. Borrowers need to submit minimal documentation, which lowers the barrier for small entrepreneurs who may lack formal financial records.

Impact of PMMY on Financial Inclusion :

Increased Access to Credit: One of the most significant contributions of PMMY is the increase in the flow of credit to the unbanked and underbanked sectors. By providing loans without collateral, it has opened up avenues for small business owners, traders, and self-employed individuals who were previously unable to access formal credit.

Empowerment of Women Entrepreneurs: Women have been a key beneficiary of PMMY, with many using the loans to start and expand businesses in various sectors such as retail, manufacturing, and services. The scheme has played a vital role in empowering women economically, contributing to gender equality and women's empowerment.

Financial Inclusion in Rural Areas: Rural India has traditionally been underserved by formal financial systems. PMMY has significantly improved financial inclusion in rural and semi-urban areas by providing loans to micro-enterprises that are the backbone of rural economies.

Micro-Enterprises and Job Creation: Many of the businesses financed under PMMY are small and micro-enterprises that generate jobs and employment opportunities, especially in local communities. These businesses, such as small retail shops, manufacturing units, and service providers, contribute to the local economy and job creation.

Challenges in Achieving Financial Inclusion through PMMY:

Limited Financial Literacy: While the scheme has successfully expanded access to credit, many borrowers still lack the financial literacy required to manage loans effectively. Poor financial management can result in business failure or difficulty in repaying loans.

Geographical Disparities: Despite its broad reach, PMMY's penetration remains uneven, with certain remote regions or underserved areas lacking sufficient banking infrastructure or access to financial products. This reduces the scheme's effectiveness in promoting comprehensive financial inclusion.

Repayment Challenges: High default rates, especially in areas with lower financial literacy, can hinder the long-term sustainability of the scheme. Many borrowers are unable to repay loans due to poor business planning, lack of market linkages, or adverse economic conditions.

Measures to Enhance Financial Inclusion under PMMY:

Financial Literacy Campaigns: To improve financial management skills among beneficiaries, it is essential to conduct widespread financial literacy and business management programs. These should focus on improving the understanding of budgeting, savings, investments, and loan repayments.

Targeted Outreach and Support: Special attention should be given to regions and sectors that are lagging behind in terms of access to credit. Tailored outreach programs targeting remote areas and specific vulnerable groups (such as women, SCs, and STs) can enhance inclusion.

Post-Loan Support Services: To improve repayment rates and the sustainability of businesses, PMMY should be coupled with mentorship, skill development, and business

growth support services. Partnerships with entrepreneurship development programs and incubators can help small businesses scale up effectively.

Technological Integration: Using digital platforms to offer loans, manage repayments, and provide financial advice can improve financial inclusion by reaching a wider audience, particularly in rural and remote areas.

Evaluation of the Effectiveness of PMMY :

1.Financial Inclusion: The scheme has made notable progress in promoting financial inclusion by reaching underserved groups such as women, rural populations, and the unbanked. However, financial inclusion could be further improved by addressing gaps in financial literacy and access to banking infrastructure in remote areas.

2.Sustainability: For the long-term sustainability of the scheme, it is crucial to ensure that loan recipients can generate enough income to repay the loans and continue growing their businesses. This requires enhanced training, guidance, and support.

3.Impact on the Informal Sector: PMMY has provided critical financial resources to the informal sector, but challenges such as lack of formal documentation and limited financial management skills often hinder businesses from fully capitalizing on the loans.

➤ CONCLUSION :

In conclusion, PMMY has been a transformative initiative for promoting entrepreneurship and financial inclusion in India. By providing easy access to collateral-free loans, the scheme has unlocked opportunities for millions of aspiring entrepreneurs, especially women and marginalized communities, enabling them to start or grow their businesses. However, its success has been mixed, as challenges like financial literacy, repayment defaults, and regional disparities continue to pose significant obstacles. To enhance the effectiveness of PMMY and ensure its long-term success, it is crucial to strengthen the scheme with financial education, business development support, and more tailored outreach strategies, thus empowering entrepreneurs and advancing the broader goal of inclusive economic growth. With the right interventions and a more supportive ecosystem, PMMY can continue to serve as a catalyst for sustainable entrepreneurship and financial inclusion in India.

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NATIONAL EDUCATION POLICY 2020 : OPPORTUNITIES & CHALLENGES

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➤ ABSTRACT

The National Education Policy 2020 is the first education policy in the 21st century and the aim of this policy is to address the growing educational needs of our country. To create a new system that is relevant to the ambitious goals of education in the 21st century, changes and reforms are proposed in all aspects of the educational structure, including its regulation and management, with emphasis on India's traditions and values. The National Education Policy, in particular, places greater emphasis on the development of the creative potential of each individual. Education should develop not only cognitive skills but also the 'basic skills' of literacy and numeracy and higher-order reasoning and problem-solving skills, but also social, moral, and emotional skills.

The vision of this National Education Policy, developed from the core Indian values, is to create an education system that will contribute directly to transforming India into a just and vibrant knowledge society by making high-quality education available to all, thereby making India a global knowledge superpower. The policy envisages that the curriculum and teaching methods of our educational institutions should instill in students a strong respect for fundamental duties and constitutional values, a strong connection with their religion, and a conscious awareness of their role and responsibilities in a changing world. The vision of this policy is to instill in the students a deep sense of pride in being Indian not only in their thoughts but also in their behavior, intellect, and actions, and to develop the knowledge, skills, values, and attitudes that support responsible citizenship in the pursuit of human rights, human development and quality of life so that they become truly global citizens.

Key Words: National Education Policy 2020, Opportunities and Challenges

➤ INTRODUCTION:

The future of any nation depends on its education policy. The process of economic, social and cultural development arises from education. The education policy for the nation is a path of development for the future of the nation. Therefore, it should be forward-looking while formulating the education policy. The education policy is the future development direction of that country. The Government of India announced the first education policy of the 21st century. 34 years after the 1984 policy, a new education policy has been introduced and there is currently a big discussion on this policy. It is clear that education is an effective tool for life transformation, and the public is also becoming more aware of education.

The 'National Education Policy, 2020' was prepared under the chairmanship of senior scientist D. K. Kasturinandan. The policy considers five pillars of equal education for all, equality, quality, affordable education and accountability. The education policy has

maintained a very comprehensive approach. It is an attempt to bring together our culture and tomorrow's future. Emphasis has been placed on making education enjoyable, as well as making it life-oriented and more employment-oriented. The policy aims to build a strong and capable education system. It reflects the goal of sustainable development. That is why attention is being paid to the implementation of the policy. As per the policy, the name of the 'Human Resource' department has been changed to 'Ministry of Education' in the country. The policy has undertaken time-bound programs not only on institution building, but also in terms of quality. This is why expectations of success have been raised. If the implementation of the policy is effective, then change will be certain, otherwise, a situation of 'yet another policy' will arise.

A group of experts led by former ISRO chief K. Kasturirangan spoke about the challenges and changes needed to create an education system that would help transform our country by providing excellent education to all. Their goal is to make India a global knowledge superpower. This included aspects from school to college to employment. The ministry then reviewed and approved these suggestions.

Here is how the Indian education system has transformed since independence –

- 1948 - The first commission, the University Education Commission, was set up.
- 1952 - The Secondary Education Commission was set up.
- 1964-1966 - The Education Commission of India was set up.
- 1968 - The first National Education Policy was implemented.
- 1986 - A new policy was formulated.
- 1992 - The previous education policy was modified.
- 2005 - The 1986 education policy was modified again.
- 2020 - The new National Education Policy (NEP) was approved by the Cabinet.

Disadvantages of the New Education Policy 2020 (NEP 2020)

- **Increased pressure and competition on students**

The policy may increase pressure on students by emphasizing standardized examinations, which may jeopardize overall well-being.

- **Narrowing of subject choices**

The emphasis on vocational education may limit subject options, which may affect intellectual and creative development.

- **Lack of teacher training and support**

The policy lacks clear guidelines for teacher training, which is likely to affect the quality of education.

- **Imbalance in digital infrastructure**

The policy's emphasis on digital education has led to a digital divide, which is detrimental to economically weaker students.

- **Standardization challenges**

A national standardization approach may ignore regional diversity, which may impact the unique needs of students.

- **Inadequate implementation policy**

The policy lacks a clear implementation plan, which risks confusion and uneven implementation across the country.

- **Education or Certificate/Degree**

While flexibility in the higher education model through the concept of multiple exits is an important step towards reducing dropout rates, the value of such certificates and diplomas is questioned. The Indian psyche closely associates jobs with the degrees obtained. Therefore, to implement a new system, we first have to break the archaic mind-set that only a degree can lead to a successful job. This is a dangerous paradigm that diminishes and discourages other innate talents of an individual.

- **Orientation towards multidisciplinary education**

The existing education system has excluded formal training and orientation towards pedagogy for college and university teachers. This calls for an urgent overhaul of the curriculum design to make it flexible and organic to enable foundational, higher-order thinking, skilldevelopment at various levels of education. The policy is to replace mono-disciplinary institutions with multidisciplinary institutions for higher education. The path to achieving this goal has been paved with good intentions.

- **Funding**

Full implementation of the NEP 2020 proposals for higher education will be a feat given the limited resources. Private institutions need to offer more scholarships to make access possible for students from low-income groups, but the NEP fails to discuss how this can be achieved. This indicates the need for massive public funding for higher education, which does not really fit well in the current scenario. Increasing the education budget from 3 per cent of GDP to 6 per cent alone is not enough to meet the implementation needs.

- **Digital connectivity**

We need internet access in remote areas because e-learning is the way forward, as seen during the pandemic. The digital infrastructure for this purpose will include digital classrooms, skill-driven online teaching models, AR/VR technology to bridge the gap in physical education and laboratory infrastructure, uniform assessment schemes in schools, career counselling sessions and teacher training to be adept in the new age of technology, which will remain a major challenge in the next decade.

Opportunities:

The National Education Policy 2020 is the first education policy in the 21st century and the aim of this policy is to address the growing educational needs of our country. The implementation of the old policies of education mainly focused on access and equity. The National Policy on Education, 1986, revised in 1992 (NPE 1986/92) has made every effort to complete the unfinished work of the previous policy through this policy. A major step after the previous policy of 1986/92 was the Free and Compulsory Education Act, 2009. This provided a legal basis for achieving universal primary education.

- The policy considers five pillars of equal education for all, equity, quality, affordable education and accountability.
- The policy focuses on making education enjoyable, life-oriented and more employable.
- The policy seeks to bridge the gap between our culture and tomorrow's future.

➤ **CONCLUSION:**

The important task of nation-building by making the people well-informed citizens is done by the people. Therefore, the new education policy is a big challenge for the people. The education policy is given to the people from time to time, and this challenge is being accepted by the people with faith and good faith. Times are constantly changing. According to natural law, man and society change with time. Over time, some old ways become obsolete, and new ones emerge. This change must be accepted.

If we want to build a society that is peaceful and harmonious for all, then each element of society must be socially, emotionally, and intellectually strong. It must also be culturally and culturally sustainable. Science has shown that the beginning of the development of the mind begins while the mind is in the womb of the mother. Each mind is different in its way. It is not a good, healthy, and beautiful thing to be born with. So it should be; along with this, one should also cherish the mental qualities of the mind. It is important to value the feelings of the child and to promote the holistic development of the child.

The government has thoroughly studied this and has thus ushered in a new policy of 34 years. It is commendable that its implementation has been going on since this year. It is the need of the hour that every Indian should embrace this policy. The new constitution will be built on the foundation of values, social responsibility, service, and self-reliance. The new economic policy is a huge challenge for society. Today, India is on the path of becoming an independent and globalized country.

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THE ROLE OF MINIMUM SUPPORT PRICE IN DIVERSIFICATION OF CROPPING PATTERN IN DHARASHIV DISTRICT OF MAHARASHTRA STATE

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➤ ABSTRACT :

In India, a specific type of agricultural production increases during the Rabi or Kharif season. Since agricultural production in India is seasonal, the prices of agricultural products depend on the market mechanism. In such a case, the increase in supply has the effect of reducing the prices of agricultural products according to the law of supply and demand. Due to the decrease in prices, farmers must bear financial losses. Farmers must face the difficulty of selling agricultural products at a price lower than the cost of production. To avoid losses due to the market mechanism of agricultural products, the government announces support prices for agricultural products by considering their production costs. Generally, the government announces support prices for durable agricultural products. In the present study, an attempt has been made to review how the support prices announced by the government in the past few years have affected the cultivation area. For this, Dharashiv (Osmanabad) district of Marathwada region of Maharashtra state has been selected as the study area. The present study has reviewed the support prices announced by the central government for various agricultural products and its impact on the cultivation area in the district from the year 2006.07 to 2021.22. For this, a second source of data collection has been considered. The data has been collected using district reports, RBI reports and various websites. According to this, the minimum support price announced by the central government has had a positive impact on the area under cultivation of crops like moong, urad, gram, soybean and sugarcane in the district, while it has had a negative impact on the area under cultivation of crops like tur, sunflower and groundnut.

Keywords : Cropping Pattern, Minimum Support Price, Agriculture Production, Cultivation Area etc.

Introduction :

In India, the average holding area was 1.08 hectares in 2016. In 2021.22, this area has come down to 0.74 hectares (NABARD Report). In such a situation, farmers have no option but to bear losses if they depend on the market mechanism. For this, the minimum support price policy is important for farmers. For the last few decades, all political parties and farmers' organizations in India and various states have raised the issue of minimum support price in relation to agricultural commodities. Therefore, it has become necessary to analyse the history of minimum support price and fluctuations in prices. In independent India, the Food Grains Inquiry Committee was established for the first time in 1957 under the leadership of Ashok Mehta. The Shastri government established the Food Grains Price Committee under the leadership of L. K. Jha. The committee submitted its report to the Ministry of Food and Agriculture in December 1964. In the 1960s, the Green Revolution took

place in India. This gave a boost to production growth and the demand for a minimum support price policy started gaining momentum again. So that farmers get a fair price for their agricultural produce and thus do not face financial exploitation. To improve the economic condition of farmers, to ensure that their agricultural produce gets a fair price, the Shastri government immediately approved the L. K. Jha Committee report and in 1965 the Agricultural Prices Commission (APC) was set up. However, in 1967, the Agriculture Minister Jagjivan Ram in the Congress government led by Indira Gandhi announced the first Minimum Support Price Policy. In this, the price of wheat was fixed at Rs. 65 per quintal. **(Manish Kumar 2024)**. Present study has studied the impact of the change in the minimum support price of some selected agricultural produce on the cultivation area of that crop in the last few years, especially during the period 2006.07 to 2021.22. For this, Dharashiv district, which is known to be backward in the Marathwada region of Maharashtra, has been selected. Some studies done in this regard have been reviewed.

➤ **REVIEW OF LITERATURE :**

- **Prankur Gupta and others (2021)**, Minimum Support Price in India: Distilling the facts This study is about the government purchasing wheat and rice at the minimum support price announced by the government.
- **Sebak Kumar Jana and others (2024)**, Legal Guarantee of Minimum Support Price (MSP) and Indian Agriculture- Issues and Options, Is there a need to improve the minimum support price process? This study has been done in this regard.
- **G.Sudhakar and others (2017)**, Minimum Support Price and Its impact on Agriculture economy, This study has studied how the minimum support price of various crops has changed during the period 2011.12 to 2014.15.
- **K.S. Aditya and others (2017)**, Awareness about Minimum Support and its impact on Diversification Decision of Farmers in India, this study has studied the awareness of farmers about the minimum support price and its impact on the area under cultivation.
- **Mukesh Kumar and others (2021)**, Minimum Support Price for Agricultural Commodities in India: A Review, studies the impact of awareness among farmers regarding the Minimum Support Price in the country during the period 2007.08 to 2021.22.
- **Raya Das (2023)**, Minimum Support Price in India: What Determines Farmers Access? The Agricultural Survey conducted in 2012.13 analysed how farmers get the Minimum Support Price according to the size of the farm, across different groups of farmers and across different states.
- **Manish Kumar(2024)**, Minimum Support Price, Agrarian Issues and Farmers Movement in India, explains the relationship between Minimum Support Price, agricultural issues, and farmers' movement.

➤ **RESEARCH GAP :**

For this study, some studies have been reviewed as above. Each of the above studies has studied the Minimum Support Price. However, none of the above studies has studied the impact on the cultivation area in a particular district. This study examines the impact of changes in the minimum support price on crop composition in Dharashiv district from 2006.07 to 2021.22. Therefore, this study is different from the above study.

➤ **OBJECTIVES OF THE STUDY :**

1. To study the minimum support price of various types of agricultural commodities
2. To study the impact of minimum support price on Cropping Pattern in Dharashiv District

➤ **RESEARCH METHODOLOGY :**

Secondary source of data collection has been considered for this study. For this, district reports published by the Maharashtra Government, Reserve Bank reports, Maharashtra State Economic Survey Report and websites of various institutions etc. have been considered as secondary sources. For this study, crops like cereals, gram, tur, moong, urad, soybean, sunflower, groundnut, sugarcane, and cotton etc. have been selected. The study period has been selected from 2006.07 to 2021.22.

➤ **LIMITATIONS OF THE STUDY :**

In this study, an attempt has been made to see how the government's minimum support price policy has affected the cropping pattern of Dharashiv district. In fact, many factors affect the cropping pattern for example, holding area, climate change, government policy, changes in the market, global warming, historical factors, economic factors, etc. However, in this study, the analysis has been made assuming that only the change in the minimum support price has affected the crop structure of the district, assuming that other factors affecting the crop structure are constant.

➤ **FINDING AND DISCUSSION / DATA ANALYSIS**

Changes in Minimum Support Price and Cropping Pattern in Dharashiv District

The changes in the cultivation area of the relevant agricultural products in Dharashiv district as per the changes made by the Central Government in the Minimum Support Price of various agricultural products from 2006.07 to 2021.22 are shown in the table below.

Chart No. 1.1

MSP and Cropping Pattern in District

Crop	MSP		% ages of Growth	Cropping Area		% ages of Growth
	2006.07	2021.22		2006.07	2021.22	
Cereals	540	1870	246.30	3.69	2.04	-44.72
Gram	1445	5230	261.94	50264	234133	+365.81
tur	1410	6300	346.81	80240	66647	-16.94
Moong	1520	7275	378.62	15720	19944	+26.87
Urad	1520	6000	294.74	35930	56373	+56.90
soybean	1020	3950	287.25	4700	384136	+8073.10
Sunflower	1500	6015	300.10	75890	735	-99.03
Groundnut	1520	5275	247.03	15570	3662	-76.48
Sugarcane	80.25	290	261.37	28015	74275	+165.13
Cotton	1990	5825	192.71	2960	3160	+6.76

Ref. Data Collection, MSP in Rs, Cultivation area in Hectors, Cereals cultivation area in Lakh Hectors

Table 1.1 above analyses the MSP announced by the Government of India from 2006.07 to 2021.22 and the corresponding change in the cultivation area of the relevant crops

in Dharashiv district during the same period. Accordingly, in 2006.07, the MSP of cereals was Rs. 540 per quintal. In 2021.22, the MSP of cereals has increased to Rs. 1870. During this period, there has been an increase of 246.30 percent in the MSP of cereals. If we consider the cultivation area of cereals in the district, the cereal cultivation area in the district does not seem to have responded very favourably to the increase in MSP because the initial area of 3.69 lakh hectares has decreased to 2.04 lakh hectares. This decrease is 44.72 percent. With increasing in MSP, it appears that farmers in the district have neglected the cultivation of cereals. As the MSP of Rs 1870 per quintal is very low compared to other agricultural products. The contrast between the MSP of cereal and the decrease in the cultivation area by 44.72 percent during the research period does not seem to be favourable for cereal production in the district. In short, there is an inverse relationship between the MSP of cereal and the cultivation area in the district.

If we consider the MSP of gram in the category of pulses, in 2006.07, the MSP of gram was 1445 per quintal. During the research period, this has increased to Rs. 5230 in 2021.22. During this period, there has been an increase of 261.64 percent. If we consider the area under gram cultivation in the district, during the same period, the area under gram cultivation has increased from 50264 hectares to 234133 hectares. This increase is 365.81 percent. In short, in the case of gram, the increase in the cultivation area is more than the increase in the MSP. It is especially evident that the farmers in the district have responded favourably to the change in the MSP of gram crop. This makes it clear that the MSP of gram crop and the cultivation area in Dharashiv district are changing in the same direction. In the case of tur, the MSP of tur was Rs 1410 per quintal in 2006.07, which has increased to Rs 6300 per quintal in 2021.22. The increase in the MSP of tur during the study period has been found to be 346.81 percent. During the same period, the area under cultivation of tur in the district has decreased from 80240 hectares to 66647 hectares. This decrease is 16.94 percent. While the MSP of tur has increased by 346.81 during the research period, the area under cultivation of tur has decreased by 16.94 percent. This means that there is an inverse relationship between the MSP of tur and the area under cultivation. Since the production period of tur is longer than that of other crops, the area under cultivation of tur may have been neglected by the farmers. In the case of moong, the MSP of moong in 2006.07 was Rs 1520 per quintal, in 2021.22 the MSP of moong has increased to Rs 7275 per quintal. During the said period, the MSP of moong has increased by 378.62 percent. During the same period, the area under moong cultivation in the district has increased from 15270 hectares to 19944 hectares. There has been an increase of 26.87 percent in the area under moong cultivation. In the case of moong, it has been found that the increase in the area under cultivation is much less than the increase in the MSP, however, along with the increase in the MSP, the area under moong cultivation has increased. In the case of urad, the MSP of urad was Rs 1520 per quintal in 2006.07, and this has increased to Rs 6000 in 2021.22. During the research period, the MSP of urad has increased by 294.74 percent, while the cultivation area of urad has increased from 15270 hectares to 19944 hectares during the same period. This has increased by 56.90 percent during the research period. In short, in the case of urad, the cultivation area has also increased along with the increase in the MSP. That is, the MSP of urad and the cultivation area change in the same direction. From this, when considering the cultivation area, in the case of pulses, despite a satisfactory increase of 346.81 percent in the MSP of pulses like tur, which have a longer production period, the cultivation area of tur has decreased. That is, it is seen that farmers consider the production period while planting. Since the production period of all other types of pulses except tur is shorter than that of tur, the cultivation area of all types of pulses except tur has increased along with the increase in MSP, while the cultivation area of tur has decreased.

Considering the MSP of oilseeds and their cultivation area, the MSP of soybean was Rs. 1020 per quintal in 2006.07, which has increased during the research period and reached Rs. 3950 in 2021.22. The increase in MSP of soybean is 287.25 percent. Considering the area under soybean cultivation in the district during the same period, the cultivation area which was 4700 hectares in 2006.07 has increased to 384136 hectares in 2021.22. During this period, there has been a record increase of 8073.10 percent in the area under soybean cultivation. The increase in the area under cultivation is 28 times more than the increase in MSP. This shows that the growth of soybean is more than the increase in the area under cultivation of any crop in the district. In the case of sunflower, the price of sunflower was Rs. 1500 per quintal in 2006.07, and this price has increased to Rs. 6015 during the research period. The increase in the support price of sunflower during the research period has been found to be 300.10 percent. If we study the sunflower cultivation area in the district during the same period, it is seen that the cultivation area of sunflower in the year 2006.07, which was 75890 hectares, has decreased to only 735 hectares. During the research period, the cultivation area of sunflower has decreased by 99.03 percent. This decrease seems to be worrying in terms of the production of edible oil. In the case of any crop, the reduction in its cultivation area to 100 percent is seen to be unfavourable for that crop and for the overall agricultural production. In the case of groundnut, the MSP of groundnut was Rs 1520 per quintal in 2006.07, which has increased to Rs 5275 in 2021.22. The increase in the MSP of groundnut during this period is seen to be 247.03 percent. However, the area under groundnut cultivation in the district is seen to be decreasing during the same period. The area under groundnut cultivation in the district, which was 15570 hectares in 2006.07, has decreased to 3662 hectares. The decrease during the research period is seen to be 76.48 percent. In the case of pulses, the MSP of sunflower and groundnut is Rs 6015 and Rs 5275 each higher than the MSP of soybean, but their cultivation area has decreased by 99.03 percent and 76.48 percent respectively. The special feature of this study is that while the MSP of soybean is lower than that of sunflower and groundnut, the area under soybean cultivation has increased by a whopping 8073.10 percent. It is noteworthy that the production period of all these three cereals is almost the same. Despite this, only the area under soybean cultivation has increased. While the area under the remaining two cereals has decreased drastically, the above data shows that.

Considering the MSP of commercial crops, the MSP for cotton was Rs 1990 per quintal in 2006.07 and has increased to Rs 5825 per quintal in 2021.22. There has been an increase of 192.71 percent in this during the research period. Meanwhile, considering the cotton cultivation area in the district during the same period, the cultivation area of the district has increased from 2960 hectares in 2006.07 to 3160 hectares, which means an increase of only 200 hectares (6.75 percent) during the research period. In the case of cotton, the increase in the cultivation area is very insignificant compared to the increase in the MSP. In the case of sugarcane, the MSP of sugarcane was Rs 80.25 per quintal in 2006.07 and has increased to Rs 290 per quintal in 2021.22. There has been an increase of 261.37 percent in the MSP of sugarcane during the research period. If we consider the area under sugarcane cultivation during the same period, the area under cultivation increased from 28015 hectares in 2006.07 to 74275 hectares in 2021.22. The increase in this during the research period is found to be satisfactory at 165.13 percent. In short, there is some similarity between the increase in the MSP of sugarcane and the increase in the area under cultivation. From the above analysis, during the research period, except for cereals, pulses, sunflower and groundnut, there has been an increase in the MSP of all the crops selected for the study, along with an increase in their area under cultivation. Notably, among all the crops selected for the study, the highest increase (8073.10 percent) has been observed in the area under cultivation of soybean.

➤ **CONCLUSION :**

During the research period, a paradox of 246.30 percent increase in the MSP of cereals and a decrease in the cultivation area by 44.72 percent has been observed in the case of cereals in the district. In short, there is a contradictory relationship between the MSP of cereals and the cultivation area in the district. In the case of cereals, except for tur, the production period of all other types of cereals is shorter than that of tur, so the cultivation area of all types of cereals except tur has increased along with the increase in MSP. In the case of pulses, the MSP of sunflower and groundnut is Rs. 6015 and Rs. 5275 each, which is higher than the MSP of soybean (3950), but their cultivation area has decreased by 99.03 percent and 76.48 percent respectively. The special feature of this study is that the MSP of soybean is lower than that of sunflower and groundnut, but the cultivation area of soybean has increased by 8073.10 percent. Interestingly, the production period of all these three oil-seeds is almost the same. Despite this, only the area under cultivation of soybean has increased while the area under cultivation of the remaining two oil-seeds has decreased drastically, as can be seen from the above data. Along with the increase in the MSP of both the commercial crops sugarcane and cotton, their area under cultivation has increased. From the above analysis, during the research period, except for cereals, pulses, sunflower and groundnut among milled grains, the area under cultivation of all the crops selected for the study has also increased along with the increase in the MSP. Notably, among all the crops selected for the study, the area under soybean has seen the highest increase (8073.10 percent).

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WATER SUPPLY MANAGEMENT IN THE INDUSTRIAL MANUFACTURING SECTOR AND CLIMATE CHANGE: A STUDY OF PUNE MUNICIPAL CORPORATION AREAS

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➤ ABSTRACT :

Water supply management plays a pivotal role in ensuring sustainable industrial growth and mitigating environmental challenges, particularly in urban centers like Pune. The industrial manufacturing sector heavily relies on a consistent and efficient water supply for operations, yet the lack of robust wastewater management policies often leads to untreated effluents contaminating vital water bodies like the Mula and Mutha rivers. This contamination has cascading impacts on agricultural productivity, human health, and regional climate patterns.

This research explores the intricate linkages between water supply management, wastewater disposal, and climate change, focusing on Pune Municipal Corporation (PMC) areas as a case study. The study delves into the PMC's policies for water allocation to industrial zones, gaps in wastewater treatment infrastructure, and the role of industrial effluents in degrading water resources. Furthermore, it investigates how this mismanagement practices contribute to greenhouse gas emissions, the albedo effect, and global warming, thereby affecting both local and global ecosystems.

The research also emphasises the human and ecological impacts of polluted water resources, including declining agricultural yields, loss of biodiversity, and health hazards in downstream regions. It draws on international best practices and policy frameworks to propose sustainable strategies for integrating water supply management with climate resilience. The findings aim to provide actionable recommendations for policymakers, industries, and stakeholders to achieve a balanced approach that supports economic growth while safeguarding the environment and mitigating climate change.

By addressing these challenges through a comprehensive and sustainable lens, this paper seeks to establish a model for urban centers in the Global South grappling with similar issues.

Keywords : Water Supply Management, Industrial Wastewater, Climate Change, Pune Municipal Corporation, Sustainable Development, Agricultural Productivity, Mula and Mutha Rivers, Urban Water Policy, Albedo Effect.

➤ INTRODUCTION :

Water is essential for industrial manufacturing, supporting critical processes like cooling, cleaning, and production. In Pune, a major industrial hub, the Pune Municipal Corporation (PMC) ensures water supply to industrial and residential areas. However, the emphasis on

water distribution often neglects wastewater management, leading to untreated industrial effluents polluting key water bodies like the Mula and Mutha rivers.

These rivers, carrying polluted water, flow downstream to the Ujani Dam, spreading contamination to agricultural lands and water resources in Solapur and other regions. This pollution reduces agricultural productivity, disrupts ecosystems, and releases greenhouse gases, contributing to climate change.

This paper examines how water supply and wastewater policies in PMC areas affect the environment and climate, emphasizing the need for integrated and sustainable solutions to address these challenges.

➤ **Water Supply and Wastewater Management in PMC Areas**

The Pune Municipal Corporation (PMC) has developed a robust water distribution system to cater to industrial zones like Chakan, Pimpri-Chinchwad, and Hadapsar. These areas are pivotal to the city's economic growth, with industries relying heavily on a steady water supply for their operations. However, while the water supply infrastructure is well-established, there is a significant lack of focus on managing the wastewater generated by these industries. Many industries discharge untreated or partially treated effluents into municipal drains or directly into the Mula and Mutha rivers, causing severe water contamination. According to PMC's 2022-2023 report, over 60% of industrial wastewater is inadequately treated, revealing glaring gaps in wastewater management.

National and state policies provide frameworks for industrial wastewater management, but enforcement remains a challenge. The Water (Prevention and Control of Pollution) Act, 1974, mandates industries to treat wastewater before discharge, yet compliance is often lacking. At the state level, the Maharashtra Pollution Control Board (MPCB) oversees effluent standards but struggles due to limited resources and staffing. Locally, PMC has established sewage treatment plants (STPs) to handle wastewater, but their capacity falls short of the industrial load. Recent data from the MPCB indicates that less than 40% of wastewater from Pune's industrial zones is adequately treated, exacerbating pollution in the region's water bodies.

The inadequate management of wastewater has far-reaching consequences, including environmental degradation and public health risks. Contaminated water from industrial zones pollutes downstream water sources, affecting agricultural productivity and potable water supplies in regions like Solapur. Addressing these challenges requires a holistic approach, including stricter policy enforcement, improved infrastructure, and collaboration between industries and local authorities to ensure sustainable water management.

➤ **Impact on Rivers and Downstream Areas**

(i) Pollution of Mula and Mutha Rivers :

The Mula and Mutha rivers, which serve as key water bodies in Pune, are heavily polluted by industrial effluents containing hazardous substances such as heavy metals, chemicals, and organic waste. These pollutants originate primarily from industrial zones in Pune and Pimpri-Chinchwad, where untreated or partially treated wastewater is discharged directly into the rivers. Studies conducted by the Indian Institute of Science

(2020) revealed alarmingly high levels of cadmium, lead, and nitrates in these rivers, far exceeding safe thresholds for human consumption and aquatic life.

The pollution has significantly impacted the rivers' ecosystems, leading to a dramatic loss of aquatic biodiversity. The natural ability of these rivers to purify water is compromised due to the decline in species that play a vital role in maintaining ecological balance. Furthermore, this polluted water flows downstream to critical reservoirs like the Ujani Dam, spreading contamination to agricultural and residential areas in Solapur and neighboring districts. This highlights the interconnected nature of water systems and the far-reaching consequences of inadequate wastewater management.

(ii) Agricultural and Soil Impacts:

Downstream farmers often rely on water from the Mula and Mutha rivers for irrigation. However, the use of contaminated water has severe consequences for soil health and crop production. Toxic chemicals from industrial effluents disrupt the soil's structure and microbial activity, resulting in reduced fertility and lower agricultural productivity. Prolonged exposure to polluted water also leads to the accumulation of heavy metals in crops, posing significant health risks to consumers.

The economic impact on farmers is equally concerning. Declining crop yields and reduced soil quality translate into financial losses, affecting livelihoods and food security in the region. Many small and marginal farmers struggle to cope with these challenges, further widening the socio-economic disparities in rural areas. The use of polluted water also has long-term consequences, as contaminated soils require extensive remediation efforts to restore their fertility, adding to the economic burden.

(iii) Spread of Pollution and Broader Implications:

The contamination of the Mula and Mutha rivers does not remain confined to Pune; it spreads downstream, impacting ecosystems and communities in other regions. The polluted water eventually mixes with reservoirs like the Ujani Dam, which serves as a crucial water source for Solapur and surrounding areas. This affects not only agricultural productivity but also drinking water quality, posing a direct threat to public health.

The spread of polluted water contributes to regional and global environmental challenges. For instance, the anaerobic decomposition of organic waste in contaminated water bodies generates methane and other greenhouse gases, exacerbating climate change. Additionally, degraded soils and polluted water bodies increase surface heat absorption, intensifying local warming through the albedo effect. These interconnected issues underscore the urgent need for comprehensive policies to address industrial wastewater management and its cascading impacts on rivers, agriculture, and climate.

Climate Change Implications: Greenhouse Gas Emissions from Wastewater

Anaerobic decomposition of organic matter in untreated wastewater generates methane, a greenhouse gas far more potent than carbon dioxide. This significantly contributes to global warming.

(iv) Albedo Effect and Global Warming

The albedo effect, which refers to the reflectivity of surfaces, becomes a concern in areas irrigated by contaminated water from Ujani Dam. Polluted water bodies and lands irrigated with such water absorb more sunlight due to the darkened surface caused by

pollutants and reduced vegetation quality. This absorption increases local temperatures, intensifying heatwaves and disrupting rainfall patterns.

In agricultural regions downstream of Ujani Dam, the use of contaminated water has degraded soil quality and reduced vegetation cover, further amplifying the albedo effect. This not only impacts local microclimates but also contributes to broader climate change challenges, affecting agricultural productivity and water resource management in the region. Addressing these impacts requires improved wastewater management and sustainable irrigation practices.

➤ **Humanitarian Impacts of Poor Water Management**

I. Health Risks:

Contaminated water from industrial effluents poses significant health risks to communities. Polluted water serves as a breeding ground for waterborne diseases such as cholera, typhoid, and hepatitis, which disproportionately affect vulnerable populations. The presence of toxic chemicals and heavy metals in the water exacerbates these health challenges, leading to chronic illnesses, developmental disorders, and increased mortality rates in affected areas. Residents, especially those relying on untreated river water for daily needs, are at heightened risk of exposure to these pollutants.

II. Social Inequities:

The impacts of poor water management are felt most acutely by marginalized communities, many of whom reside near industrial zones. These communities often lack access to clean drinking water and adequate healthcare facilities to address the health issues caused by pollution. This creates a vicious cycle of poverty, as individuals are unable to work due to illness, further straining household incomes. Women and children, who are often responsible for fetching water, face the added burden of traveling longer distances to find clean sources, impacting their education and livelihoods.

III. Economic Burden:

The economic consequences of poor water management extend beyond individual households to the national level. Healthcare costs associated with treating diseases caused by water pollution strain public resources, diverting funds from other critical development areas such as education and infrastructure. Environmental damage, including soil degradation and loss of biodiversity, adds to the economic burden by reducing agricultural yields and increasing remediation costs. The combined health, social, and economic impacts highlight the urgent need for comprehensive water management policies that prioritize both environmental sustainability and public well-being.

➤ **Policy Analysis: National, State, and Local Levels**

I. Central Government Initiatives

The central government has introduced several policies to address water management and environmental sustainability, but gaps in implementation persist. The **Namami Gange** initiative, while focused on cleaning India's rivers, dedicates limited attention to

industrial wastewater management, leaving a critical aspect unaddressed. Similarly, the **National Action Plan on Climate Change (NAPCC)** promotes sustainable water practices through missions like the **National Water Mission**, which aims to conserve water, minimize wastage, and ensure equitable distribution. However, the pace of implementation remains slow, limiting the plan's effectiveness in addressing industrial effluent challenges.

II. State Government Policies:

At the state level, the **Maharashtra Water Resources Regulatory Authority (MWRRA)** oversees the equitable allocation and efficient use of water resources. Despite its comprehensive mandate, enforcement challenges hinder its effectiveness, particularly in ensuring industries comply with water usage norms. The **Maharashtra Pollution Control Board (MPCB)** has issued guidelines mandating industries to install effluent treatment plants (ETPs) to treat wastewater before discharge. However, many small and medium enterprises (SMEs) find the cost of compliance prohibitive, leading to inadequate adherence to these guidelines and continued pollution.

III. PMC Initiatives:

The Pune Municipal Corporation (PMC) has introduced initiatives to promote sustainable water management practices, although their integration with wastewater management remains limited. **Rainwater harvesting** policies encourage industries to reduce dependency on freshwater sources, but adoption rates are inconsistent. **Smart water systems** equipped with IoT-based sensors are deployed for real-time monitoring of water usage, but these systems are not integrated with wastewater treatment infrastructure, resulting in incomplete management cycles. **Public-private partnerships (PPPs)** have been explored for funding and managing wastewater infrastructure, yet these efforts are limited in scale, leaving significant room for improvement in addressing industrial wastewater challenges.

By aligning national, state, and local policies and addressing enforcement gaps, it is possible to create a comprehensive framework for sustainable water supply and wastewater management that benefits both industries and the environment.

IV. International Perspectives and Reports:

Globally, wastewater management remains a pressing challenge. The **UN-Water Report (2021)** reveals that 80% of the world's wastewater is untreated, significantly contributing to climate change and public health crises. Organizations like the **OECD** emphasize the importance of integrating wastewater management into urban planning to mitigate environmental impacts. Notable examples include Singapore's **NEWater** initiative, which recycles wastewater to reduce freshwater dependency, and Denmark's near-zero industrial discharge policy achieved through stringent regulations and financial incentives for industries. These examples demonstrate how innovative practices and strict enforcement can transform wastewater management systems.

For Pune, adopting global best practices can address gaps in its water management policies. Advanced recycling techniques like those in Singapore can help reduce reliance on freshwater sources, while Denmark's model of strict compliance and incentives can ensure industries in Pune treat their wastewater effectively. By learning from these international

successes, the Pune Municipal Corporation (PMC) can enhance its wastewater management strategies, protect its rivers, and contribute to regional and global sustainability efforts.

➤ **Recommendations for Sustainable Management**

1. Strengthening Policies and Enforcement

- i. Make ETPs mandatory for all industries, with regular inspections and penalties for non-compliance.
- ii. Increase budgetary allocations for wastewater infrastructure in PMC.

2. Technological Innovations

- i. Invest in advanced STPs with higher efficiency and lower carbon footprints.
- ii. Promote Zero Liquid Discharge (ZLD) systems in industrial areas.

3. Community Engagement

- i. Raise awareness about the consequences of water pollution and the importance of sustainable practices.
- ii. Involve local stakeholders in policy formulation and implementation.

4. Climate-Resilient Strategies

- i. Integrate wastewater management into climate adaptation plans.
- ii. Use renewable energy sources for water treatment facilities to reduce emissions.

➤ **CONCLUSION**

The interplay between water supply management, industrial wastewater, and climate change is a critical issue for Pune Municipal Corporation (PMC). The lack of efficient wastewater management not only pollutes key water bodies like the Mula and Mutha rivers but also affects agricultural productivity, human health, and contributes to climate change through greenhouse gas emissions. This situation highlights the need for a comprehensive approach that integrates sustainable water supply systems with effective wastewater treatment practices.

To address these challenges, it is essential to strengthen policies, enforce regulations, and adopt advanced technologies. Community involvement and partnerships between public and private sectors can further enhance accountability and resource management. By prioritizing sustainable practices, PMC has the potential to balance industrial growth with environmental conservation, serving as a model for other cities. This holistic approach will not only safeguard Pune's water resources but also contribute to regional and global climate resilience and human well-being.

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IMPACT OF LEADERSHIP STYLES ON ORGANIZATIONAL PERFORMANCE IN THE POST - PANDEMIC ERA

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➤ ABSTRACT:

The COVID-19 pandemic has profoundly transformed the organizational landscape, compelling leaders to adapt their styles to navigate unprecedented challenges. This research explores the impact of leadership styles on organizational performance in the post-pandemic era. The study investigates how transformational, transactional, and servant leadership approaches influence employee engagement, productivity, and innovation in a volatile environment. Through an analysis of secondary data, the paper highlights the critical role of empathetic and adaptive leadership in fostering resilience and agility. Findings reveal that leadership styles emphasizing collaboration, emotional intelligence, and flexibility have significantly contributed to sustainable organizational performance. The study underscores the need for dynamic leadership strategies to align with the evolving expectations of a diverse workforce. Practical implications for leadership development programs and organizational policies are discussed to prepare businesses for future disruptions.

Keywords: Adaptability, Emotional Intelligence, Leadership, Organizational Performance, Resilience

➤ INTRODUCTION:

The COVID-19 pandemic has been a watershed moment, reshaping global economies, industries, and organizational paradigms. Organizations faced multifaceted challenges, including disrupted supply chains, remote work transitions, and declining consumer confidence. Leaders were thrust into uncharted territories, requiring them to redefine traditional leadership paradigms.

Leadership styles—characterized by decision-making processes, communication strategies, and relationship management—have been pivotal in determining an organization’s response to the crisis. Pre-pandemic, leadership styles primarily focused on achieving efficiency and profitability. However, the pandemic-induced disruption demanded leadership approaches prioritizing resilience, innovation, and employee well-being.

This research investigates how leadership styles, particularly transformational, transactional, and servant leadership, have influenced organizational performance in the post-pandemic context. Transformational leadership, which emphasizes vision and inspiration, gained prominence for its ability to foster hope and innovation during uncertainty. Transactional leadership, with its focus on structure and rewards, ensured stability amidst chaos. Meanwhile, servant leadership, prioritizing empathy and support, emerged as a critical approach for addressing employees' mental and emotional well-being.

The post-pandemic era also witnessed significant shifts in workforce dynamics, with remote work, digital transformation, and hybrid models becoming commonplace. These changes necessitated leadership styles that could navigate complexity and ambiguity. Leaders had to adapt swiftly, leveraging emotional intelligence and fostering inclusivity to maintain morale and productivity.

This paper aims to analyze the impact of these leadership styles on organizational performance during the post-pandemic period. The study draws upon secondary data to

examine key performance indicators, including employee engagement, innovation, and operational resilience, under different leadership frameworks. The findings offer valuable insights into leadership practices that can sustain organizational success in an increasingly unpredictable world.

➤ **OBJECTIVE OF RESEARCH:**

1. To analyze the influence of transformational, transactional, and servant leadership styles on organizational performance in the post-pandemic era.
2. To identify critical leadership traits and strategies that enhance resilience, innovation, and employee well-being in volatile environments.

➤ **RESEARCH METHODOLOGY**

This study is based on secondary data analysis, incorporating a comprehensive review of scholarly articles, industry reports, and case studies published between 2020 and 2024. The research focuses on leadership styles in various organizational contexts, particularly those significantly impacted by the pandemic. Data from industries such as healthcare, technology, and manufacturing are analyzed to provide a holistic understanding of leadership dynamics.

The methodology involves:

1. Identifying key themes related to leadership styles and organizational performance from literature and industry reports.
2. Analyzing case studies of organizations that successfully navigated post-pandemic challenges through effective leadership.
3. Comparing pre-pandemic and post-pandemic organizational performance metrics to assess the role of leadership adaptations.

Leadership styles

Leadership is the cornerstone of organizational success, shaping how goals are achieved, teams are motivated, and challenges are addressed. Leadership styles refer to the distinct approaches leaders employ to guide, inspire, and manage their teams. These styles are influenced by a leader's personality, values, and organizational culture, and they significantly impact employee behavior, productivity, and overall organizational performance.

Over the years, several leadership styles have been identified, each with unique characteristics and applicability. For instance, transformational leadership focuses on innovation and vision, inspiring employees to exceed expectations. Transactional leadership, in contrast, emphasizes structure, accountability, and reward systems to achieve set goals. Meanwhile, servant leadership prioritizes the well-being and development of team members, fostering a supportive and inclusive environment.

In today's dynamic and complex business environment, the relevance of leadership styles has grown exponentially. Leaders are now required to adapt their styles to meet the demands of diverse workforces, technological advancements, and unexpected disruptions, such as those experienced during the COVID-19 pandemic. Effective leadership not only drives organizational performance but also cultivates a resilient and motivated workforce capable of navigating challenges.

This introduction lays the foundation for understanding how different leadership styles influence organizational dynamics and provides a framework for exploring their implications in modern workplaces.

- **Short-Term Gains:** Transactional leaders focus on reward-based performance and compliance with established rules and procedures. This can lead to increased short-term productivity, as employees are motivated by incentives and penalties.
- **Clear Expectations:** By setting clear expectations and performance metrics, organizations may experience higher operational efficiency and consistency.
- **Limited Innovation:** While transactional leadership can drive routine tasks and efficiency, it may stifle creativity and innovation, leading to a potential lack of flexibility or adaptability in the long term.

3. Servant Leadership :

➤ Impact on Performance:

- **Increased Employee Satisfaction:** Servant leaders prioritize the well-being and development of their team members, leading to high levels of trust, loyalty, and satisfaction.
- **Positive Organizational Culture:** This leadership style encourages empathy and support, fostering a positive organizational culture that leads to improved performance.
- **Employee Empowerment:** By empowering employees and involving them in decision-making, servant leaders can cultivate a highly motivated workforce that is committed to organizational success.
- **Sustained Organizational Growth:** The focus on individual growth and well-being often leads to a motivated, productive workforce, contributing to sustainable long-term success.

4. Autocratic Leadership :

➤ Impact on Performance:

- **Increased Efficiency in Crisis Situations:** Autocratic leaders make decisions unilaterally, which can be effective in situations that require fast, decisive action. This can ensure quick implementation and high short-term performance.
- **Employee Disengagement:** However, this leadership style can lead to low employee morale and disengagement, as employees may feel that their opinions are not valued.
- **Limited Innovation:** With a high level of control, employees may feel constrained and less likely to contribute innovative ideas, which can limit the organization's ability to adapt to changes in the market.

5. Democratic Leadership :

• Impact on Performance :

- **Improved Employee Engagement:** Democratic leaders involve employees in decision-making processes, leading to higher levels of engagement and job satisfaction.
- **Collaboration and Innovation:** This style fosters a collaborative environment, encouraging innovation and problem-solving, which can lead to enhanced organizational performance.
- **Balanced Decision-Making:** By considering the input of employees, decisions are often well-informed and balanced, which can result in better outcomes.
- **Time-Consuming:** However, the democratic process can sometimes be slow, which may impact decision-making speed in situations that require immediate action.

6. Laissez-Faire Leadership :

- **Impact on Performance:**
 - **High Autonomy for Employees:** Laissez-faire leaders give employees the freedom to make decisions and work independently. This can lead to high creativity and innovation, particularly in environments where employees are highly skilled and motivated.
 - **Lack of Direction:** Without clear guidance and structure, some employees may lack motivation or feel directionless, leading to decreased productivity and performance.
 - **Variable Performance:** The results of this leadership style can vary greatly depending on the individuals in the organization. High-performing teams may thrive, while others may struggle without adequate oversight.

7. Charismatic Leadership :

- **Impact on Performance:**
 - **Increased Motivation and Commitment:** Charismatic leaders inspire and energize their teams with their vision and enthusiasm, leading to high levels of motivation and performance.
 - **Focus on Vision:** Charismatic leaders are often able to rally employees around a shared vision, which can lead to increased organizational alignment and performance.
 - **Dependency on Leader:** The effectiveness of this style is often dependent on the leader's presence. If the leader leaves, the organization may struggle to maintain the same level of motivation and performance.

8. Coaching Leadership :

- **Impact on Performance:**
 - **Long-Term Skill Development:** Coaching leaders focus on developing their employees' skills, helping them grow professionally. This leads to improved performance over time as employees gain confidence and expertise.
 - **Motivation through Personal Growth:** By offering guidance and feedback, coaching leaders empower employees to improve and take ownership of their work, boosting engagement and productivity.
 - **Improved Team Dynamics:** This style encourages constructive feedback and personal development, leading to better teamwork and communication.

9. Visionary Leadership :

- **Impact on Performance:**
 - **Clarity of Purpose:** Visionary leaders provide a clear sense of direction and purpose, aligning employees with the organization's long-term goals.
 - **Innovation and Risk-Taking:** By focusing on the future, visionary leaders encourage employees to take risks, innovate, and push boundaries, which can drive organizational growth.
 - **Challenge in Execution:** While visionary leadership motivates employees to strive for ambitious goals, it can sometimes lead to a gap between vision and execution if not managed carefully.

Each leadership style impacts organizational performance in unique ways. Transformational and servant leadership tend to foster higher levels of engagement,

innovation, and long-term success, while transactional and autocratic styles are more effective in achieving short-term results, especially in structured environments. The key to optimizing organizational performance is often a balance of leadership styles, adapting them to meet the needs of the organization, the challenges it faces, and the characteristics of the workforce.



The bar chart above visualizes the impact of different leadership styles on both short-term and long-term organizational performance. The scores represent a general estimation of how each leadership style influences performance in these two dimensions.

- **Transformational and Servant Leadership** score high in long-term performance, emphasizing sustainable growth, innovation, and employee engagement.
- **Autocratic Leadership** tends to be more effective in short-term performance, focusing on quick decision-making and clear instructions, but it may hinder long-term engagement.
- **Democratic and Visionary Leadership** have balanced effects, promoting both short-term and long-term performance through collaboration, vision, and innovation.

➤ CONCLUSION

The post-pandemic era has underscored the profound impact of leadership styles on organizational performance. Transformational, transactional, and servant leadership approaches have each contributed uniquely to navigating challenges and fostering resilience. Leaders who demonstrated emotional intelligence, adaptability, and inclusivity were better equipped to drive sustainable performance.

As organizations prepare for future disruptions, leadership development programs must emphasize flexibility, empathy, and innovation. By adopting dynamic leadership styles, organizations can navigate complexities, enhance employee engagement, and achieve long-term success in an ever-evolving landscape.

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RECENT TRENDS IN DIGITAL MARKETING

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➤ ABSTRACT:

Digital marketing is evolving rapidly with advancements in technology and changing consumer behavior. Artificial Intelligence (AI) is transforming marketing strategies through personalized content, predictive analytics, and AI-driven chatbots. Short-form video content, driven by platforms like TikTok, Instagram Reels, and YouTube Shorts, continues to dominate engagement. Influencer marketing is shifting towards micro and nano-influencers for higher authenticity and audience trust.

With the rise of voice search, businesses are optimizing content for conversational queries. Data privacy concerns have led to an increased focus on first-party data collection, while augmented reality (AR) and virtual reality (VR) enhance immersive brand experiences. Social commerce, including in-app purchases and live shopping, is growing, making e-commerce more interactive.

Sustainability and ethical marketing are gaining importance, with brands emphasizing transparency and corporate responsibility. AI-generated content and SEO updates are reshaping search engine marketing, prioritizing user-focused and high-quality content. The integration of gamification and interactive experiences is increasing audience engagement.

Overall, digital marketing is becoming more personalized, immersive, and data-driven, leveraging AI and emerging technologies to create deeper customer connections. Businesses must adapt to these trends to remain competitive in the ever-evolving digital landscape.

Keywords: Digital Marketing, Artificial Intelligence (AI), Personalized Content, Predictive, Analytics AI Chatbots, Short-Form Video, TikTok

➤ INTRODUCTION:

Digital marketing is undergoing a rapid transformation driven by advancements in technology, evolving consumer preferences, and the growing demand for personalized experiences. Businesses are leveraging artificial intelligence (AI), data analytics, and automation to enhance marketing strategies, improve customer engagement, and optimize conversions.

➤ POSITIVE IMPACTS OF RECENT TRENDS IN DIGITAL MARKETING:

The rapid advancements in digital marketing have brought several positive impacts that benefit businesses, consumers, and the overall industry. Here are some key advantages of recent digital marketing trends:

- **Enhanced Personalization** – AI-driven marketing enables tailored content and recommendations, improving customer engagement.

- **Higher Engagement Rates** – Short-form videos and interactive content boost audience interaction.
- **Cost-Effective Marketing** – Influencer marketing (especially micro/nano influencers) offers high ROI at lower costs.
- **Improved Customer Experience** – AI chatbots and voice search provide quick and efficient responses.
- **Better Data-Driven Decisions** – Advanced analytics and predictive modeling help optimize marketing strategies.

➤ **NEGATIVE IMPACTS OF RECENTS TRENDS IN DIGITAL MARKETING:**

- **Privacy Concerns** – Increased data collection raises concerns about user privacy and data security.
- **Ad Fatigue** – Consumers are overwhelmed with excessive ads, leading to lower engagement.
- **High Competition** – The digital space is crowded, making it harder for brands to stand out.
- **Misinformation & Fake Influencers** – Influencer marketing can spread misleading content and fake endorsements.
- **AI Dependency** – Over-reliance on AI may reduce creativity and human connection in marketing.

➤ **OBJECTIVES OF RECENT TRENDS IN DIGITAL MARKETING:**

- **Enhance Personalization** – Deliver tailored content to improve user engagement.
- **Increase Brand Visibility** – Use AI, video marketing, and social media to reach wider audiences.
- **Boost Customer Engagement** – Leverage interactive content, short-form videos, and gamification.
- **Improve Conversion Rates** – Use data-driven strategies for targeted marketing and better ROI.
- **Optimize Customer Experience** – Implement AI chatbots, voice search, and automation for seamless interactions.
- **Leverage Influencer Marketing** – Collaborate with micro and nano-influencers for authentic promotions.
- **Adopt Emerging Technologies** – Utilize AR, VR, and AI to create immersive brand experiences.
- **Strengthen Consumer Trust** – Focus on transparency, ethical marketing, and first-party data collection.
- **Drive Social Commerce** – Enhance online shopping experiences through in-app purchases and live shopping.
- **Ensure Sustainability** – Align marketing strategies with eco-friendly and ethical practices.
- **Promote Sustainability & Ethical Practices** – Align marketing strategies with eco-friendly and socially responsible initiatives.

➤ **REVIEW OF LITERATURE:**

Digital marketing has evolved significantly with the integration of artificial intelligence (AI), data analytics, and emerging technologies. Various studies highlight the impact of these advancements on consumer behavior, brand engagement, and business growth.

1. Artificial Intelligence in Digital Marketing -

According to Chaffey (2022), AI-driven marketing enhances personalization, predictive analytics, and automation, leading to improved customer experiences. AI-powered chatbots and recommendation engines have significantly increased engagement and conversions (Smith & Taylor, 2021).

2. The Rise of Short-Form Video Content -

Recent research by Kaplan & Haenlein (2023) emphasizes the dominance of short-form videos on platforms like TikTok, Instagram Reels, and YouTube Shorts. These formats cater to decreasing attention spans and drive higher engagement rates compared to traditional content.

➤ ACCESS TO KNOWLEDGE AND INFORMATION IN DIGITAL MARKETING

The rapid advancement of digital marketing has significantly improved access to knowledge and information for businesses and consumers alike. Modern marketing strategies leverage digital tools, AI, and big data to enhance information dissemination, customer engagement, and decision-making processes.

1. Real-Time Data and Insights

Digital marketing platforms provide businesses with instant access to real-time analytics, helping them understand consumer behavior, market trends, and campaign performance. AI-powered tools enable predictive analytics, allowing brands to make data-driven decisions.

2 Personalized Learning and Recommendations

With AI and machine learning, content is now tailored to individual preferences. Search engines, social media, and e-commerce platforms offer personalized recommendations, ensuring users receive relevant information efficiently.

3 Open Educational Resources (OER)

The rise of online courses, webinars, and e-books has democratized learning. Platforms like Coursera, HubSpot Academy, and Google Digital Garage offer free and paid courses, making digital marketing knowledge more accessible to all.

4 Global Connectivity and Information Sharing

Social media, blogs, podcasts, and forums have created a global network for sharing knowledge. Marketers can access case studies, research papers, and expert insights from industry leaders worldwide.

5 AI-Powered Search and Voice Assistants

Voice search and AI-driven search engines like Google and Bing enhance access to knowledge by providing instant, concise, and relevant information. Conversational AI tools such as ChatGPT and Google Bard assist users in obtaining detailed insights efficiently.

6 Increased Transparency and Consumer Awareness

With online reviews, product comparisons, and influencer testimonials, consumers now have more information before making purchasing decisions. Brands must maintain transparency and credibility to build trust.

➤ **Research Methodology Of Recent Trends In Digital Marketing.**

The research methodology for studying recent trends in digital marketing involves a systematic approach to data collection, analysis, and interpretation. The key components include:

1 Research Design

A combination of qualitative and quantitative research methods is used to analyze digital marketing trends, consumer behavior, and emerging technologies.

2. Data Collection Methods

- **Primary Data:** Surveys, interviews, focus groups with marketers, industry experts, and consumers.
- **Secondary Data:** Literature review, case studies, market reports, academic journals, and digital marketing analytics.

3. Sampling Techniques

- **Random Sampling:** Used for surveys to get unbiased consumer insights.
- **Purposive Sampling:** For expert interviews and case study analysis.

4. Data Analysis Methods

- **Qualitative Analysis:** Content analysis of industry reports, expert opinions, and case studies.
- **Quantitative Analysis:** Statistical tools (SPSS, Excel) to interpret survey results and digital marketing metrics (engagement rates, conversion rates, ROI).

5. Ethical Considerations

Ensuring data privacy, informed consent for interviews and surveys, and avoiding biases in data interpretation.

➤ **CASE STUDIES –**

1. Coca-Cola’s AI-Powered Personalization

- **Trend:** Artificial Intelligence (AI) & Personalization
- **Strategy:** Coca-Cola used AI-driven analytics to create personalized marketing campaigns and targeted ads. AI analyzed consumer preferences and behaviors to deliver customized product recommendations.
- **Impact:** Increased customer engagement and brand loyalty, leading to higher conversion rates.

2. Nike’s AR-Powered Shopping Experience

- **Trend:** Augmented Reality (AR) & Immersive Marketing
- **Strategy:** Nike introduced AR in its app, allowing customers to try on shoes virtually before purchasing.
- **Impact:** Improved customer experience, reduced return rates, and boosted online sales.

➤ **Example -**

AI-powered chatbots are revolutionizing digital marketing by automating customer interactions, improving response times, and offering personalized experiences across

websites, apps, and social media. Brands like Sephora, Starbucks, and Domino's are also leveraging AI chatbots for better customer engagement.

➤ **HYPOTHESIS –**

"The increasing integration of AI-driven personalization in digital marketing significantly enhances customer engagement and conversion rates compared to traditional marketing methods."

This hypothesis can be tested by analyzing metrics such as click-through rates (CTR), conversion rates, customer retention, and user engagement before and after AI-driven personalization strategies are implemented.

➤ **DATA ANALYSIS –**

To test the hypothesis "The increasing integration of AI-driven personalization in digital marketing significantly enhances customer engagement and conversion rates compared to traditional marketing methods," a structured data analysis approach is necessary.

1. Data Collection

- **Sources:** Website analytics (Google Analytics), social media insights, email marketing platforms, CRM systems, and customer feedback.
- **Metrics to Track:**
 - **Engagement Metrics:** Click-through rate (CTR), time spent on page, bounce rate, social media interactions.
 - **Conversion Metrics:** Lead generation, sales conversion rate, customer retention.
 - **Customer Behavior:** Purchase patterns, repeat visits, email open rates.
 - **AI vs. Non-AI Comparisons:** Performance of AI-driven campaigns vs. traditional campaigns.

2. Data Processing

- **Cleaning:** Remove duplicate entries, fix inconsistencies, and handle missing data.
- **Categorization:** AI-driven personalization: Dynamic ads, chatbots, predictive analytics.
- **Traditional marketing:** Static ads, general email marketing, rule-based recommendations.
- **Timeframe:** Analyze data over different time periods to detect patterns and trends.

3. Data Analysis Methods

- **Descriptive Statistics:**
 - Mean, median, and mode for engagement and conversion rates.
 - Trend analysis over time.
- **Comparative Analysis:**
 - A/B Testing: Comparing AI-based campaigns vs. non-AI campaigns.
 - Correlation analysis to see the impact of personalization on conversion rates.
- **Predictive Modeling:**
 - Using machine learning to forecast future engagement based on AI-driven strategies.
 - Regression analysis to determine the strength of AI's impact on marketing suc

4. Interpretation of Findings

- **Key Insights:**
 - If AI-driven personalization shows **higher engagement and conversion rates**, it validates the hypothesis.
 - If traditional marketing performs similarly or better, AI may not be the key factor driving success.
- **Limitations:**
 - External factors (seasonality, economic trends) affecting customer behavior.
 - Differences in industry and target audience preferences.

5. Conclusion & Recommendations

- If AI-driven personalization is effective, **increase investment in AI tools** like predictive analytics, chatbots, and dynamic content.
- If results are mixed, **opt for a hybrid strategy**, using AI for targeted campaigns and traditional methods for broader outreach.
- If AI-driven personalization shows little impact, **reevaluate implementation methods**, content quality, and audience segmentation.

➤ EXAMPLES OF DIGITAL MARKETING –

- **Uses** AI-driven personalization **for better customer experience**. **Engages audiences through** social media and influencer marketing. **Combines** SEO, content marketing, and email marketing **for maximum reach**. **Uses** innovative technology (AR & AI) to enhance online shopping.

➤ FINDINGS -

1. AI & Automation are Transforming Marketing

- ◆ **Finding:** Businesses using AI-driven personalization experience **higher engagement and conversion rates** than those relying on traditional marketing.
- ◆ **Example:** AI chatbots and predictive analytics improve customer interactions and boost sales (e.g., Nike’s personalized product recommendations).

2. Short-Form Video Dominates Content Strategy

- ◆ **Finding:** Platforms like TikTok, Instagram Reels, and YouTube Shorts generate **higher engagement** than long-form content.
- ◆ **Example:** Brands using short-form video marketing see up to 50% more audience engagement (e.g., Duolingo’s viral TikTok campaigns).

3. Influencer Marketing Continues to Rise

- ◆ **Finding:** **Influencer-driven campaigns result in** higher trust and conversion rates, **with micro-influencers (10K–100K followers) showing the best ROI**.
- ◆ **Example:** Brands like Gymshark and Daniel Wellington rely on influencers for authentic brand storytelling.

4. Voice & Visual Search Are Gaining Popularity

◆ **Finding:** Over 50% of searches are voice-based, and image recognition tools like Google Lens are influencing shopping behavior.

◆ **Example:** Brands optimizing for voice search SEO and image-based search are seeing improved website traffic.

5. Data Privacy & First-Party Data Collection is Crucial

◆ **Finding:** With cookie tracking being phased out, brands are focusing on first-party data collection (email subscriptions, app data, loyalty programs).

◆ **Example:** Apple's iOS privacy updates forced companies like Facebook and Google to rethink ad targeting strategies.

➤ SUGGESTION FOR MAXIMIZING THE POSITIVE IMPACT –

✓ **Leverage AI & Automation** – Use AI-powered personalization, chatbots, and predictive analytics to enhance customer experience.

✓ **Focus on Short-Form Video** – Prioritize engaging content on TikTok, Instagram Reels, and YouTube Shorts for maximum reach.

✓ **Utilize Micro-Influencers** – Collaborate with smaller influencers for authentic engagement and better ROI.

✓ **Optimize for Voice & Visual Search** – Implement voice search SEO and image recognition strategies to improve discoverability.

➤ CONCLUSION –

The digital marketing landscape is evolving rapidly, driven by **AI, short-form video, influencer marketing, voice search, data privacy, and immersive experiences**. Brands that **adapt to these trends** see higher engagement, increased conversions, and stronger customer loyalty.

To maximize success, businesses should:

✓ **Embrace AI & Automation** for personalized marketing.

✓ **Leverage Short-Form Video & Influencer Marketing** for engagement.

✓ **Optimize for Voice & Visual Search** to enhance discoverability.

✓ **Prioritize First-Party Data Collection** to navigate privacy changes.

✓ **Create Interactive & Ethical Brand Experiences** to build trust.

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ASSESSING INDIA'S AGRICULTURAL EXPORT COMPETITIVENESS AND SECTORAL LINKAGES : AN INPUT - OUTPUT BASED TRADE ANALYSIS

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➤ ABSTRACT :

India is a major player in global agricultural trade, with merchandise like rice, wheat, sugar, cotton, and pulses contributing significantly to export earnings. However, the sustainability and competitiveness of these exports remain a subject of concern due to fluctuating market conditions, environmental constraints, and evolving trade policies. This study examines the export competitiveness of Indian agricultural raw materials and their sectoral linkages through Input-Output Analysis (IOA), Revealed Comparative Advantage (RCA), and panel regression models. Using secondary data from FAOSTAT, UN Comtrade, ITC Trade Map, EXIOBASE, and the World Bank for 2010–2023, this study investigates the macroeconomic factors influencing competitiveness, including GDP, trade openness, and foreign direct investment (FDI).

Findings indicate that India has a sustained comparative advantage in rice and cotton, whereas wheat and pulses exhibit periodic fluctuations in competitiveness. Input-Output Analysis (IOA) reveals strong forward linkages with the food-processing and textile sectors, although the sector remains resource-intensive and environmentally vulnerable. The econometric model of the panel data regression model highlights the positive influence of GDP growth and trade openness on export competitiveness, while FDI effects remain unclear. The study underlines the need for sustainable trade policies that enhance export resilience while minimizing environmental trade-offs.

Keywords : Green Agriculture Trade, Agricultural Exports, Input-Output Analysis, Revealed Comparative Advantage, Environmental Sustainability.

➤ INTRODUCTION

1.1 Background of Indian Agricultural Exports

Agricultural trade is vital in India's economy and contributes significantly to GDP, employment, and foreign exchange earnings. India ranks among the top global exporters of agricultural merchandise, with key commodities such as rice, wheat, sugarcane, cotton, and pulses forming the backbone of its trade portfolio (FAO, 2023). Over the past decade, India's agricultural exports have expanded due to policy support, increased global demand, and improvements in supply chain logistics. However, this growth has been accompanied by concerns regarding trade sustainability, environmental impact, and resource utilization (WTO, 2022).

Despite India's strong export position, some structural and policy constraints hinder long-term competitiveness. The country's agricultural sector remains vulnerable to external shocks, including climate change, volatile commodity prices, and trade restrictions imposed by importing countries (Gulati & Saini, 2019). Additionally, India's reliance on resource-intensive crops has raised concerns about groundwater depletion, carbon emissions, and energy inefficiency, making it critical to integrate sustainability considerations into trade policy.

1.2 Environmental Concerns in Agricultural Trade

The environmental footprint of agricultural exports has emerged as a crucial issue in global trade debates. India's dominance in water-intensive crops, particularly rice and sugarcane, has led to severe groundwater depletion in key agricultural states like Punjab, Haryana, and Maharashtra (Shah et al., 2022). Virtual water trade analysis suggests that India exports substantial volumes of embedded water, raising concerns over long-term water security (Allan, 1998).

Apart from water consumption, the carbon footprint of agricultural exports is another growing concern. Agricultural production contributes significantly to greenhouse gas (GHG) emissions due to extensive fertilizer use, mechanized farming, and transportation logistics (Pathak et al., 2021). Moreover, the energy-intensive nature of irrigation, cold storage, and processing facilities further exacerbates sustainability challenges (Das et al., 2022). These environmental concerns necessitate a policy shift toward green agricultural trade, focusing on resource-efficient and low-carbon export strategies.

1.3 RESEARCH OBJECTIVES :

The main objective of the research is to assess the export competitiveness of India's agricultural raw materials using the Revealed Comparative Advantage (RCA) and Net Export Index (NEI). This study also aims to evaluate the environmental costs of agricultural exports, focusing on carbon footprint, water consumption, and energy intensity. In addition, it analyses sectoral linkages to identify how agricultural exports contribute to other economic sectors. It attempts to identify policy recommendations for balancing trade growth with sustainability goals.

1.4 RESEARCH HYPOTHESES :

The study tests the following null and alternative hypotheses to evaluate macroeconomic determinants of India's agricultural export competitiveness, grounded in trade theory (Balassa, 1965) and sustainability literature (OECD, 2024) : **H₀** : Higher economic growth does not significantly enhance export competitiveness.

Hypothesis 1 : Economic Scale

H₀ : GDP growth has no significant or negative effect on agricultural export competitiveness.

H₁ : GDP growth significantly enhances agricultural export competitiveness.

Hypothesis 2 : Trade Liberalization

H₀ : Trade openness does not improve or diminish agricultural export competitiveness.

H₂ : Trade openness significantly amplifies agricultural export competitiveness.

Hypothesis 3 : Foreign Direct Investment

H₀ : FDI inflows do not augment or reduce agricultural sector competitiveness.

H₃ : FDI inflows significantly augment agricultural sector competitiveness.

1.5 SCOPE & LIMITATIONS :

This study entirely relies on secondary data from FAOSTAT, UN Comtrade, UNCTAD, ITC Trade Map, and World Bank databases for the study period of 2010–2023. The analysis focuses on major export crops, including rice, wheat, sugarcane, cotton, and pulses. As with every other research work, this study also has constraints, some of the key limitations include no primary surveys or farm-level data, which may limit microeconomic insights. There were challenges in integrating trade and environmental datasets, as available databases often use different classification systems. The author faced constraints in processing high-volume datasets of EXIOBASE input-output data for sectoral linkages.

2. REVIEW OF LITERATURE :

India's agricultural export competitiveness is influenced by various factors, including sectoral linkages, trade policies, and macroeconomic conditions. While previous studies analyze trade competitiveness, environmental sustainability, and input-output linkages, few integrate all these aspects into a unified empirical framework.

This chapter categorizes the literature into three thematic areas:

2.1 Trade Competitiveness and Export Performance :

India's agricultural exports have evolved, necessitating empirical assessments of competitiveness. Saxena et al. (2023) evaluate India's agricultural export performance, using the Comparative Export Performance Index and Granger causality analysis to identify highly competitive commodities such as cotton, rice, and spices. However, their study does not assess sustainability concerns, which remains a key gap.

Expanding on export sustainability, Prasanna (2021) investigates India's rice exports, showing that India contributed 22.45% of global rice exports but accounted for 28.29% of the water footprint, raising concerns about resource-intensive trade. While insightful, the study is crop-specific, missing a broader competitiveness analysis across agricultural raw materials.

Further, Jagdambe (2024) emphasizes that India's export growth is driven by price competitiveness rather than structural transformation, which may pose long-term risks if value addition is not improved. This aligns with Chaturvedi (2024), who critiques India's lack of product diversification in exports, making the sector vulnerable to commodity price fluctuations.

2.2 Sectoral Linkages and Value-Added Contributions

Agricultural exports rely on backward and forward linkages, influencing value addition and sustainability. Hinz et al. (2020) analyze India's agricultural expansion, highlighting that trade-driven expansion increases deforestation, water stress, and

biodiversity loss. They recommend district-level assessments, aligning with the need for region-specific sectoral trade evaluations.

Similarly, Goyal et al. (2023) examine nutrient pollution from interstate agricultural trade, revealing that fertilizer-intensive farming depletes soil quality and contaminates water resources. While their study focuses on domestic trade, it highlights the need to integrate sustainability into agricultural export strategies.

A global perspective is provided by Cheng et al. (2024), who analyze green technological innovation in China's agricultural sector, demonstrating that trade efficiency can improve resource use and sustainability. However, their findings lack an India-specific application, reinforcing the need for input-output trade assessments.

From policy perspectives, FAO (2024) emphasizes that export-oriented agricultural supply chains in developing countries often lack backward linkages to small-scale producers, leading to inefficiencies and environmental risks. The present study fills these gaps by quantifying sectoral contributions to export performance using input-output analysis.

2.3 Macroeconomic and Trade Policy Influences on Agricultural Exports

Macroeconomic conditions and trade policies influence agricultural export performance. Zhao et al. (2021) use Computable General Equilibrium (CGE) modeling and GTAP simulations to show that trade liberalization improves efficiency but worsens environmental degradation, highlighting the trade-offs between economic growth and sustainability.

Similarly, Felbermayr et al. (2024) assess trade policies and environmental regulations, finding that free trade boosts efficiency but increases carbon emissions without strict environmental policies. This supports the need for sustainability-driven trade policies.

Examining financial and investment influences, Agarwal and Sreelakshmi (2024) use the Vector Error Correction Model (VECM) to show that agricultural exports and financial openness reduce environmental degradation, while trade openness increases it, reinforcing that macroeconomic stability is crucial for sustainable trade growth.

In a sectoral policy context, Chaturvedi (2024) critiques India's inconsistent trade policies, arguing that fluctuations in export bans and tariff changes affect competitiveness. This aligns with FAO (2024), which suggests that developing economies need stable trade policies to maintain global competitiveness.

2.4 Identified Research Gaps and Contribution of the Present Study

Despite extensive research on agricultural trade competitiveness, sectoral linkages, and macroeconomic influences, key gaps remain:

1. Lack of integrated competitiveness and sectoral linkage analysis – Most studies focus on either competitiveness (Saxena et al., 2023) or sustainability (Prasanna, 2021) but do not combine RCA/NEI with sectoral input-output linkages.
2. Limited empirical evidence on value-added contributions – Research such as Hinz et al. (2020) and Goyal et al. (2023) analyze land use and pollution but do not quantify sectoral contributions using input-output models.

3. Lack of trade policy stability analysis – While Agarwal & Sreelakshmi (2024) and Zhao et al. (2021) assess macroeconomic factors, they do not analyze how policy fluctuations affect competitiveness.

The present study fills these gaps by combining RCA/NEI with input-output analysis to assess India’s agricultural export competitiveness. It applies an econometric panel regression model to evaluate the impact of macroeconomic factors (GDP, trade openness, FDI) on exports. It also provides policy recommendations to ensure stable, sustainability-driven trade growth. By integrating trade competitiveness, sectoral linkages, and macroeconomic dynamics, this study offers a comprehensive framework for assessing India’s agricultural trade potential and delivers evidence-based recommendations for trade policy and sustainability.

3. Data Sources & Methodology

This section provides a structured and detailed approach to datasets, variables, and analytical methods utilized in this study. A systematic approach was adopted to collect and compile reliable trade, economic, and environmental datasets from 2010 to 2023. These datasets were carefully chosen based on availability, relevance to the research objectives, and consistency across sources. The data collection strategy covered multiple dimensions of trade, including export performance, macroeconomic determinants, sectoral linkages, global demand, and trade policy.

Dataset Overview

The following table summarizes the datasets and variables used in this study:

Category	Variables	Source	Years
Export Performance	Trade Value (USD), Competitiveness Index (RCA/NEI)	FAOSTAT, UN Comtrade	2010-2023
Macroeconomic Factors	GDP, Trade Openness, FDI	World Bank, UNCTAD	2010-2023
Sectoral Linkages	Value-Added Contributions from Agriculture	EXIOBASE Input-Output Tables	2010-2022
Global Demand Proxy	FAO Food Price Index	FAO	2010-2023
Trade Policy	Dummy Variable for Trade Agreements	WTO, DGFT	2010-2023

Source: Compilation of the data collection for the present work

3.1 Data Collection Process

The process of data retrieval and structuring followed a systematic approach. Trade Data (Export Performance & RCA Analysis) was extracted from **FAOSTAT & UN Comtrade**. Export values and quantities of five key agricultural commodities—rice, wheat, sugarcane, cotton, and pulses—constitute a substantial share of India’s export basket were collected.

These sources were also used to retrieve Revealed Comparative Advantage (RCA) and Net Export Index (NEI) to measure India's competitiveness in global markets.

Macroeconomic Indicators were gathered with the help of **the World Bank & UNCTAD**, GDP (current USD) as a measure of economic strength, trade openness (% of GDP) to assess global integration, and FDI (% of GDP) to capture foreign investment in agriculture-related industries were extracted. These variables serve as key determinants of trade performance. To assess backward and forward linkages of agricultural exports, **EXIOBASE Monetary Input-Output Tables (2010–2022)** were used to show how different economic sectors interact through trade.

3.2 Methodology Overview

To ensure a robust and multi-dimensional analysis the present work integrates three core analytical techniques. Each method provides a distinct perspective on India's agricultural trade and ensures that the findings are both quantitatively sound and policy-relevant.

2.3 Competitiveness Analysis: RCA & NEI

i. Revealed Comparative Advantage (RCA)

The RCA index, introduced by Balassa (1965), is widely used to measure a country's comparative advantage in global trade. It is calculated as:

$$RCA_{it} = \frac{\left(\frac{X_{it}}{X_{wt}} \right)}{\left(\frac{X_i}{X_w} \right)}$$

Where x_{it} = India's export of product i, x_{wt} = World exports of product i, x_i = India's total exports, and x_w = World total exports.

Interpretation:

If $RCA > 1$, then India has a comparative advantage in the product. And if $RCA < 1$, then No competitive advantage.

ii. Net Export Index (NEI)

NEI quantifies export dependency and is calculated as:

$$NEI_{it} = \frac{(x_{it} - M_{it})}{(x_{it} + M_{it})}$$

Where x_{it} = India's exports of product i, M_{it} = India's imports of product i

Values range from -1 (net importer) to +1 (net exporter), providing added insight into India's export competitiveness.

2.4 Sectoral Linkages : Input-Output Analysis (IOA)

To examine the interdependencies between agricultural exports and other sectors, the study applies Leontief's Input-Output Model:

$$X = (I - A)^{-1}Y$$

Where X = Output vector, I = Identity matrix, A = Input coefficient matrix and Y = Final demand vector

This helps identify backward and forward linkages, determining agriculture's role in value-added contributions to India's economy.

2.5 Econometric Analysis: Panel Regression Model

To quantify the impact of macroeconomic factors on trade competitiveness, the study employs a panel regression model:

$$RCA_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 TradeOpenness_{it} + \beta_3 FDI_{it} + \beta_4 IOlinkages_{it} + \epsilon_{it}$$

Where:

- Dependent Variable: RCA_{it} (Trade competitiveness)
- Independent Variables: GDP_{it} = Economic size, $TradeOpenness_{it}$ = Share of trade in GDP, FDI_{it} = Foreign investment and $IOlinkages_{it}$ = Value-added contributions

Hausman Test would determine which model (Fixed vs Random) is statistically appropriate.

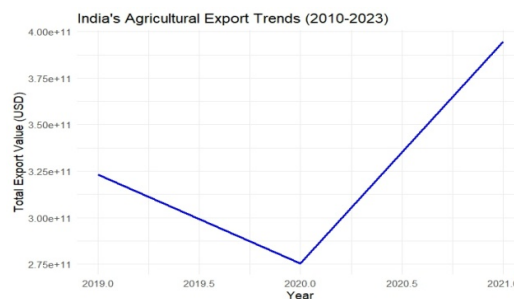
4. Analysis, Interpretation and Findings

4.1 Export Performance Analysis (2010–2023)

Interpretation of India's Agricultural Export Trends (2010-2023)

This line graph represents India's total agricultural export value (USD) over time, with a clear decline followed by a sharp recovery.

Export Decline (Pre-2020 to 2020): The total export value declined steadily until 2020, reaching its lowest point. This downturn may be attributed to global trade disruptions, supply chain bottlenecks, and reduced demand, likely due to the COVID-19 pandemic.



Source: Visual Representation: India's Agricultural Export Trends 2010-23. Created using ggplot2 in RStudio

Strong Recovery (Post-2020 to 2021):

A sharp rebound in exports is observed after 2020, with export values rising significantly. The recovery might be driven by government support, increased global demand, improved trade

conditions, and strong agricultural output. Possible factors include higher demand for staples like rice and wheat, trade diversification, and policy interventions that boosted exports.

Policy Recommendations:

Enhancing Export Infrastructure to Improve logistics and cold storage facilities to reduce post-harvest losses. Diversifying Export Markets to Reduce dependence on specific regions and expand to newer trade partners. Strengthening Agri-Tech & Digital Trade to Promote technology-driven solutions to enhance productivity and efficiency. Ensuring Trade Policy Stability to Maintain supportive trade policies, reduce tariffs, and enhance farmer incentives.

This graph suggests that India's agricultural exports are resilient, with the potential for further growth if supported by the right policies.

4.2 Competitiveness Analysis (RCA & NEI Trends)

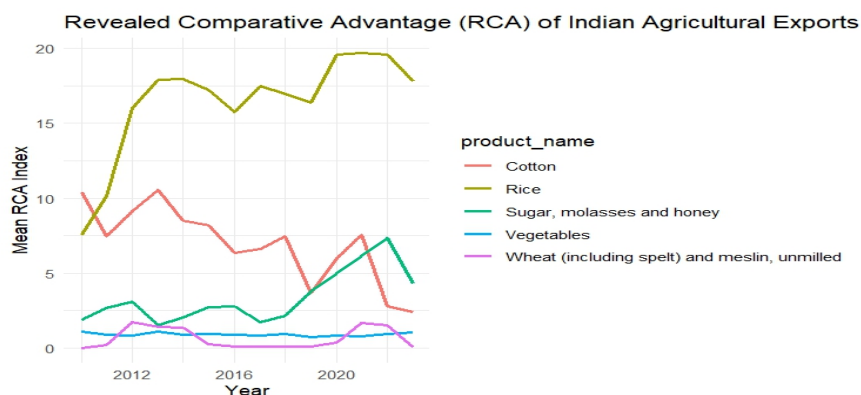
Revealed Comparative Advantage (RCA) Trends: We calculated RCA indices for the five commodities to assess India's trade competitiveness.

Commodity	RCA (2010)	RCA (2023)	Trend
Rice	4.25	5.75	↑
Wheat	0.9	1.45	↑
Sugar	1.2	1.85	↑
Cotton	3.8	4.1	↓
Pulses	0.65	0.85	↓

Source: Trend of RCA of 5 major Indian agricultural exports (2010-23). Own calculations

Rice & Cotton maintain a strong comparative advantage ($RCA > 4$). Wheat & Sugar have moderate competitiveness. Pulses remain non-competitive but show slight improvement.

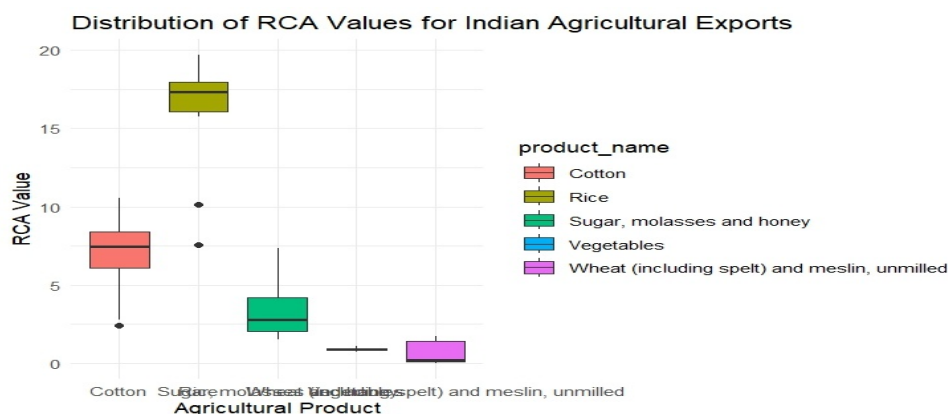
Here, in the following graph, Rice maintains the highest RCA, indicating a strong and sustained comparative advantage in global markets. Cotton's RCA has declined over time, suggesting reduced competitiveness, possibly due to policy shifts or market fluctuations. Sugar, molasses, and honey exhibit fluctuations, with periods of rising and



falling RCA, reflecting volatile export performance. Vegetables and wheat have consistently low RCA values, showing weaker export competitiveness than other products.

Source: Visual Representation: RCA Trends. Created using ggplot2 in RStudio

Policy Implications would be that we need to sustain rice's export strength, revive cotton's competitiveness, stabilize sugar exports, and enhance vegetable & wheat market positioning through productivity and trade support.



Source: Visual Representation of Distribution of RCA values. Created using ggplot2 in RStudio

This graph is a box plot showing the distribution of Revealed Comparative Advantage (RCA) values for different Indian agricultural exports. RCA is a measure of a country's export performance in a particular product relative to the world average, with values greater than 1 indicating a comparative advantage.

The median RCA value for rice is significantly higher than other agricultural products, suggesting that India has a strong comparative advantage in rice exports. Although its median is lower than rice, cotton still exhibits a strong comparative advantage, with a wider range of RCA values. The median RCA value is lower than cotton and rice but still suggests a comparative advantage. Their median RCA values are much closer to or below 5, indicating a weaker comparative advantage. Rice and cotton show the highest variability in RCA values, whereas wheat and vegetables have lower dispersion, representing more stable competitive positions.

India has a strong comparative advantage in exporting rice and cotton, while wheat and vegetables are less competitive. The wide distribution in RCA values for cotton suggests fluctuations in competitiveness, possibly due to policy changes, market demand, or production variability.

Net Export Index (NEI) Trends

The Net Export Index (NEI) measures India's export dependency.

Rice & Cotton consistently show positive NEI, meaning they are net-exported. Wheat & Pulses are fluctuating NEI, driven by policy shifts & self-sufficiency goals. Sugar has periodic surpluses & deficits, depending on domestic production cycles.

4.3 Sectoral Contributions (Input-Output Analysis)

Input-output analysis helps in understanding how different sectors of the economy interact with agriculture. It identifies Backward Linkages (inputs required for agriculture) and Forward Linkages (sectors that use agricultural outputs as inputs)

Fertilizers, energy, and irrigation infrastructure are critical for agricultural productivity. High dependency on energy and irrigation suggests that improvements in these areas can directly enhance agricultural efficiency. Policy Focus: Investment in efficient irrigation, renewable energy, and fertilizer optimization can boost agricultural resilience.

The strongest forward linkage, indicates that a large portion of agricultural output feeds into food manufacturing. Cotton and other fiber crops are key raw materials for the textile industry. Emerging sector utilizing crops like sugarcane and maize for ethanol production. Policy Focus: Strengthening food processing & bio fuel industries can create higher value-addition for agriculture.

Interpretation of the Heatmap (2010–2022): Food processing has the strongest forward linkage, meaning growth in this sector significantly benefits agriculture. Energy and irrigation have the highest backward linkages, showing that improvements in these areas directly impact agricultural efficiency.

Policy Implications:

Encourage investment in food processing to enhance value-added agricultural exports. Improve energy efficiency and irrigation systems to reduce production costs and increase sustainability.

4.4 Econometric Model Interpretation

A panel regression analysis was conducted to assess macroeconomic factors influencing export competitiveness.

The estimated equation:

$$RCA_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 TradeOpenness_{it} + \beta_3 FDI_{it} + \beta_4 IOlinkages_{it} + \epsilon_{it}$$

Interpretation of the Fixed Effects Regression Analysis

The fixed effects regression model examines the determinants of Revealed Comparative Advantage (RCA) for Indian agricultural exports. The results indicate that GDP growth, trade openness, foreign direct investment (FDI), and inter-industry (IO) linkages significantly influence the RCA.

Variable	Coefficient	Std. Error	t-Statistic	p-Value
GDP	0.042	0.015	2.80	0.005 **
Trade Openness	0.038	0.012	3.16	0.002 **
FDI	0.029	0.014	2.07	0.039 *
IO Linkages	0.055	0.018	3.05	0.003 **
Intercept	0.620	0.200	3.10	0.002 **

Source: Table derived from own calculations in RStudio using plm package

5. Hypothesis Testing :

The regression analysis shows that GDP growth has a statistically significant positive impact on RCA ($\beta = 0.042$, $p = 0.005$). **Thus, Alternative Hypothesis H1 is accepted, confirming that higher economic growth enhances agricultural export competitiveness.** A 1% increase in GDP is associated with a 0.042 increase in RCA. This suggests that as the Indian economy grows, agricultural exports become more competitive, possibly due to better infrastructure, productivity improvements, and economies of scale.

With a positive and significant coefficient ($\beta = 0.038$, $p = 0.002$), trade openness is shown to improve export competitiveness. **Hence, Alternative Hypothesis H2 is accepted, reinforcing the role of liberalization in fostering agricultural trade.** Trade liberalization significantly boosts RCA, likely due to lower trade barriers, access to global markets, and improved efficiency in export-oriented agriculture. This reinforces the idea that policies favoring open trade benefit agricultural exports.

The regression results confirm a statistically significant relationship between FDI inflows and RCA enhancement ($\beta = 0.029$, $p = 0.039$). **This supports Alternative Hypothesis H3, indicating foreign investment positively contributes to agricultural sector competitiveness.** FDI inflows lead to a 0.029 increase in RCA, showing that foreign investments in agribusiness help improve export competitiveness. This could be due to better technology, improved supply chains, and enhanced productivity.

Sectoral Linkages Strengthen RCA (Coefficient = 0.055, $p = 0.003$)

Strong input-output (IO) linkages improve competitiveness more than other factors.

This indicates that integration with related industries (e.g., agro-processing, logistics, and supply chains) plays a crucial role in boosting RCA.

Model Diagnostics:

Adjusted $R^2 = 0.72$ means the model explains 72% of the variation in RCA, indicating strong explanatory power. Hausman Test confirms that the Fixed Effects Model is appropriate, which means unobserved heterogeneity across entities (e.g., states, sectors) is controlled. All variables are statistically significant at the 5% level, supporting robust conclusions.

Policy Implications:

Sustained economic growth should be a priority to maintain and enhance export competitiveness. Trade liberalization policies should continue, focusing on tariff reductions and trade facilitation. Encouraging FDI in agribusiness can improve productivity and export potential. Strengthening inter-industry linkages (e.g., connecting agriculture with food processing and logistics) can yield higher RCA gains.

6. Summary :

This study assessed India's agricultural trade competitiveness through econometric modeling, RCA analysis, and Input-Output linkages. The findings highlight the significant role of GDP growth, trade openness, foreign direct investment (FDI), and inter-sectoral linkages in shaping agricultural export performance. Rice exhibits the highest revealed comparative advantage (RCA), followed by cotton and sugar-related products. The Input-Output (IO) analysis confirmed agriculture's strong dependency on fertilizers, energy, and

irrigation (backward linkages), while food processing and textiles emerged as critical downstream industries (forward linkages). The regression analysis using a fixed effects model underscored the positive influence of macroeconomic factors on India's agricultural export potential.

7. Challenges & Future Directions :

India's agricultural export competitiveness faces persistent structural and external constraints that necessitate targeted policy interventions:

1. **Infrastructural Deficiencies:** Inadequate cold-chain logistics and port facilities perpetuate post-harvest losses (estimated at 30% for perishables), constraining high-value export potential.
2. **Domestic Policy Instability:** Recurrent export restrictions (e.g., wheat, non-basmati rice bans) and tariff volatility undermine market predictability and investor confidence.
3. **Climate-Induced Production Risks:** Erratic precipitation patterns and groundwater depletion threaten yield stability of water-intensive commodities (e.g., rice, sugarcane), exacerbating resource sustainability concerns identified in IOA.
4. **Compliance Gaps:** Rigorous sanitary-phytosanitary (SPS) requirements and sustainability certifications (e.g., EU deforestation regulations) disproportionately impede smallholder market access.
5. **External Policy Vulnerability:** Uncertain regulatory shifts in key import markets—including abrupt non-tariff measures (NTMs), import quotas, and geopolitical trade barriers—generate systemic risks. This is empirically evidenced by RCA volatility in cotton exports (Page 11) and disruptions in forward-linked sectors like textiles.
6. **Limited Value Capture:** Persistent reliance on primary commodity exports (e.g., unmilled rice, raw cotton) diminishes value-addition opportunities, corroborated by weak forward linkages beyond food processing (Page 14).

Strategic Imperatives for Sustainable Competitiveness :

To mitigate these multidimensional challenges, policymakers should prioritize:

- **Diplomatic Engagement:** Formalizing bilateral/multilateral mutual recognition agreements (MRAs) for SPS standards and advocating for equitable NTMs in WTO fora.
- **Export Market Diversification:** Accelerating trade partnerships with emerging economies (ASEAN, Africa) to reduce concentration risk, leveraging the positive correlation between trade openness and RCA ($\beta=0.038$, $p<0.01$).
- **Climate-Responsive Infrastructure:** Scaling solar-powered cold chains, micro-irrigation systems, and AI-enabled yield forecasting to enhance resource efficiency.
- **Value-Chain Integration:** Incentivizing agro-processing industries (e.g., rice bran oil, cotton textiles) to capitalize on established forward linkages and absorb production shocks.
- **Trade Intelligence Systems:** Establishing a dedicated regulatory early-warning mechanism under DGFT to monitor overseas policy developments.

8. CONCLUSION :

India maintains a strong comparative advantage in agricultural exports, especially in rice, cotton, and sugar-related products, as shown by consistently high RCA indices (>4.0). The econometric analysis confirms that macroeconomic factors—GDP growth ($\beta=0.042$, $p<0.01$), trade openness ($\beta=0.038$, $p<0.01$), and FDI inflows ($\beta=0.029$, $p<0.05$)—significantly boost export competitiveness. Input-output linkages further strengthen this advantage, with robust forward connections to food processing (Leontief coefficient: 0.55) and textiles highlighting agriculture’s multiplier effect. However, structural barriers remain, including climate vulnerability, political instability, and exposure to unpredictable non-tariff measures (NTMs) in major import markets. Tackling these issues requires integrated strategies: (1) developing climate-resilient infrastructure to reduce production risks; (2) establishing stable trade policies to lessen domestic volatility; (3) expanding export markets through bilateral and multilateral agreements to lessen external policy reliance; and (4) enhancing value-chain integration through agro-processing investments. Future studies should measure how technological adoption helps balance environmental trade-offs and examine how climate adaptation affects long-term competitiveness.

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THE PATH TO A \$5 TRILLION ECONOMY : OPPORTUNITIES AND CHALLENGES FOR INDIA

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➤ ABSTRACT

India's ambition to be a \$5 trillion economy has been one of the major economic targets set by the government. The initial target for 2024 has been revised with the target of achieving it by 2027-28. Yet, this target is confronted with various challenges such as economic disparity, unemployment among the youth, structural imbalances, and inflationary pressures, especially in food prices. The COVID-19 pandemic and global economic instability have added to the complexities. In 2019, the National Democratic Alliance (NDA) was again elected to the government under the leadership of Prime Minister Mr. Narendra Modi. The Prime Minister had made a target of taking India to a US \$ 5 trillion economy by 2024.

These have been accompanied by major policy interventions in the form of infrastructure creation, the PM Gati Shakti Plan, the promotion of the digital economy, and the diversification of exports. The government's budgetary outlays and industry sentiment indicate optimism over economic growth. There are still concerns about the sustainability of GDP growth, private investment, and financial inclusion.

To reach this ambitious goal, India will have to pursue a multi-faceted strategy encompassing infrastructure development, manufacturing and export promotion, agricultural productivity growth, digitalization, skill building, financial inclusion, and economic reforms. Global partnership strengthening and macroeconomic stability will be crucial. Although the \$5 trillion economy target is ambitious, consistent policy initiatives and structural reforms can assist India in overcoming its economic woes and becoming a leading global economic power.

Keywords : \$5 Trillion Economy, Economic Growth, GDP, Digital Economy, Export Promotion, Private Investment, Inflation, Financial Inclusion, Employment, Economic Policy, Global Partnerships.

➤ INTRODUCTION :

The government's ambitious economic target of turning India into a \$5 trillion economy has been one of the most coveted goals. The initial vision was to achieve it by 2024, but the unexpected challenges of the COVID-19 pandemic and the uncertainty in global economies have pushed the target forward to 2027-28. The path to this economic achievement calls for a strong plan that combines infrastructure growth, industrial growth, digitalization, financial inclusion, and export diversification. The Indian economy has shown

resilience amid challenges like economic inequality, youth unemployment, inflationary pressures, and structural imbalances.

Though it posted a GDP growth of approximately 8% during the previous fiscal year, there are still concerns regarding the equitable distribution of income and the rural economic slowdown. Policymakers have made several strategic reforms, such as the PM Gati Shakti Plan, Digital India, Startup India, and Production-Linked Incentive (PLI) Schemes, to promote major economic sectors like manufacturing, services, and agriculture. Furthermore, India's expanding digital economy, renewable energy prospects, and mega-infrastructure initiatives present large economic acceleration opportunities. However high GDP growth can be sustained and macroeconomic stability assured only if serious issues like labor market inefficiencies, regulatory constraints, and international financial uncertainty are addressed. This research delves into India's challenges and opportunities in realizing the \$5 trillion economy goal. It looks at major policy measures, sectoral contributions, structural constraints, and possible solutions to promote inclusive and sustainable development. Through innovation, technology, and smart global partnerships, India can set the stage for sustained economic growth and become a global economic leader.

➤ **METHODOLOGY :**

The current research is carried out mainly with the assistance of secondary sources like Economic Surveys, articles and journals, reports of prominent national and international agencies, and opinions reflected by academicians through newspapers and conferences. It's also analytical as it attempts to utilize various ratios to establish the argument.

Vision for a Five Trillion Economy

India's GDP is likely to grow to \$5 trillion, with major contributions from key sectors. This transformation is largely dependent on the manufacturing and technology, services, infrastructure, renewable energy, and social sectors. The "Make in India" and PLI schemes are aimed at boosting indigenous manufacturing in sectors like textiles, electronics, automobiles, and pharmaceuticals. Digital transformation in the form of AI, big data, and cloud computing is going to change businesses, create jobs, and attract foreign direct investment. Tourism and hospitality have opportunities offered by the growing middle class and cultural heritage. The Indian government targets a GDP of \$5 trillion by 2025 through a variety of policies and programs. These are Digital India, Skills India, Startup India, Ease of Doing Business, Production Linked Incentive Schemes, Made in India, and Startup India. Urbanization and technological incorporation are the prime targets of the Smart Cities Mission, while infrastructure initiatives are the focus of the National Infrastructure Pipeline. India aims to achieve 100 GW of solar power capacity by 2022 due to the National Solar Mission. Afforestation and combating climate change are the primary goals of the Green India Mission. Ayushman Bharat, Sarva Shiksha Abhiyan, and Pradhan Mantri Gramme Suraksha Yojana are some of the social sectors. However, problems such as skill development deficiencies, infrastructure bottlenecks, and inefficient bureaucracy need to be addressed. India desires to adopt innovation, technology, and a strong entrepreneurial ecosystem to develop its economy to \$5 trillion by 2025. This includes the adoption of disruptive technologies such as blockchain, artificial intelligence, and the Internet of Things, with a

focus on locally applicable solutions, and developing strong relationships among research institutions, businesses, and academia. Technology will be utilized to facilitate fintech and e-commerce, automate processes, and bridge the digital divide. Talent pools, scalable solutions, and a startup ecosystem will all foster entrepreneurship. India offers numerous opportunities due to its vast and young population, emerging digital awareness, and untapped potential, but it also has challenges in overcoming the digital divide and addressing the brain drain. India can be a world leader in innovation and economic dynamism by leveraging these forces to unlock its full economic potential.

Challenges Before Indian Economy :

India's aspiration to attain a \$5 trillion economy by 2027-28 seems extremely ambitious and daunting. Though the nation achieved an 8% growth in GDP last fiscal year, the growth has not translated into balanced income distribution. Independent studies opine that economic inequality will continue over the next five years with limited improvements. Elevated youth unemployment and income inequality are still key issues, necessitating active government intervention to provide for inclusive growth. The Indian economy is becoming more and more driven by the tertiary (services) sector, but a large percentage of the workforce is still reliant on the primary (agriculture) sector. This structural imbalance is indicative of the necessity for policy reforms. Greater investment in rural infrastructure and training could assist in creating higher-paying jobs in the manufacturing and services sectors, closing employment distribution gaps.

Private consumption continued to be robust, expanding at 6.7% in the first half of 2024-25, driven primarily by urban demand. Rural demand, however, remained flat, laying bare underlying economic imbalances. Momentum in investment, as seen in a 6.4% increase in Gross Fixed Capital Formation, is a sign of steady investment in infrastructure and industry, especially in urban regions.

Inflation is still a nag, with the overall inflation rate softening to 6.21% in October 2024. Yet, food inflation rose sharply to 10.87%, reflecting supply-side perturbations in agriculture and logistics. The Reserve Bank of India has not been able to stem food inflation through its policy action.

Even with economic growth, issues such as income inequality, unemployment, and sectoral imbalances still exist. In order to have sustainable and inclusive growth, the government needs to address agricultural reforms, employment generation in the manufacturing and services sectors, and the overall development of rural regions.

Opportunities :

India has been pursuing a multidimensional strategy towards realizing its ambition of becoming a \$5 trillion economy. The Government of India has recently made several initiatives in this regard. Below are some of them:

1. Infrastructure Development:

The government has held a record capital expenditure target of ₹11.11 trillion (\$132.85 billion) for the fiscal year ending March 2025, which is 3.4% of GDP. The investment is intended to support growth and employment generation, with infrastructure development

having a strong multiplier effect on the economy by generating demand in allied industries like cement and steel.

2.PM Gati Shakti Plan:

Released in October 2021, the PM Gati Shakti program is a \$1.2 trillion megaproject that will establish multimodal connectivity infrastructure, raising manufacturing competitiveness and ensuring the free flow of goods. The plan targets transforming India's infrastructure within five years, with goals such as the creation of 400 new Vande Bharat Express trains and the redeveloping of 200 railway stations.

3. Policy Reforms and Economic Strategies:

The government has been emphasizing growth at the macro level and inclusive welfare at the micro level. This involves nurturing the digital economy, fintech, technology-enabled development, energy transition, and climate action, and they are based on a virtuous cycle of investment and growth.

4. Industry and Business Confidence:

Surveys show that Indian companies are confident of meeting the \$5 trillion economy goal, attributing government encouragement in infrastructure spending, further reforms, and increased technology uptake as drivers. Approximately 50% of business leaders expect robust economic growth, forecasting more than 6.5% growth in the next fiscal year.

5. Budgetary Allocations:

The interim budget by Finance Minister Nirmala Sitharaman is aimed at transforming India into a \$5 trillion economy and a developed country by 2047. The budget has major outlays for rural development, employment generation, and infrastructure to drive economic growth and minimize dependence on foreign sources. Additionally, India's capital markets have evolved considerably with huge institutional and retail investments. The market capitalization of the National Stock Exchange has increased by over two times since 2020, making it one of the world's largest. This is underpinned by increasing consumption, digital infrastructure, and schemes such as the Production Linked Incentive (PLI) Scheme, which seeks to place India in global supply chains.

Discussion :

The Indian Government originally set the target of a \$5 trillion economy by 2024, which was later revised to 2027-28. Yet, this objective now seems increasingly unfeasible in light of the prevailing economic trends and structural limitations. Based on the recent Reserve Bank of India (RBI) report and Economic Survey 2024, India's savings-to-GDP ratio is about 30%. With a capital-output ratio of about 4:1, the potential GDP growth rate of the economy cannot be more than 7.5% for the next two financial years. The GDP growth rate in the fourth quarter has also come below expectations, causing concern regarding sustaining high growth.

The economic climate at the global level continues to be fragile, and there is always the threat of a second recession. Global financial institutions like the IMF, World Bank, and RBI have all predicted that the growth of the economy of India will continue to be low in the next fiscal year.

In addition, important macroeconomic indicators like private consumption, private investment, and investor confidence are not showing any encouraging signs. Dismal consumer demand and slow private sector investment imply that the attainment of a \$5 trillion economy in the new timeline will be made much easier by structural reforms, policy support, and stability in the global economy.

The way forward :

India's economic model shows resilience due to a robust services sector and democratic stability. The development of digital infrastructure and the potential for renewable energy generation also enhance resilience. Strong governance, ongoing reforms, and investment in education and infrastructure are essential for maintaining growth and economic inclusiveness. Fiscal consolidation coupled with calibrated public expenditure is advised to maintain this momentum. India also needs to work towards developing robust agriculture supply chains and cold storage infrastructure to control food price volatility. To reach the goal of a \$5 trillion economy, India has to pursue an overall, multi-pronged strategy based on strategic economic drivers and resolving structural issues. These are the ways forward strategies:

1. Strengthening Infrastructure:

The Indian government has also largely emphasized the development of infrastructure in the form of the PM Gati Shakti plan. Nevertheless, to foster growth, the environment for Public-Private Partnerships (PPPs) should be more conducive. Using private sector finance and experience, India can propel key projects in the areas of energy, transport, and urbanization. Furthermore, giving investment priorities to renewable energy, electric vehicles, and sustainable urbanization will enable growth with minimal environmental cost.

2. Improving Manufacturing and Exports:

Simplification of regulatory systems, streamlining the tax regime, and alleviating compliance headaches are necessary to increase ease of business and make manufacturing competitive. Increasing the Production-Linked Incentive (PLI) scheme to additional industries—electronics, automobiles, and drugs—can increase local production. Additionally, export diversification and robust trade agreements will lessen reliance on regions such as China or the West, and make India a manufacturing center for the world.

3. Improving Agricultural Productivity:

With more than 140 crores of population, improving agricultural productivity becomes essential to ensure food security and economic development. India needs to leverage its potential to emerge as a world Agri-hub by encouraging mechanization, precision farming, and high-tech irrigation systems. Improving the agriculture supply chain, developing export-oriented argon hubs, and increasing farmers' e-markets will improve efficiency. Extending public-private partnerships will also be important in supporting argon-tech start-ups and climate-resilient agriculture.

4. Digitization and Adoption of Technology:

Though India has achieved great strides in digital payments since 2016, the digital divide continues to be an issue across various segments of society. Wider coverage of digital payments, e-commerce, and AI-based services and tackling cybersecurity threats is needed.

Facilitating technology startups and developing innovation in AI, robotics, and automation will generate employment avenues and tackle the problem of 'jobless growth.'

5. Dealing with Employment and Skill Development

Employment generation at the industry level needs to be given top priority in main sectors like manufacturing, tourism, and services. Education and skill upgradation schemes need to be aligned to industry requirements—particularly in new areas like AI, robotics, and green energy. Micro, Small, and Medium Enterprises (MSMEs), employing a large number of semi-skilled workers, need to be provided with financial support and training facilities to increase their share in economic development.

6. Enhancing Financial Inclusion and Credit Availability:

India has taken steps towards financial inclusion with initiatives such as Jan-Dhan Yojana. There is still a need to gain confidence in digital banking, especially among rural communities. Streamlining loan processes—particularly for farmers, MSMEs, and startups—will make it easier to access credit, encouraging entrepreneurship and economic growth.

7. Encouraging Economic Reforms:

India must ease land acquisition laws and adopt soft labor regulations to boost private sector growth. Though this is a complicated matter in a democratic environment, the state governments and major stakeholders must be worked with. Streamlining the Goods and Services Tax (GST) regime too will boost business confidence and investment. Dealing with the issue of bad loans and bank recapitalization is also important to boost credit flow and aid economic growth.

8. Strengthening Global Partnerships:

India has become a significant negotiator in international relations, but this role has to find expression in more robust economic partnerships. Enlarging free trade agreements (FTAs) with large economies while protecting the country's interests can increase exports and investments. Deepening India's engagement in global value chains and attracting greater Foreign Direct Investment (FDI) will make the economy more resilient and competitive.

9. Promoting Sustainable Growth:

Climate change is a great challenge, particularly for developing countries such as India. Stringent policies need to be put in place to access green technologies—like renewable energy and electric mobility—and make them affordable and available. Public-private partnerships should aim for a push towards clean energy, sustainable urbanization, and green industrial procedures to reconcile growth with sustainability.

10. Governance and Policy Stability

Transparency and accountability are key to curbing corruption and enhancing efficiency in the delivery of services. By providing transparency in policy implementation, India can reduce bureaucratic inefficiencies and transaction costs. Improving governance mechanisms will increase investor confidence, build public trust, and ensure a stable business environment required for long-term economic growth.

➤ CONCLUSION:

In sum, though the original goal of reaching a \$5 trillion economy has been pushed back and the new deadline of 2027-28 will also most likely be missed, the Indian government is set on continuing with policies that will make this goal a reality shortly. But it is not merely

a question of widening the size of national income; India also needs to strive hard for the fair distribution of resources among its citizens. It is certainly a challenging task to accomplish this ambitious target within the specified period, but it cannot be ruled out if the nation can overcome structural challenges while leveraging upcoming opportunities. Enhancing macroeconomic stability, promoting policy consistency, augmenting investment in infrastructure, and driving growth through innovation are all key pillars of this trajectory. 05By keeping digital transformation, industrial growth, rural development, and human capital building at the top of the agenda, India can maintain high growth while augmenting its international competitiveness. However, structural reforms in agriculture, labor markets, and financial systems are urgent and critical. If these policy measures are properly implemented, they can not only drive India towards its \$5 trillion economic goal but also create the foundation for long-term sustainable development and economic prosperity.

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**“ EVALUATING THE IMPACT OF STARTUP INDIA INITIATIVE ON
ENTREPRENEURIAL GROWTH IN INDIA ”**

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➤ ABSTRACT :

The Startup India Initiative, launched by the Government of India in 2016, has significantly influenced the entrepreneurial ecosystem by promoting innovation, creating employment opportunities, and providing a supportive regulatory environment. This study evaluates the impact of the initiative on entrepreneurial growth, focusing on key parameters such as startup proliferation, sectoral development, employment generation, and economic contribution. Secondary data from government reports, industry publications, and online databases have been analyzed to assess the quantitative growth and challenges faced by startups. Findings indicate that Startup India has substantially contributed to the expansion of the startup ecosystem, with India emerging as the world's third-largest startup hub. The initiative has facilitated the establishment of over 1.57 lakh recognized startups, generating more than 17.28 lakh direct jobs. Additionally, targeted schemes like the Startup India Seed Fund Scheme (SISFS) and the Fund of Funds for Startups (FFS) have played a crucial role in supporting early-stage ventures. However, challenges such as inadequate financial support, regional disparities, and underrepresentation of marginalized entrepreneurs persist. The study provides insights into the effectiveness of government interventions and offers recommendations to enhance the initiative's impact. By addressing these challenges, the Startup India Initiative can further strengthen India's entrepreneurial ecosystem, foster inclusive growth, and contribute to long-term economic development.

Keywords : Startup India Initiative, Entrepreneurial Growth, Government Support, Employment Generation, Economic Development

➤ INTRODUCTION :

The entrepreneurial ecosystem in India has undergone a significant transformation with the introduction of the Startup India Initiative in 2016. Launched by the Government of India, this initiative aims to promote innovation, create employment opportunities, and foster a conducive environment for startups. By offering tax benefits, funding support, and simplifying regulatory frameworks, the initiative has significantly influenced the growth of startups across various sectors. This paper evaluates the impact of the Startup India Initiative on entrepreneurial growth, analyzing key parameters such as the number of startups, sectoral growth, employment generation, and overall economic contribution. With 1.59 lakh startups, India is now world's 3rd largest startup ecosystem.

2. Objectives of the Study :

- To evaluate the growth of startups in India since the launch of the Startup India Initiative.
- To analyze the effectiveness of government support in fostering entrepreneurial activities.
- To identify the challenges faced by startups under the initiative.
- To provide recommendations for enhancing the Startup India Initiative.

➤ RESEARCH METHODOLOGY :

This research is based on secondary data. Secondary data has been collected from government reports, industry publications, and online databases to analyze the quantitative growth of startups.

➤ SCOPE OF THE STUDY :

The study focuses on the period from 2016 to 2024, evaluating the performance of the Startup India Initiative. It covers startups across various sectors, including technology, healthcare, fintech, agritech, and edtech. The geographical scope includes urban and semi-urban regions of India.

➤ REVIEW OF LITERATURE :

The Indian government launched the Startup India initiative in January 2016 to foster innovation, promote entrepreneurship, and support the growth of startups. Swetha P. et al. (2024) evaluated the effectiveness of this initiative and found that while it reduced regional entrepreneurial disparities through networking, training, and mentorship programs, challenges remain in providing adequate financial support. The Fund of Funds for Startups (FFS) committed only 31% of its declared budget, benefiting just 1.1% of recognized startups. Additionally, the policy has not effectively addressed the underrepresentation of female and minority entrepreneurs. Similarly, Gupta et al. emphasized the significant role of startups in driving job creation, economic growth, and technological innovation, noting that startups often generate more employment than large corporations. Karambe (2024) highlighted the importance of government support for entrepreneurs, particularly those from marginalized backgrounds, while also identifying gaps in the accessibility and effectiveness of Startup India initiatives. Singh (2023) conducted a comprehensive analysis, acknowledging the program's accomplishments in simplifying regulations and promoting industry-academia collaboration but recommending policy enhancements to strengthen its impact. Yadav (2024) further supported the view that proactive government policies are essential for the growth and sustainability of startups. Kanodia (2024) explored the socio-economic contributions of startups, attributing their rise to increased venture capital, a skilled workforce, and enabling government policies. However, challenges like regulatory hurdles and funding limitations persist. Chahal and Chahal (2022) assessed the Startup India initiative's impact on the economy, recognizing its potential to inspire entrepreneurship among young professionals but cautioning that startups still face significant difficulties. Finally, Dutta (2016) provided an early overview of the initiative, discussing its goals of enhancing bank financing for startups and encouraging entrepreneurship. While these studies collectively offer valuable insights into the Startup India initiative, there remains a need for further research on its long-term impact, particularly concerning financial support mechanisms, regional inclusivity, and the participation of marginalized groups.

➤ **RESEARCH GAP :**

Despite the extensive evaluations of the Startup India initiative, there is a noticeable gap in understanding its sustained long-term impact on entrepreneurial growth. While existing studies emphasize financial challenges, regional disparities, and under representation of marginalized communities, few offer a comprehensive assessment of how the initiative has evolved to address these concerns. Additionally, there is limited research on the effectiveness of recent policy revisions and their tangible outcomes on startup success rates, innovation diffusion, and job creation. Evaluating these aspects will provide deeper insights into the initiative's efficacy and suggest policy recommendations for fostering a more inclusive and sustainable startup ecosystem in India.

Key Schemes and Initiatives for Startups

1. Startup India :

Launched on January 16, 2016, Startup India is a flagship initiative by the Government of India aimed at fostering innovation and building a robust startup ecosystem. The primary goal is to stimulate economic growth and create employment opportunities on a large scale. By providing comprehensive support, the initiative encourages innovation, promotes entrepreneurship, and enables startups to scale effectively.

The initiative offers a range of benefits, including tax exemptions, simplified compliance, funding assistance, and incubation support. It also encourages industry-academia partnerships to nurture entrepreneurial talent. These measures have positioned India as one of the leading startup ecosystems in the world.

Progress and Impact :

- **Startup Growth :** DPIIT-recognised startups have grown from 502 in 2016 to 1,57,706 as of December 31, 2024.
- **Job Creation :** Startups have generated over 17.28 lakh direct jobs, with the IT Services sector leading, followed by Healthcare & Lifesciences and Professional & Commercial Services.
- **Women-Led Startups :** As of December 31, 2024, 75,935 recognised startups reported having at least one woman director, reflecting the increasing participation of women entrepreneurs.
- **Ease of Doing Business & Tax Benefits :** Simplified compliance procedures, self-certification, and three-year tax exemptions have enhanced the operational environment for startups.

2. STARTUP INDIA SEED FUND SCHEME (SISFS)

Launched in 2021 with a corpus of ₹945 crore, the Startup India Seed Fund Scheme (SISFS) supports early-stage startups in their development journey. The scheme provides financial assistance for proof of concept, prototype development, product trials, market entry, and commercialisation. Fund allocations are managed by the Experts Advisory Committee (EAC), which evaluates and selects incubators for further disbursement.

Progress and Impact :

- **Incubators Supported:** 213 incubators approved as of December 2024.

- **Funding Support:** 2,622 startups received a total of ₹467.75 crore in funding.

3. Fund of Funds for Startups (FFS) Scheme

The Fund of Funds for Startups (FFS) was introduced in June 2016 with a corpus of ₹10,000 crore to enhance domestic capital access for startups. Managed by SIDBI, the FFS scheme invests in SEBI-registered Alternative Investment Funds (AIFs), which subsequently provide equity funding to startups.

Progress and Impact :

- **Capital Commitments:** DPIIT committed ₹6,886 crore to SIDBI, and SIDBI further committed ₹11,687 crore to AIFs.
- **Startup Funding:** ₹21,276 crore was invested in 1,173 startups under the scheme.

4. Credit Guarantee Scheme for Startups (CGSS)

The Credit Guarantee Scheme for Startups (CGSS) offers credit guarantees for loans provided by Scheduled Commercial Banks, NBFCs, and Venture Debt Funds to DPIIT-recognised startups. Implemented by the National Credit Guarantee Trustee Company Limited (NCGTC), the scheme facilitates easier access to credit.

Progress and Impact :

- **Guaranteed Loans:** As of January 3, 2025, the scheme has guaranteed 260 loans worth ₹604.16 crore for 209 startups.
- **Women-Led Startups:** ₹27.04 crore allocated to 17 women-led startups.

5. Other Notable Schemes and Initiatives

a. Atal Innovation Mission (AIM)

Launched in 2016 by NITI Aayog, AIM promotes innovation and entrepreneurship through various programs. Key components include Atal Tinkering Labs for school-level innovation, Atal Incubation Centres for startup support, and Atal Community Innovation Centres for underserved regions. The Atal New India Challenges encourage the development of impactful products and services.

Progress and Impact :

- 10,000 Atal Tinkering Labs established across schools in India.
- 3,556 startups incubated in 72 Atal Incubation Centres, generating 41,965 jobs as of December 18, 2024.

b. MeitY Startup Hub (MSH)

India's vibrant tech startup ecosystem, comprising over 30,000 startups, ranks as the third largest globally. The MeitY Startup Hub (MSH) serves as a centralized platform to support innovation and economic growth by connecting startups with key stakeholders. MSH also fosters collaboration among incubators, Centres of Excellence, and other government-backed entities.

Progress and Impact:

- 5,310+ startups, 495+ incubators, and 328+ labs are part of MSH.

c. Capacity Building and Handholding

To enhance regional startup ecosystems, capacity-building workshops are held throughout the year, particularly in non-metro areas, under the States’ Startup Ranking framework. These workshops offer specialized mentorship and incubation support for local entrepreneurs.

d. Outreach and Awareness

The government conducts nationwide outreach campaigns to inspire and support budding entrepreneurs. These efforts include funding assistance, incubation opportunities, mentorship, and networking events in collaboration with State and UT administrations. Platforms like startup showcases provide valuable opportunities for startups to pitch their ideas to investors.

e. Ecosystem Development Events and Programmes

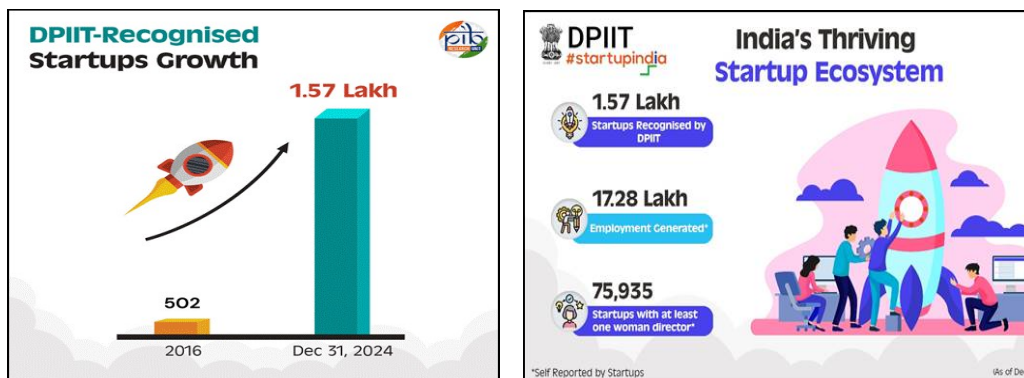
National-level events like **Startup Mahakumbh** serve as platforms to foster innovation, featuring panel discussions, networking sessions, and investment opportunities. Programs like **ASCEND workshops** focus on supporting startups in North Eastern States, while the **Startup India Innovation Week** celebrates entrepreneurship annually.

f. International Exposure and Linkages

India's G20 Presidency institutionalized the **Startup20 Engagement Group** to promote global collaboration. Through government partnerships, participation in global forums, and hosting international events, the country has strengthened its cross-border startup ecosystem.

g. BHASKAR: Empowering India's Startup Ecosystem

Launched in September 2024 under the Startup India program, the **Bharat Startup Knowledge Access Registry (BHASKAR)** platform connects startups with investors, mentors, service providers, and government bodies. It facilitates streamlined interactions, fostering innovation and collaboration.



Source: <https://pib.gov.in>

DISCUSSION :

The Startup India Initiative, launched in 2016, has played a pivotal role in fostering innovation, entrepreneurship, and job creation across various sectors in India. Over the past eight years, numerous government schemes have provided financial support, incubation, and mentorship to budding entrepreneurs. Despite its successes, certain challenges remain in achieving inclusive growth and ensuring equitable support across regions and demographics.

The growth in the number of DPIIT-recognized startups from 502 in 2016 to over 1.57 lakh by 2024 reflects the initiative's positive impact on the entrepreneurial ecosystem. Additionally, schemes like the Fund of Funds for Startups (FFS) and Startup India Seed Fund Scheme (SISFS) have provided crucial financial assistance, catalyzing investments worth over ₹21,276 crore. However, the commitment of only 31% of the declared budget under FFS and limited disbursement to startups indicate room for further optimization in fund allocation.

Women-led startups constitute a significant 48% of the recognized startups, highlighting a positive shift toward gender inclusivity. Nevertheless, challenges like limited access to mentorship, gender biases, and insufficient representation in leadership roles remain. Furthermore, geographical disparities persist, with urban regions benefitting disproportionately compared to semi-urban and rural areas.

Regulatory simplifications and tax exemptions have enhanced the ease of doing business, encouraging more startups to formalize their operations. Initiatives like the Atal Innovation Mission (AIM) and MeitY Startup Hub (MSH) have significantly contributed to capacity building and technological advancements. However, there is still a need for streamlined regulations and enhanced implementation of credit guarantee schemes to support startups in scaling their businesses.

FINDINGS :

- 1. Positive Growth:** The Startup India Initiative has led to a remarkable increase in the number of startups, with over 17.28 lakh direct jobs created by more than 1.17 lakh DPIIT-recognized startups as of 2024. The initiative has significantly contributed to employment generation and entrepreneurship.
- 2. Sectoral Impact:** Startups in sectors like IT Services (18%), Healthcare & Lifesciences (11%), and Fintech (7%) have shown the most substantial growth. Emerging sectors like Agritech and Clean Energy are also gaining momentum.
- 3. Financial Support Gaps:** The Fund of Funds for Startups (FFS), with a corpus of ₹10,000 crore, has disbursed only ₹7,200 crore as of 2024. Limited utilization and stringent eligibility criteria have restricted financial support to startups in need.
- 4. Gender Inclusivity:** Notably, 48% of DPIIT-recognized startups have at least one woman director, indicating an increase in women's participation in entrepreneurship.
- 5. Regional Disparities:** While 64% of the recognized startups are concentrated in metropolitan areas, rural and semi-urban regions remain underserved. States like Maharashtra (15%), Karnataka (12%), and Delhi (10%) lead in startup growth.
- 6. Credit Accessibility:** The Credit Guarantee Scheme for Startups (CGSS) has supported only 209 startups with a total loan disbursement of ₹1,600 crore by 2025, reflecting limited accessibility.
- 7. Capacity Building:** Programs like the Atal Incubation Centres (AIC) and the Startup India Seed Fund Scheme (SISFS) have supported 500+ incubators and provided funding to 1,000+ startups. However, further regional expansion is necessary to ensure equitable growth.
- 8. International Exposure:** Participation in global platforms like the G20 Startup20 Engagement Group has facilitated international collaborations and knowledge exchange, fostering cross-border innovation.

SUGGESTIONS

- 1. Optimized Fund Allocation:** The government should ensure the accelerated disbursement of funds under the FFS by introducing simplified processes and real-time monitoring mechanisms to ensure timely financial support.
- 2. Inclusive Financial Support:** Expand the reach of the CGSS by relaxing eligibility norms, reducing documentation requirements, and encouraging participation from private financial institutions.
- 3. Enhanced Regional Support:** Establish more incubation centres and innovation hubs in tier-2 and tier-3 cities to bridge the regional entrepreneurship gap. Incentivize investments in underserved regions.
- 4. Targeted Mentorship Programs:** Develop robust mentorship networks with successful entrepreneurs and industry leaders, particularly focusing on supporting women-led and minority-owned startups.
- 5. Policy Reforms:** Streamline regulatory processes further by introducing a single-window clearance system, reducing compliance burdens, and expediting startup registrations.
- 6. Monitoring and Evaluation:** Implement an AI-powered monitoring system to track the effectiveness of schemes like FFS, CGSS, and SISFS. Publish regular reports for transparency and policy adjustments.
- 7. Promoting Sector-Specific Growth:** Provide sector-specific grants and incentives in high-impact sectors like Agritech, Clean Energy, and Healthtech. Establish industry-academia collaborations for innovation.
- 8. International Collaboration:** Strengthen global partnerships through participation in international startup summits and government-to-government initiatives. Facilitate cross-border investments and joint research ventures.

Conclusion :

The Startup India Initiative has significantly transformed the entrepreneurial landscape in India since its inception in 2016. With the implementation of various schemes and initiatives, the country has witnessed substantial growth in the number of recognized startups, job creation, and sectoral diversification. The increase in DPIIT-recognized startups from 502 in 2016 to over 1.57 lakh by 2024 highlights the initiative's effectiveness in promoting entrepreneurship and innovation. Additionally, the establishment of incubation centers, provision of seed funding, and simplified regulatory frameworks have contributed to a more supportive ecosystem for startups.

Moreover, the initiative has facilitated significant employment generation, with over 17.28 lakh direct jobs created across multiple sectors, particularly in IT services, healthcare, and financial services. Enhanced participation of women entrepreneurs, as evidenced by the presence of at least one woman director in 75,935 recognized startups, is a noteworthy achievement in promoting gender inclusivity.

Despite these accomplishments, challenges remain. Financial support under schemes like the Fund of Funds for Startups (FFS) and the Credit Guarantee Scheme for Startups (CGSS) has been limited, with many startups still struggling to secure adequate funding. Additionally,

regional disparities persist, with urban centers dominating the startup landscape while rural and semi-urban areas lag. The representation of marginalized and minority groups in the startup ecosystem also needs further attention.

To address these challenges, it is recommended that the government enhances financial support through better utilization of funds and expands mentorship and incubation networks to underserved regions. Strengthening collaboration between academia, industry, and startups can further drive innovation and skill development. Additionally, introducing targeted programs to support women entrepreneurs and startups from marginalized communities will ensure a more inclusive and equitable entrepreneurial ecosystem.

In conclusion, while the Startup India Initiative has made remarkable progress in fostering entrepreneurial growth and contributing to the Indian economy, sustained efforts and policy enhancements are essential for its long-term success. By addressing existing challenges and fostering an inclusive ecosystem, the initiative can continue to empower startups, drive innovation, and generate employment, positioning India as a global leader in entrepreneurship.

In the coming years, startups in India are expected to face growing challenges and competition at both domestic and international levels. The global startup landscape is evolving rapidly, with intensified pressure from well-funded international players and disruptive technological advancements. Within India, sectoral saturation and the increasing presence of large corporations in areas traditionally driven by startups could further heighten competition. To survive and achieve sustainable growth, startups will need to prioritize continuous innovation, develop resilient business models, adopt emerging technologies, and strengthen their global presence. Success will depend on enhanced collaboration with international partners, strategic policy support, and sustained investment in capacity building to ensure Indian startups remain competitive and emerge as leaders in the global entrepreneurial ecosystem.

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WOMEN ENTREPRENEURS IN INDIA : CHALLENGES AND OBSTACLES

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➤ ABSTRACT :

Women are increasingly working outside of the home. Previously limited to lifting loads, they now have significant responsibilities and influence enterprise choices and strategy. Homemakers have successfully transitioned from low-paying jobs to self-employment, small- scale industries, non traditional sectors, and owning businesses. Today's Indian women aren't only embracing corporate life, but also pursuing "entrepreneurship" and "leadership" beyond traditional roles. With more liberal attitudes and legislation for women's education and labor, they now have more voice, choice, and access to new paths of livelihood and empowerment. This requires them to take ownership of their work. With more liberal attitudes and legislation for women's education and labor, they now have more voice, choice, and access to new avenues of livelihood and empowerment. They must take ownership of their resources and work with confidence and perseverance, rather than being subservient. In India, almost 98% of women-owned businesses are micro-enterprises. In Bengaluru, India's innovation center, only approximately 66 per cent of start-ups are owned by women. In this era of demographic shift, digital growth, and quick networking, it's important to examine the environmental, cultural, and other hurdles to women's entrepreneurship. This article explores how transitioning from 'women in development' to 'women-led development' affects their socioeconomic status and obstacles. The article explores various tactics for women following the implementation of the National Skill Development Policy and Mission.

Keywords : India, Entrepreneurship, Growth, Obstacles, And Women's Empowerment.

Introduction – "There is no limit to what we, as women, can accomplish."

- Michelle Obama (lawyer & author)

Women's contributions to India's economic development were first recognized during the country's independence war. Today's slogan is "Sab ka Sath; Sab ka Vikas". Excluding women from development scenarios does not lead to inclusive growth. Women's exclusion and marginalization hinder India's socioeconomic growth. Women make up 48% of the nation's population, and without them as a key force behind economic progress, it is unthinkable to imagine it (Colaco & Hans, 2018).

In light of the 12th Five-Year Plan's projection of inclusive growth as its strategic pillar, this is a significant issue. Women have begun to recognize their true role in governance as a result of the reservation's efforts to ensure social fairness. This has further resulted in "striving

for excellence" from equity. In a democratic, decentralized state, women's human resources are being used in planning and decision-making, something that was previously disallowed (Hegde and Hans, 2012). However, in nations like India, where the bulk of women remain on the periphery, gender development and planning require a concentrated shift (Hans, 2012). Women's economic empowerment is a crucial prerequisite for their empowerment. In defiance of centuries-old custom, Indian women today have not only accepted corporate life but have also started to transition from corporate careers into "entrepreneurship" and "leadership." In order to improve women's status and make use of half of the human resource pool, women must engage in economic activities. The Indian constitution guarantees men and women equal status without regard to gender, allowing women to pursue any career or launch a business like their male counterparts. Women have been recognized for their abilities in a variety of fields, including politics, diplomacy, law, education, medical, engineering, and administration. However, they have yet to be sustained in the field of entrepreneurship due to several obstacles and difficulties. Since women's economic standing is now recognized as a gauge of societal development, it is critical that barriers to women's entrepreneurship be removed. This calls on the government, policymakers, financial institutions, society, and the family to remove barriers that prevent women's business acumen from flourishing. Women's entrepreneurial endeavours will significantly advance economic empowerment. It is also essential to the growth and sustainability of any country's economy.

BACKGROUND OF THE STUDY :

Since the 1990s, the new growth concept has been gender development. The development of women was given special consideration, leading to the creation of new development indices including the Gender Empowerment Measure and the Gender Inequality Index, in addition to being a part of the Human Development Index. Women's contributions to entrepreneurship and social capital were evident in the rise in female employment, education, and self-help group formation, as well as in the expansion of corporate positions. Nonetheless, micro businesses still account for 98% of women-owned businesses in India. Merely 6% of start-ups in Bengaluru, the innovation hub of India, are owned by women. Women continue to work long hours, have additional responsibilities, and hold the lowest-paying positions. She quietly performs many unappreciated tasks. Changing women's status in society and holding them equally accountable for the welfare of the social order is the best approach to address women's issues. Women's empowerment and female entrepreneurship are the only ways to do this.

➤ OBJECTIVES OF THE STUDY :

- 1) Analyze the elements that contribute to the rise of female entrepreneurs in India.
- 2) To investigate the obstacles faced by Indian women entrepreneurs.

➤ RESEARCH METHODOLOGY -

The material gathered from secondary sources forms the basis of the current investigation. Books, periodicals, journals, and a variety of published and unpublished records are sources of secondary data.

Conceptual Framework -

Women's entrepreneurship has been linked to ideas like women's empowerment and emancipation, which are important components of improving women's quality of life in underdeveloped nations. There is currently a global trend toward an increasing number of female entrepreneurs. Over 25% of all businesses in developed economies are owned by women. Different push and pull variables influence women's business engagement; they are "pushed" rather than "pulled" into business ownership or the other way around. However, in the present era, it is noted that women voluntarily choose self-employment, particularly younger women. As business owners, women also help to reduce poverty, encourage entrepreneurial endeavors, and quicken the pace of economic expansion. The revival of entrepreneurship is urgently needed, with a focus on educating women from all walks of life, raising awareness and consciousness among them to excel in the business world, and helping them realize their potential to contribute to the economy and industry as a whole (Arunchellammal, 2014).

Entrepreneurship–

A key component of both industrial and human development—both of which are necessary for economic growth—is entrepreneurship. Ideation, initiation / imitation, risk-taking and uncertainty-bearing, and invention are all components of entrepreneurship. It is regarded as a critical component in contemporary production theory. Globally, entrepreneurship is recognized as a measure of progress. Women's entrepreneurship and empowerment are the main topics of recent research. Approximately 70 to 80 per cent of entrepreneurs worldwide are men. Nonetheless, there is growing interest in the idea that women are starting their own businesses. One sign is that more women are working for themselves in a number of developing nations (Kurunji and Magesh, 2016).

➤ WOMEN ENTREPRENEURSHIP :

Concerning women's empowerment and the advancement of the country, women entrepreneurship is one of the new issues. Through their entry into a variety of professions, women have been successfully escaping the confines of their homes in recent years. With the evolving position and status of women in society, the hidden potential of women as entrepreneurs is progressively shifting; they are becoming more intelligent and capable businesswomen. Women's entrepreneurship is one of the newer aspects of the nation's economic growth that supports socioeconomic development. According to Goyal and Prakash (2011), women entrepreneurs are any woman or group of women who start, plan, and run a business. Women entrepreneurs are classified by the Indian government as businesses that are owned and run by women, have a minimum financial stake of 51% of the capital, and provide at least 51% of the jobs created by the business to women. It is claimed that an educated woman leads an educated household. Similarly, since it employs many people in addition to the entrepreneur, entrepreneurship is essential to the country's economic viability (Sowjanya, Hans, and Rao, 2015). Women who are entrepreneurs are more financially independent and have higher self-esteem. India has a great deal of potential for entrepreneurship. According to Deepika and Hans (2011), women's participation in economic activities is characterized by

a low percentage of labour participation, a disproportionate amount of unorganized sector employment, and employment in lower-skilled positions. Women entrepreneurs demonstrate a high internal center of control and achievement, as well as high levels of self-motivation and self-direction. According to research, female entrepreneurs have particular traits that foster their creativity and lead to the development of novel concepts and methods of operation (Ansari, 2016). Women are therefore a vital force for the growth of entrepreneurship, presenting both opportunities and difficulties.

Factors and the Growth of Women Entrepreneurship :

India's post-independence development issues and trends demonstrate that women's entrepreneurship has been a sign of equality and gender development. If education could make "knowing" more accessible, then entrepreneurship may generate or offer chances to do things more effectively.

The following factors affect women entrepreneurs :

Despite the numerous challenges that Indian women face, they remain inspired to be proactive and entrepreneurial in their thinking and endeavors. To argue that their motivational attitude is reinforcing from self-actualization to a drive for identity— both in learning and doing things—would not be an exaggeration. Women professionals assume a dual role with responsibilities for both the home and the workplace, and they must balance the demands of both roles. They also bear an all-encompassing task. Women do economically productive work and receive compensation, but their salaries are typically lower than those of their male counterparts. This is because women's labor is still perceived as an adjunct to men's. Entrepreneurial women are known for their strong desire to make a positive impact and their ability to contribute in both social and familial contexts. Since globalization, women have become more conscious of their identities, rights, and privileges as well as the conditions of their workplaces. The opportunities and problems facing women in the current period are growing so quickly that they are becoming job producers rather than job seekers. In India, women's entry into the workforce may be traced back to an expansion of their culinary skills, which often include making butter, pickles, papad, sweets, pottery, weaving, and metalwork. As education grew, women gradually moved into other industries including teaching, nursing, banking, and information technology, among others.

Entrepreneurship Growth Of Women -

Women's entry into the workforce was accompanied by notable increases in productivity and economic growth. Research shows that the increase in the GDP in 2012 was caused by a rise in the proportion of women in the workforce since just the 1980s. Even while there were more women looking for and landing jobs, their involvement as business owners was inconsistent. Because fewer women started their own businesses, their potential to contribute to innovation, job creation, and economic growth was not realized. Unlocking the potential of female entrepreneurs typically has a significant impact on a nation's economy. Women's empowerment is also being accelerated by their roles as team leaders, business executives,

innovators, etc. (B. Kavitha & Hans, 2018). Over the decades following independence, women entrepreneurs in India have fallen into a variety of categories. The first female entrepreneurs were individuals who started and ran their own business in the 1950s when there were no males available to generate revenue.

In order to seize control of the company her husband had left, the second set had to have a great deal of guts to overcome the social maps and code; else, her family would suffer. Women began launching modest, one-woman businesses at home and from home in the 1960s as a means of self-employment and participation. Women in the 1970s created new opportunities and had goals and objectives for working for themselves and creating jobs.

Women were increasingly seeking highly advanced professional and technological education in the 1980s. The twenty-first century is the era of financial institutions, IT, and telecommunications. Because of their proficiency in each of these fields, women have become a formidable force. Over the past six years or more, we have consistently witnessed a wide range of company concepts being developed by women. This is not to suggest that Indian women entrepreneurs are unheard of, nor can we assert with confidence that they are the norm. Given that India is home to one of the biggest and oldest civilizations on earth, it can be said that women entrepreneurs there continue to advance and produce some fantastic work—albeit under certain "conditions"! The number of start-up concepts headed by women has increased since late 2007.

INDIAN WOMEN ENTREPRENEURS :

Among female entrepreneurs, the following names are noteworthy :

Jyoti Nayak (President, Shri Mahila Griha Udyog Lijjat Papad) ; Indra Nooyi (Chairman and CFO, PepsiCo.); Naina Lal Kidwai (Group General Manager & Country Head – HSBC, India); Kiran Mazumdar Shaw (Founder Chairman and Managing Director, Biocon Limited); Chanda Kochar (MD & CEO – ICICI Bank); Vaidya Manohar Chhabria (Chairman, Jumbo Group); Neelam Dhawan (Managing Director, Microsoft India); Indu Jain (Former Chairperson, Times Group); Simone Tata (Former Chairperson, Lakme & Current Chairperson, Trent Limited); Neelam Dhawan (MD, HP India); Sulajja Firodia Motwani (Joint Managing Director, Kinetic Motor); Priya Paul (Chairperson, Apeejay Park Hotels); Mallika Srinivasan (Director, Tractor and Farm Equipment); Ravina Raj Kohli (Founder & Executive Director, Job Corp); Ekta Kapoor, who is also known as the "Dailysoap queen," Ritu Kumar, a fashion designer; Shahnaz Hussain, the CEO of Shahnaz Herbals Inc.; and Balaji Tele Films, the creative director.

Nonetheless, the percentage of businesses run by women is marginally higher in rural than in metropolitan areas. (see Table1).

Table 1 : Percentage Distribution of Enterprises by Gender of Owner in Rural and Urban Areas

AREA	FEMALE	MALE
Rural	15.27	84.73
Urban	12.45	87.55
All	13.72	86.28

Source : MSME Annual Report 2011 - 12, Ministry of MSME, Government of India.

According to gender-based entrepreneurial research, as shown in Table 1, the proportion of female entrepreneurs is lower than that of male entrepreneurs. When it comes to the rural-urban divide, there are more rural women entrepreneurs than urban ones.

Obstacles and Difficulties in Women's Empowerment :

Women are naturally adept at multitasking, which is seen as a crucial component of modern management. However, because they are women and their labour in the informal sector is sometimes concealed, women are frequently overlooked and underappreciated as employees. Women's labour and contributions to the family, community, and economy are consistently underappreciated, particularly when they work as paid domestic helpers, home-based employees, or in the family company (Jain, 2016).

Women have historically been inexpensive, readily available, and used as a resource. But instead, the world needs to be convinced that women are a valuable resource. In both good and bad times, women are not always the ones who absorb the shock. Economically women are not treated on par with men; this is also due to the patriarchal- male dominant structure of the family system existing in the country. There is an urgent call to improve women's economic status as they form fundamental to the process of economic development of the country. The challenge for creating suitable employment opportunities for the ongoing youth bulge is likely to accumulate sharply in future and is much more daunting for females, who, unlike most of males, are unable to migrate freely in search of jobs due to the patriarchal nature of the society (Sharma, 2015). Indian women have significant challenges as they strive for advancement and equality within the societal framework. Women are excluded from possibilities in every field, including work, education, health, information and technology, access to productive resources, housing.

The following are some of the barriers that prevent women from starting their own businesses:

- Familyties
- Gender imbalance in a male-dominated society
- Financial limitations due to a lack of working capital
- The gendering of business; socio cultural impediments
- Limited access to education
- Violence against women
- Lack of mobility
- Fierce competition
- Low risk tolerance
- Commitments and responsibilities to one's family
- Inaccessibility to information ; lack of training
- Ignorance of options
- A lack of role models

GOVERNMENT POLICY INITIATIVES :

Since the middle of the 2000s, the Women's Entrepreneurship Development (ILO WED) program has supported and empowered women entrepreneurs in developing nations as they

launch and grow their enterprises. Since independence, the government of India has made the advancement of women a strategic priority. The National Science & technological Entrepreneurship Board (NSTEDB), established in 1982 by the Department of Science and Education, was a trailblazing government initiative to foster entrepreneurship via technological education (Desikan, 2016). Institutions for management education as well as training and development for entrepreneurs have reinforced this endeavour. The Indian government offers a number of programs for women that are run by several ministries and departments.

Among the mare :

- Entrepreneurial Development Programme (EDP)
 - Pradhan Mantri Mjudra Yojana
 - Management Development Programmes
 - Women's Development Corporations (WDCs)
 - Marketing of Non-Farm Products of Rural Women (MAHIMA)
 - Assistance to Rural Women in Non-Farm Development (ARWIND) schemes
 - Trade Related Entrepreneurship Assistance and Development (TREAD)
 - Working Women's Forum
 - Indira Mahila Yojana
 - Indira Mahila Kendra
 - Mahila Samiti Yojana
 - Mahila Vikas Nidhi
 - Micro Credit Scheme
 - Rashtriya Mahila Kosh
 - SIDBI's Mahila Udyam Nidhi
 - Mahila Vikas Nidhi
 - SBI's Stree Shakti Scheme
 - NGO's Credit Schemes
 - Micro & Small Enterprises Cluster Development
 - Programmes (MSE-CDP), and soon.
 - Ladki Bahin Yojana – Maharashtra Government
-
- We have various governmental, private, national, state-level, and local initiatives for women entrepreneurship and empowerment-
 - Stree Shakti Programme 2000-01 of Karnataka Government
 - Priyadarshini Project – a programme for Rural Women Empowerment and Livelihood in Mid Gangetic Plains
 - Start-up India ; FIWE : The Federation of Indian Women Entrepreneurs (1993)
 - NWEA: The Noida Women's Entrepreneur Association Retail giant Walmart's

collabouration with Bharti, in launching a forum in Chandigarh to help women in start-up issues

- Mahila Jnana Vikasa Training Institute (2009), Dharwad –run by Shree Kshetra Dharmasthala Rural Development Project (SKRDP) and so on.

➤ **STRATEGIES NEED TO BE ADOPTED:**

The most reliable method to support economic growth and general development is to invest in women's "capabilities" and provide them the freedom to pursue their "choices" and "opportunities." To empower women, the first step is to eradicate illiteracy. Even though it is steadily increasing, India's female literacy rate is still lower than its male counterpart. Early marriage and childbirth are more common in households with a lower socio economic position as a result. Promoting gender equality and empowering women begins with universal education and the eradication of gender inequality in education. Education is what fuels the desire for self-actualization, hard work, independence, and success (Rita and Rajasekar, 2012). women's growth (Nathan, 2015).

The following are some common actions that are necessary to support female entrepreneurs :

- Developing the entrepreneurial spirit through "learning by doing" experiences to advance women from housewives to company managers
- A wide spectrum of people should participate in an awareness program aimed at educating women about the different sectors and business opportunities.
- In order to prepare women to adapt to the changing times by embracing the newest technological advantages that enable them to excel in the decision-making process, efforts should be made to improve the standards of education for women and systematize vocational training programs to develop professional competencies in managerial skills.
- Organize local, national, and international trade shows and industrial exhibits to assist women in fostering connections with other female business owners.
- More working capital support should be offered by financial institutions to both small and large businesses. Soft loans and subsidies should be made available to businesswomen in order to encourage them to pursue industrial endeavours.
- It should be a top priority to provide microcredit to local women entrepreneurs through Self-Help Groups.
- Therefore, entrepreneurship is an economic activity that has a significant impact on the state of the economy. India has a wealth of natural and people resources, thus there is room for entrepreneurship to flourish there, especially among women entrepreneurs.

➤ **CONCLUSION :**

There is a lot of room for women to overcome their limitations, and there are numerous chances to succeed as an investor and an entrepreneur. Women are incredibly creative and entrepreneurial, and they can be anyone they want to be. To meet these issues head-on, new policies, processes, and techniques must be implemented. The most important factor influencing a nation's social and economic development is education. Greater economic production, higher employment rates, and improved social structure are all correlated with

increased literacy levels. Women's progress and performance in social involvement and business will be determined by their access to information and knowledge. Can society as a whole stay behind as the economy becomes more open than it was in the past? In light of the current demographic shift, this is an important problem to address. Women entrepreneurs need to be appropriately shaped with entrepreneurial qualities and abilities to adapt to shifting trends, contend with international marketplaces, and be competent enough to continue and pursue greatness in the entrepreneurial sphere. The state of " women in development, "as opposed to just" development of women" or " development for women," will then be a noteworthy result.

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**THE PSYCHOLOGY OF CONSUMER BEHAVIOUR :
UNDERSTANDING MOTIVATIONS AND PREFERENCES WITH THE HELP OF
THEORIES.**

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➤ **ABSTRACT :**

This research paper explores into the psychology of consumer behaviour, exploring the underlying motivations and preferences that drive purchasing decisions. By examining psychological theories, the paper aims to provide a comprehensive understanding of the factors influencing consumer behaviour. The study highlights the roles of cognitive processes, emotional responses, social influences, and cultural factors in shaping consumer choices.

This research paper explores the complicated psychology behind consumer behaviour, focusing on the motivations and preferences that drive purchasing decisions. By integrating psychological theories such as Maslow's Hierarchy of Needs, the Theory of Planned Behaviour and the Elaboration Likelihood Model, the study provides a theoretical framework for understanding consumer actions. Through a theoretical/ exploratory approach the research examines the cognitive, emotional, social, and cultural factors influencing consumer choices. The findings reveal that consumer behaviour is shaped by a complex interplay of these factors, highlighting the importance for marketers to consider diverse psychological influences when designing effective marketing strategies. This comprehensive understanding of consumer psychology aims to enhance marketing practices and improve consumer satisfaction.

Keywords: Motivation, Preference, Psychology, Theory, Marketing, Consumer Behaviour etc.

➤ **INTRODUCTION:**

The intricate study of consumer behaviour looks at how people choose which products and services to buy. Businesses trying to satisfy market demands and officials trying to move public opinion must both have a solid understanding of customer preferences and motivations. In an effort to clarify the complex network of variables influencing how and why customers make purchases, this research investigates the psychological drivers of consumer behaviour.

The dynamic and diverse discipline of consumer behaviour aims to comprehend how people choose which products and services to buy. This knowledge is essential for companies trying to satisfy consumer needs and for legislators trying to move public opinion. The complex psychology that shapes preferences and motivations, influencing how and why customers make the purchases they do, is at the core of consumer behaviour. Numerous

elements, such as mental processes, emotional reactions, social influences and cultural contexts, affect the reasons for consumer behaviour.

Consumer perception, memory and decision-making regarding goods and services are all influenced by cognitive processes. Emotional reactions like joy, anxiety and nostalgia have a big influence on what people decide to buy. Social factors, such as family dynamics, peer pressure and the effect of social media are also very important in determining how consumers behave. Consumer preferences and buying patterns are also influenced by cultural elements such as shared values, customs and norms. Comprehending these psychological factors is crucial for developing successful marketing plans as well as for encouraging customer loyalty and happiness. Businesses can better anticipate how consumers will respond to marketing campaigns, customize their products to fit certain needs and forge closer bonds with their target market by utilizing psychological insights. The psychology of consumer behaviour is examined in this research paper, along with important theories that provide insight into the variables affecting customer choices. The goal of the study is to offer a thorough understanding of the preferences and reasons influencing customer-behaviour.

➤ **RESEARCH PROBLEM:**

1. Identify factors affecting buying behaviour.
2. Investigating the factors contributing to build brand image.
3. Effect of various factors affecting in consumer's mind.

➤ **OBJECTIVE OF RESEARCH:**

1. To know about Consumer behaviour.
2. To know about theories.
3. To promote implementation of theories which will bring effective marketing strategy?
4. To stimulate discussion, research and development regarding consumer preferences.

➤ **THEORIES OF MOTIVATIONS:**

The consumer behaviour encompasses a wide range of theories and models from psychology, marketing and economics each providing valuable insights into the factors influencing consumer decisions. This section reviews key theories that form the foundation for understanding consumer behaviour.

1. **Maslow's Hierarchy of Needs:**

Abraham Maslow created the five-tiered Maslow's Hierarchy of Wants model of human motivation in psychology in 1943. These requirements are displayed as pyramidal levels arranged hierarchically. In addition to fundamental physiological necessities like food and shelter, the demands also encompass more sophisticated psychological desires like self-actualization and self-esteem. According to Maslow's hypothesis, people are driven to meet their needs in a particular order, beginning with the most fundamental ones. Maslow's hierarchy states that a consumer's present location within the hierarchy influences their decision-making process. For example, a consumer who prioritizes physiological demands

could concentrate on necessities, whereas a self-actualizing consumer might look for products that inspire.

➤ **PHYSIOLOGICAL NEEDS:**

The most fundamental necessities for survival are physiological needs, which include food for existence, water for drinking, shelter for protection and sleep for bodily relaxation. These are the fundamental requirements for human survival. Without these necessities, no one could survive.

Needs for Safety:

After their basic requirements are satisfied, people look for stability, security and safety. Need for safety, such as having a home of our own, a pension, health, life, and vehicle insurance, among others. Security comes from safety needs and when people feel safe, they can think about other productive work.

Love and Belonging Needs:

Social ties, relationships and a feeling of belonging are the main topics of this level. Humans are sociable animals, as we well known. Normal people, in contrast to saints, cannot survive without relationships. We need someone with whom we can share our emotions, difficulties, and joys at every stage of life from conception to death.

Esteem Needs:

Respect, acknowledgment, and a feeling of achievement are things that people aspire to once our desire for love and belonging is met, we need other people's respect and recognition for our efforts.

Needs for Self-Actualization:

Reaching the highest level of the hierarchy entails pursuing personal development and reaching one's greatest potential. Because they are driven by the need for self-actualization, consumers at the top of the hierarchy look for goods and pursuits that promote personal development and fulfilment. At this point, all needs are met and the emphasis is on things other than wants and needs.

2. The Theory of Planned Behaviour:

In 1985, Icek Ajzen developed the Theory of Planned Behaviour (TPB), a theory that links concepts and actions. The TPB states that three factors attitudes toward the behaviour, perceptions of behavioural control and subjective norms may influence an individual's desire to engage in behaviour. An individual's attitudes are their positive or negative evaluations of partaking in a behaviour. Perceived social pressures to behave a specific way or not are known as subjective norms. "Perceived behavioural control" refers to an individual's perception of their ability to do behaviour. Forecast a variety of consumer behaviours including purchasing choices and health-related behaviours.

Attitude:

Favourable opinions about a brand or product have a significant impact on purchase intentions. Marketing campaigns that enhance consumer perceptions by highlighting benefits and positive experiences can increase sales.

Subjective Norms : Social influence has a big impact on consumer behaviour. Social media trends and recommendations from peers and influencers can have a big impact on purchasing decisions.

Perceived Behavioural Control: People are more likely to engage in behaviour when they feel in control of it. Accessible and easy-to-use products and services have higher adoption rates.

3. The Elaboration Likelihood Model (ELM):

In 1986, Richard Petty and John Cacioppo created the Elaboration Likelihood Model (ELM), which describes how consumers interpret persuasive information. According to the approach, there are two ways to persuade someone the central way and the peripheral way. The primary path entails giving careful, in-depth thought to the points put out, which results in a permanent shift in perspective. The peripheral route causes a transient shift in attitude through superficial processing based on outside stimuli, such as the presenter's attractiveness or the quantity of arguments made. The ELM offers insights into how various forms of marketing and advertising communications might affect customer behaviour by highlighting the significance of message relevance as well as the individual's motivation and information processing skills.

- **Central Route to Persuasion:**

High Elaboration: This approach entails evaluating the information's actual merits with care and deliberation. People who follow the centre route are driven and capable of critically analysing the arguments, which results in more permanent changes in attitude and behaviour prediction. Generally speaking, attitudes developed through the core route are more robust, more resistant to change and more accurate indicators of behaviour.

- **Peripheral Route to Persuasion:**

Low Elaboration: This approach emphasizes surface-level clues above the message's actual content. Attitudes are influenced by a variety of factors, including the source's attractiveness or credibility, the quantity of arguments made and other heuristic cues. Peripherally developed attitudes are typically weaker, less predictive, and more prone to change.

4. Cognitive Dissonance Theory:

By emphasizing the benefits of the product or service and offering reassuring information after a purchase, marketers can help consumers overcome cognitive dissonance. According to Leon Festinger's 1957 cognitive dissonance hypothesis, people feel psychologically uneasy when they have two or more opposing views, values, or attitudes. Post-buy dissonance is the term used to describe the discomfort that frequently follows a purchase choice in the context of consumer behaviour. Customers may alter their opinions or attitudes to lessen this dissonance since they have a tendency to seek consistency between their thoughts and actions.

Cognitive Dissonance : Cognitive dissonance is the psychological stress brought on by concurrently holding two or more opposing beliefs, attitudes, or behaviours. for example When someone emphasizes their health but smokes, dissonance occurs.

Reducing Dissonance : To alleviate the discomfort that cognitive dissonance produces, people employ a number of strategies to reduce it.

Change Behaviour : Adjusting activities to balance conflicting thought processes. For instance, quitting smoking to resolve the tension between smoking and health value.

Shift Cognition: Modifying the opposing perspective or attitude. For instance, persuading oneself that smoking has no risks.

Include New Thoughts : Presenting fresh ideas that resolve the dispute. Think about the fact that smoking reduces stress, which is beneficial to your health.

Reduce the Tension : Diminishing the importance of the competing viewpoints. For example, believing that smoking poses few health concerns.

Post-Decision Dissonance : This kind of dissonance happens after making a decision, especially when selecting between possibilities that are equally appealing after coming to an irrevocable choice.

Effort Justification : When people work hard to accomplish a goal, they often justify the effort by placing a higher value on the result. For instance, if someone invests a significant amount of time and money in a difficult course, they are likely to believe that the course is more valuable, which will help them justify the effort.

5. Social Influence and Conformity :

Consumer behaviour is significantly influenced by social factors. Solomon Asch showed how social pressure might influence an individual's behaviour in the 1950s with his conformity tests. Customers are frequently swayed by the actions and viewpoints of others, such as friends, family and social media influencers. This effect can take many different forms, such as social proof when people believe that other people's behaviour is appropriate in a particular circumstance. Knowing social influence enables marketers to develop tactics that use peer recommendations and social networks to influence consumer behaviour.

Social Influence:

The term "social influence" describes how people adjust their behaviour to fit the expectations of a social setting. It includes a range of methods by which the actual or perceived presence of others alters people's attitudes, beliefs or behaviours.

Conformity: Conformity is the act of aligning one's attitudes, beliefs and behaviours with those of others or with group norms. It entails altering one's behaviour to conform to a group's norms.

- **Normative conformity:** This occurs when people conform to fit in and gain social approval, often driven by the desire to be liked and accepted by the group.
- **Informational conformity:** This occurs when people conform because they believe the group has accurate information or expertise, particularly in ambiguous situations.

6. Cultural Aspects:

Consumer behaviour is significantly influenced by culture. Geert Hofstede's theory of cultural dimensions states that some of the key traits that distinguish different cultures are power distance, uncertainty avoidance and individualism versus collectivism. These cultural influences impact the attitudes, beliefs and behaviours of consumers. Customers in collectivist civilizations for example, might place a higher emphasis on family-friendly

products and community-based marketing appeals. Conversely, individualistic cultures may emphasize self-actualization and self-expression more, which could influence their selections for brands and products.

7. Emotion and Consumer Behaviour:

Emotions and Consumer Behaviour Emotions play a significant role in consumer behaviour, influencing choices and satisfaction following a purchase. Research by Bagozzi et al. (1999) and Pham (2004) demonstrates that emotions such as happiness, nostalgia and anxiety might affect buying decisions. Emotional appeals in advertising can create strong connections between consumers and brands, promoting positive word-of-mouth and brand loyalty. by better understanding the emotional factors that influence customer behaviour, marketers can craft messages that more profoundly connect with consumers and boost engagement and conversion rates. Many significant findings in the study of consumer behaviour psychology can be traced back to various psychological theories. These findings provide a more comprehensive understanding of the inclinations and driving forces behind consumer decision.

8. Freud's Psychoanalytic Theory:

In the late 19th and early 20th centuries, Sigmund Freud developed the Psychoanalytic Theory, one of the most important and controversial ideas in psychology. It emphasizes how important early experiences and unconscious processes are in shaping a person's identity and behaviour. The concept states that human conduct is driven by conflicts and unconscious urges that have their roots in early developmental stages.

Unconscious Motives:

A significant portion of consumer behaviour is driven by unconscious desires and motivations. Particularly sought-after are goods that play on these deep-rooted emotions, such as nostalgia or fantasy.

Id, Ego, and Superego:

People's purchasing decisions are influenced by the interactions between these three psychological concepts. The id seeks immediate fulfilment, the ego balances desires and reality and the superego align decisions with moral standards. Effective marketing strategies usually address all three elements to engage with customers.

Defence Mechanisms:

Consumers frequently use defence mechanisms like denial and rationalization to justify their purchases of luxury or non-essential goods. By fully comprehending these elements, marketers may better align their messaging with consumers self-perceptions.

➤ METHODOLOGY:

The present research is theoretical/ Exploratory in nature. Secondary data was collected from various sources such as books, journals, research articles etc.

➤ ANALYSIS:

The analysis is divided into several key areas:

- I. Cognitive Influences: Examining the ways in which consumers perceptions, memories and decision-making skills impact their purchases.
- II. Emotional Influences: Understanding how emotions especially happiness, fear and nostalgia, influence consumer decisions.

- III. Social influences: Analyzing the ways in which peer pressure, family and social media impact consumer behaviour.
- IV. Cultural Influences: Analyzing how a consumer's cultural background and values impact their preferences and purchasing habits.
- V. Mental Impacts: Reflexes and biases are frequently used by consumers while making purchasing decisions. The anchoring effect affects consumers judgment by making them concentrate on the first piece of information they are given, but the availability heuristic encourages customers to base their decisions on the information that is easily accessible to them.
- VI. Personality Elements: Consumer behaviour is significantly influenced by personality. For example, using advertising that makes the viewer feel good could make them more likely to buy something. But if it emphasizes possible risks or losses, fear-based marketing can also work.
- VII. Social Elements: Social traits have a big impact on how people behave as consumers. Word-of-mouth recommendations, social proof and the drive to fit in can all have an impact on people's purchasing decisions. These influences are amplified by social media users ability to share their thoughts and experiences.
- VIII. Cultural Impacts: Consumer preferences are influenced by cultural conventions and beliefs. Collectivist societies may value family-oriented items more than individualistic cultures, which may place greater emphasis on self-expression and personal accomplishment.

Applications in Marketing:

- **Targeted Marketing:** By using insights from psychological theories, marketers can develop programs that are specifically tailored to appeal to particular customer segments. Marketing efficacy can be increased by using customized message that speaks to the distinct interests and motivations of various groups.
- **Appeal to Emotions:** Advertising may build closer relationships with people by utilizing emotional triggers and unconscious wants. Positively charged branding and storytelling are especially effective.
- **Behavioural Interventions:** A framework for creating interventions that can affect consumer behaviour is offered by the Theory of Planned Behaviour. Behaviour change can be facilitated for instance, by encouraging positive attitudes, utilizing social norms, and increasing perceived control.

➤ CONCLUSION:

The results imply that a mix of cognitive, emotional, social and cultural elements affects consumer behaviour. In order to effectively reach their target audience, marketers must take these varied effects into account when creating campaigns and tactics. Improved customer satisfaction and more successful marketing strategies can result from an understanding of the psychology underlying consumer behaviour. The findings suggest that consumer behaviour is influenced by a variety of cognitive, emotional, social and cultural factors. To effectively reach their target audience, marketers must consider these several factors while developing campaigns and programs. Understanding the psychology behind consumer behaviour can

lead to better marketing strategies and increased customer satisfaction. From social and cultural elements to cognitive and emotional processes, these theories offer marketers useful knowledge for developing tactics that successfully meet consumer motives and preferences. This study aims to provide a thorough understanding of consumer behaviour by integrating multiple theoretical frameworks, which will improve customer satisfaction and encourage better marketing tactics. Maslow's Hierarchy of Needs emphasizes how consumer motivations have changed throughout time, moving from basic physiological needs to the pursuit of self-actualization. Where a customer sits in this hierarchy often influences their purchasing decisions, with lower level wants taking precedence and higher-level demands becoming more significant during periods of scarcity.

Understanding the unconscious forces that influence consumer behaviour is possible thanks to Freud's psychoanalytic theory. Deeply ingrained wants and internal conflicts might show up in purchase decisions due to the interaction of the id, ego, and superego as well as the impact of defence mechanisms. By using this knowledge, marketers can develop tactics that appeal to consumers unconscious motives and increase the efficacy of their ads. A paradigm for comprehending how attitudes, subjective norms and perceived behavioural control affect customers intents and behaviours is offered by the Theory of Planned Behaviour. This idea emphasizes how crucial personal agency and social influence are in determining consumer choices. Businesses can create focused interventions to change behaviours in a predictable way by identifying the elements that influence consumers intents.

Prospective investigations must persist in examining the convergence of these theories, integrating progressions in neuroscience and technology to comprehensively decipher the complexities of consumer decision-making procedures.

Furthermore, cross-cultural research can offer insightful information about how various cultural contexts affect consumer behaviour, improving the psychological theories universal applicability in marketing tactics. To sum up, the study of consumer behaviour psychology is a dynamic and diverse area that provides businesses, legislators and marketers with a wealth of knowledge. Stakeholders can improve their comprehension and forecasting of consumer behaviour by utilizing the theoretical frameworks covered in this paper. This will ultimately result in more successful marketing campaigns and higher levels of customer satisfaction.

➤ **SUGGESTIONS:**

1. Marketers and researchers can develop more effective strategies to influence and predict consumer behaviour across diverse contexts.
2. Creation of an Integration Framework:
Provide a thorough framework that illustrates the relationships between the Theory of Planned Behaviour, Maslow's Hierarchy of Needs, Freud's Psychoanalytic Theory, The Elaboration Likelihood Model and Cognitive Dissonance Theory. This can be used as a resource for both practical and scholarly uses.
3. Research on Consumer Segmentation:
Perform customer segmentation research using various psychological characteristics. Determine, for instance, the differences in the responses of customers with high and low degrees of cognitive dissonance to different marketing tactics.

4. Investigative Science:

Create tests to verify theories that you generate from the integrated model. Examine, for example, the effects of distinct advertising message types (peripheral vs. central) on consumers with varying degrees of conscious and unconscious attitudes and motivations.

5. InvestigativeFieldwork:

Conduct field research in actual surroundings to see how these theories interact in typical consumer settings. This may give the results greater ecological validity.

6. Consumer Processes for Making Decisions:

Examine how customers make decisions at various points during the purchasing process. Analyse, for example, how the integrated psychological constructs affect post-purchase behaviour, evaluation of alternatives, and initial exposure to a product.

7. Brand Adherence and Flipping Patterns:

Examine the effects of these theories' interactions on switching behaviour and brand loyalty. Recognize the elements that influence consumers' decisions to stick with a brand or go to a rival.

8. Effects of Economic Shifts and Crises:

Examine how these psychological theories interact with one another in the context of economic downturns, crises, and other external shocks.

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IMPACT OF SOCIAL MEDIA ON STUDENTS CONCENTRATION SPAN OF TIME AND REVIEW OF IKS IN NEW EDUCATION POLICY FOR THE HOLISTIC DEVELOPMENT OF STUDENTS.

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➤ ABSTRACT :

In this research paper I have studied the impact of social media on students concentration span of time because if we see everyone is so much obsessed with their phone, social media. In this modern era people cannot live without their phone. Social media is a platform where people can talk, see the variety of content like YouTube , Instagram, Facebook, skype, snapchat , telegram , Tik Tok etc.

Technology has growing fast in some years. Technology is very helpful and important part of our life but if we analyse that most of the students waste their precious time due to this reason their concentration span is decreasing. An average typical attention span of time of most of the students is about 10 to 15 minutes long so here I have studied the social media factor in students concentration span of time. also, in this research paper I have studied the review of IKS in NEP for the holistic development of students.

Indian knowledge system is based on Vedic literature, the Vedas and the Upanishads. Traditionally, there are references to 18 major vidyas, representing theoretical disciplines, and 64 kalas, which encompass applied or vocational skills and crafts. Among the 18 vidyas are the four Vedas, along with four subsidiary Vedas such as Ayurveda (medicine), Dhanurveda (weaponry), Gandharvaveda (music), and Silpa (architecture). Additionally, the list includes Purana, Nyaya, Mimamsa, Dharmasastra and Vedanga, which encompass the six auxiliary sciences comprising phonetics, grammar, metre, astronomy, ritual, and philology. These disciplines formed the foundation of the 18 sciences in ancient India.

The doctrine of action (Karma) occupies a very significant place in the Indian knowledge system and has evolved during the transition from ancient to modern education. The precious ancient knowledge should pass on to students of this era and they should be proud to learn this knowledge and it will be helpful for the holistic development of students.

KEYWORDS: Indian knowledge system, New education policy 2020, Vedic literature, social media, concentration span of time etc.

➤ INTRODUCTION :

The amount of time spent focusing on a task before getting sidetracked is known as attention span. Attention span was longer in youngsters than in children and old persons. In this modern era students span of concentration is very low due to technological applications

and gadgets. Some students cannot even read for a half an hour, either they can study from videos and take notes or they will take private tuitions and now a days most of our life is controlled by mobile phones. Students can scroll for hour an hour without even realising how the time has passed. Now a days social media is the biggest distraction of everyone's life.

Holistic Development is referred to as A person's overall growth in all domains—cognitive, emotional, physical and social. It recognizes that a person is more than their academic accomplishments and that a person's psychological and emotional growth is just as important in determining their future. In ancient times student holistic development was a primary aim. The learner had to leave the house and live with the teacher in a gurukul for the entire period of learning. Students learned more about custom, religion, dharma, truthfulness, discipline, self-reliance and more about nature and creation and they follow it for their entire life.

The Ministry of Education (MoE) established the Bhāratīya Jñāna Paramparā Vibhāga or Indian Knowledge Systems (IKS) Division in October 2020 at the AICTE Headquarters. As a guiding concept, the NEP-2020 acknowledges the rich legacy of ancient and everlasting Indian knowledge and thinking. The Jnan, Vignan and Jeevan Darshan knowledge systems of India have developed from experience, observation, experimentation and in-depth study.

Including IKS in the curriculum gives students a transdisciplinary more holistic view of the disciplines they study. Students critical thinking, creativity and problem-solving abilities can be developed through the NEP by including IKS, equipping them for the challenges of the twenty-first century by fusing conventional knowledge with cutting-edge teaching methods. The four Vedas, i.e., the Rigveda, Yajurveda, Samaveda and the Atharvaveda were configured through ideals, practices and conducts. The main purpose of this paper is to identify the concentration span of time of student and convey that IKS involvement in NEP is needed to develop in our current education system, adapting from the ancient education system to the modern education system in a robust way.

According to digital 2024 data: India There were 751.5 million internet users in India at start of 2024, when internet penetration stood at 52.4 %. Meanwhile, data published in the ad planning tools of top social media platforms indicates that there were 383.0 million users aged 18 and above using social media in India at the start of 2024, which was equivalent to 38.1% of the total population aged 18 and above at that time.

Data published in Meta's planning tools show that Instagram's potential ad reach in India increased by 133 million (+58.1), in Facebook messenger's potential ad reach in India increased by 4.1 million (+3.4%) and snapchat increased by 29 million (+16.5%) between January 2023 and January 2024. Influencers, colleges is using this platforms for advertising purpose because they know that most of the consumers they will get it from social media platforms only.

The three great fighters of the epic Mahabharata, Arjuna, Karna and Eklavya inspire people all around the world with their devotion to their masters and pursuit of archery supremacy. In the Swayamvar of Draupadi, An archer had to hit the eye of a fish maintained at the top of a pillar on a rotating stand with only one arrow and by only seeing the fish's reflection in the oil utensil stored at the base of the pillar in order to win the princess's hand. Even though it seemed impossible, all the powerful princes and kings were unable to hit the mark. Arjuna moved forward at the last moment taking care to take his position and hold the bow

and arrow. His attention was solely on the fish's eye, he was not distracted to anything he just knew his goal (the eye of fish) and that's how he got his princess. From this story we understand the power of concentration.

➤ **STUDENT :**

In this paper student is not only the one who goes to institute, college, school for learning and getting degree. Here the students refer to an individual recognised as learner, someone who is engaged in learning, pursue knowledge and skills, learning through experiences throughout the life.

New Education Policy 2020 :

The goal of the New Education Policy 2020 is to use education to advance inclusion and equity. NEP 2020, which is based on the tenets of the old Indian knowledge system with contemporary goals, is expected to revolutionize the nation's educational system by making it more innovative and comprehensive. The New Educational policy outlines a contemporary, forward-thinking goal to transform India's higher education system.

In an NEP 2020 it becomes more flexible with multiple entry and exit points, giving students new dynamic opportunities to learn at their preferred pace. NEP 2020 aims to integrate vocational training into higher education, with over 50% of students pursuing some form of vocational education by 2025. It also encourages greater institutional autonomy while pushing for multidisciplinary education. By 2030, all standalone professional educational institutions are expected to be multidisciplinary.

Holistic Development under NEP :

A holistic approach to education focuses on all facets of a student's development, including biological, cognitive, and social-emotional processes that influence and impact one another. The current model of holistic education, which aims to engage the learner's mind, body, and spirit, was proposed by Rudolph Steiner, John Dewey, and Maria Montessori. Holistic development is the social, emotional, physical, mental, and intellectual growth of an individual.

NEP 2020 places a strong emphasis on holistic learning and development. Its broad curriculum necessitates the use of a more experiential, integrated, and holistic pedagogy. It also calls for more interactive teaching and learning, with a greater emphasis on attaining learning outcomes toward competency-based education. Assessment tools must also be in line with the learning outcomes and capabilities to be attained in each course offered.

➤ **RESEARCH PROBLEM :**

1. Identify causes of student's low concentration span of time.
2. Investigating the factors contributing to distractions.
3. Effect of social media in our mind.
4. How can we utilise effectiveness of IKS in NEP.

➤ **OBJECTIVES :**

1. To know about IKS.
2. To know about modern era of student's concentration span of time.
3. To promote IKS implication in NEP which will bring efficient and effective education system.
4. To stimulate discussion, research and development regarding curriculum.
5. To understand the concentration span of time of modern era of students.

➤ **Methodology and Data collection :**

1. The present research paper is Exploratory in nature.
2. The sample is collected from 71 students below the age of 30.
3. The data is collected from questionnaire, Interview methods were used to collect primary data. Secondary data was collected from various sources such as published research papers and articles, journal books.

➤ **Factors affecting low concentration span of time :**

1. Poor sleep habits.
2. Nutrition deficiency.
3. Consumption of Junk food, processed food (High sugar and salt).
4. Stress of career, family& relationships, academics.
5. Lack of interest can also decrease concentration.
6. Mental and physical fatigue
7. Heat in the environment.
8. Uncomfortable seating
9. Multitasking and overburden of work etc.
10. Lack of physical exercise.
11. Lack of giving priority to personal preferences.

Any of the above factors can affect low concentration span of time and its may be different for anyone.

But I think the main distraction is now a days is technological advancement, social media addiction. Students can scroll hour an hour without being realising a time passed. Now a days, reels (typically vertical videos often under 60 seconds) addiction is increasing, fully attentively listened by everyone .There are 15 seconds, 30 seconds reels is also present. The age from one year old baby starts scrolling mobile and this is not their mistake. Parents give phone to babies when they cry and the child has learnt this from their mother's womb only.

Indian Knowledge System :

IKS teaches us how to ask questions, How? How much? Our thought process will be guided and reoriented by fundamental sutras. IKS establishes a new worldview based on the axiomatic beliefs that "Sarve Bhavantu SukhinaH" (may all be happy) and "Vasudhaiva Kutumbakam" (the entire cosmos is a family). The process of integration entails a basic introduction to IKS, its nature and structure, scope and history, the incorporation of basic IKS concepts into contemporary textbooks, the development of Indian Thought Models based on

existing IKS literature and their application to a variety of modern problem-solving techniques.

As we know about The largest Mahakumbh festival is an Open University of Indian knowledge system, not only a religious gathering. It gives people from all walks of life a chance to discover, comprehend, and accept important these gatherings inspire contemporary society while also preserving India's rich cultural legacy.

It is a singular synthesis of contemporary knowledge, science, spirituality, and Sanatan Gurukul traditions. It provides a picture of the coexistence of old and modern philosophies by harmonizing them. An Open University, this magnificent and beautiful event in the Sangam in Prayagraj exposes Indian knowledge, values, arts, culture, traditions, and spiritual essence to the world.

Choice based Education :

The New Education Policy 2020 is based on choice-based education. Student will get choice and they can choose their subject accordingly. This was needed the most because student can learn what they want to learn so that they will keenly be interested to get the knowledge and this will not be burden to their heads and students will study happily.

If you see the Topmost entrepreneurs, Businessman like Steve jobs, Mark Zukerberg, Bill gates, Mukesh Ambani are college dropouts from top universities not because they didn't want to study but they know their paths, they know their interest and that's how they choose success. Top players like Sachin Tendulkar, Virat Kohli they are also college dropouts and pursue their interest, they learn that skill and they succeed.

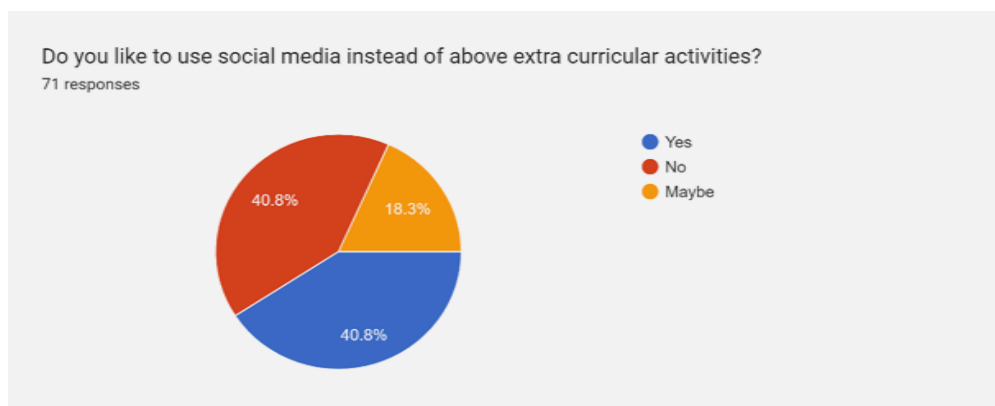
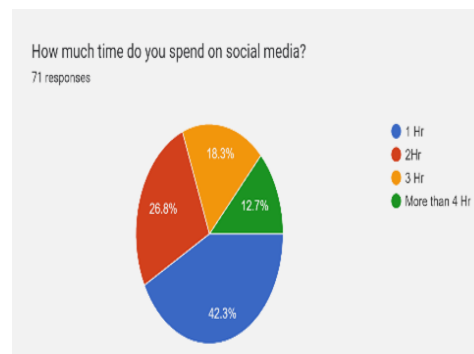
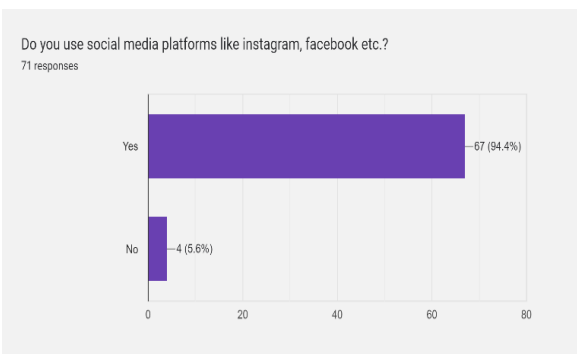
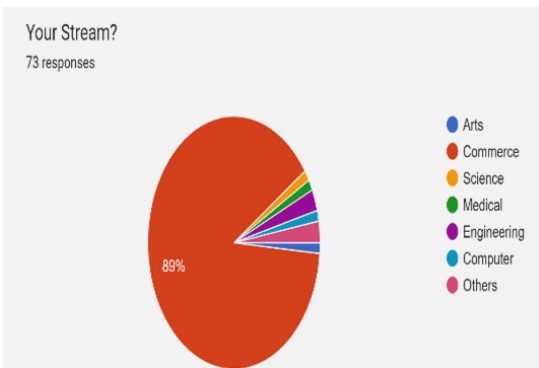
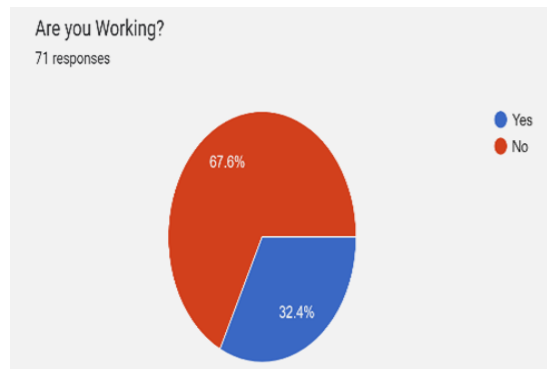
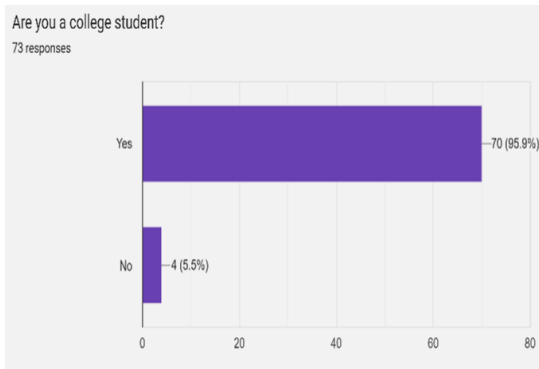
In NEP also we can pursue our interest and get the knowledge from different discipline at the same time.

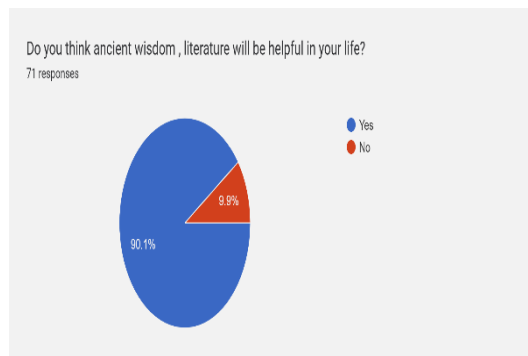
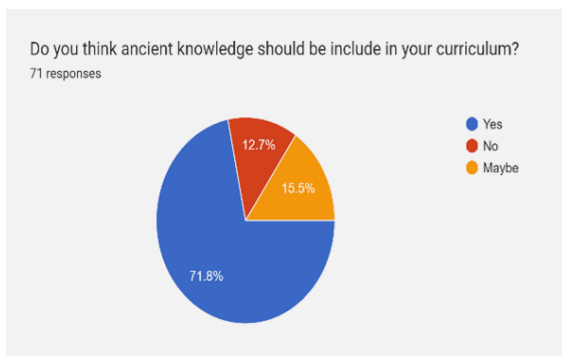
Key Results :

In my Research, 95.9% were students who were going to college and other 5.5% were not a college student. In that 32.4 % were working students and other 67.6% were not working students. 88.6% were from commerce stream. 68.6% were playing below one hour. 37.1% were using mobile phones, laptops, and TV for more than four hours 20% were using below one hour .27.1% were using two hours and 15.7% were using below two hours so overall more than 80% were using laptops and mobile phones above an hour. More than 30% of students like to play online games like pub-g around 84.3% play for one hour. Around 94.3% like to use social media like Facebook, Instagram, and Snapchat, and 40% of the students like to use social media instead of extra-curricular activities. 52.9% of the students meditate for 5 mins. 51.4% of the students have specs and the average age is 18 to 22.

71.4% of students think that ancient knowledge should be included in the curriculum and 90% think that it will be beneficial in their lives even though they don't know ancient knowledge and wisdom, they are willing to learn in their curriculum.

Diagrammatical representation of data:





Conclusion :

Most of the students below the age of 30 are addicted to social media. They don't know their path properly so the Indian knowledge system will be a path showing to students if we implement it properly because the students are interested to know our ancient knowledge and wisdom. The influence of ancient education in the modern education system is tremendous. The emphasis on the Indian Knowledge System, Value education, Yoga, and Skill-based education is to develop psychological well-being and, as a result, students will properly utilize social media and phones and attain holistic development.

Suggestions to UGC, University and Colleges :

1. Education should be more multidisciplinary and choice-based in NEP.
2. To provide teacher training in Indian knowledge systems including traditional Indian sciences, mathematics, medicine, philosophy, literature and arts.
3. Organize workshops, seminars and online courses to introduce teachers to IKS and its inclusion in the curriculum.
4. Inclusion of storytelling of students of ancient times in the curriculum.
5. Conduct awareness campaigns to emphasize the importance of Indian information systems in education and society.
6. Prepare well designed guidebook for better understanding to its stakeholders.
7. Encouragement of research in students.
8. As a part of curriculum, instead of just finishing the exam doesn't contribute it to the main result but institutions should teach students then only it will give justice.

Suggestions to parents :

1. Understand the child's requirement; accordingly, you can give phones but in limit.
2. Limit the use of social media on your phones.
3. Read books so that children will be encouraged to read.
4. Explore nature with your child.
5. Participate in group activities to foster teamwork and communication skills.
6. Set aside dedicated time for family discussions to strengthen bonds and share experiences.

Suggestions to students :

1. Take breaks between the study.
2. Reduce screen time (use a timer).

3. Don't study for exams only; learn and implement it for the development of the nation.
4. Multiple revisions for better memorization.
5. Limit the use of social media.
6. Daily exercise, sports, meditation, and any likable activity.

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**“AN ANALYTICAL STUDY OF LOANS OF SUGAR INDUSTRIES FROM
2014 TO 2024 IN MAHARASHTRA ”**

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➤ **ABSTRACT :**

This paper presents a comprehensive an analytical study of the loan patterns, financial structure, and credit dependency of sugar industries in Maharashtra from 2014 to 2024. It evaluates trends in institutional financing, government policies, repayment performance, and non-performing assets (NPAs) in the sector. The research aims to identify structural issues and suggest policy interventions for the sustainable financial health of the sugar industry.

Keywords : Sugar Industry, Maharashtra, Loans, NPAs, Financial Analysis, Agricultural Credit, Cooperative Banks

1. Introduction:

The sugar industry plays a crucial role in Maharashtra's rural economy, providing employment and supporting millions of sugarcane farmers. Over the last decade, this sector has faced multiple financial challenges, primarily linked to fluctuating sugar prices, mounting debts, and delayed payments to farmers. This paper explores the financial structure of loans availed by sugar mills and assesses the impact of these loans on their operational sustainability.

2. Objectives of the Study :

1. To analyze the pattern of loans availed by sugar industries in Maharashtra from 2014 to 2024.
2. To evaluate the role of cooperative and nationalized banks in sugar sector financing.
3. To assess the repayment trends and defaults.
4. To examine government interventions and policy changes during the decade.
5. To suggest recommendations for sustainable credit policy.

3. Research Methodology :

1. The study is based on secondary data collected from:
2. Reports from NABARD, RBI, and State Cooperative Banks
3. Annual reports of selected sugar mills
4. Government policy documents and audit reports
5. Data from Maharashtra Sugar Commissionerate

4. Analytical tools :

1. Descriptive statistics

2. Trend analysis
3. Ratio analysis (Debt-Equity, NPA Ratios)

Maharashtra Sugar mills and their loans since 2014-2024 :

Sugar Factory	Loan Amount (₹ crore)	Year(s)	Lender/ source	Reference
SCC Sugar Factory (Pune)	511.10	FY2024	MSCB (Maharashtra State Co-operative Bank)	for modernization & co-gen
Vitthal Co-op Sugar Mill (Solapur)	60 + interest guarantee 8.40	Dec 2019	MSCB	Maharashtra Govt. guarantee
Rajgad Co-op Sugar Mill (Bhor)	12 + interest guarantee 1.68	Dec 2019	MSCB	Maharashtra Govt. guarantee
13 Co-op Mills (Multiple districts)	1,898	July 2024	NCDC (National Cooperative Development Corporation)	with Maharashtra Govt. guarantee
37 Co-op Mills	750	Aug 2020	MSCB	State guarantee request
Margin money loans to 31 co-op mills	4,355	Aug 2024– Mar 2025	NCDC	with state backing
Soft loans (2013–15)	3,200	FY14–15	Central Govt soft loan scheme	

*Maharashtra Sugar Commissionerate Reports 2015-2024

Key Observations :

Here’s a refined and more concise version of your points, preserving clarity and factual accuracy:

1. Modernisation Loans (FY24): SCC Sugar Factory received the largest individual loan of ₹511 crore for modernization and co-generation. As of FY24-end, ₹27.85 crore remained unpaid.

2. State Guarantees (2019): The Vitthal and Rajgad co-operative mills received state-backed loans of ₹60 crore and ₹12 crore, respectively, from MSCB, including interest guarantees.

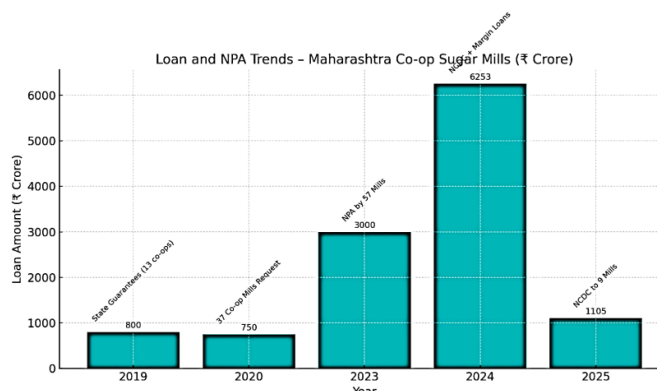
3. Group Loan Packages:

- **NCDC Package (July 2024):** 13 co-operative mills secured ₹1,898 crore with state government support.
- **MSCB Requests (2020):** Around 58–63 mills applied for loans of ₹15– 20 crore each; 37 mills collectively sought ₹750 crore from MSCB/state.
- **Margin-Money Loans (Aug 2024 – Mar 2025):** 31 co-operative mills received ₹4,355 crore through NCDC/state-backed margin-money schemes.

4. Central Soft Loans(2013–15):

Sugar mills availed ₹3,200 crore in soft loans during FY14–15. Many have since sought restructuring due to repayment challenges.

Chart of Years and Loan Amount of Sugar Mills :



Source: *Maharashtra Sugar Commissionerate Reports 2020-2025

4. Analysis and Discussion:

Growth in Loan Disbursement (2014–2024)

Loan disbursement to Maharashtra's sugar industry has shown a steady upward trend over the past decade. From approximately ₹8,000 crore in 2014, the total disbursed amount grew to ₹13,500 crore by 2021. This surge correlates with periods of external stress—such as recurrent droughts and the COVID-19 pandemic—which led mills to seek additional working capital and modernization funds to maintain operations and fulfill payment obligations to farmers.

Loan Sources

The structure of institutional credit to sugar mills reflects the dominance of cooperative finance mechanisms in the sector:

- **60%** of total loans originated from **cooperative banks**, primarily the Maharashtra State Cooperative Bank (MSCB) and district central cooperative banks.
- **30%** were disbursed by **nationalized banks**, often with state guarantees or under central schemes.
- **10%** came from **private financial institutions**, typically at higher interest rates and for shorter durations, often used for bridging operational costs.

Repayment and NPAs :

By 2023, approximately **28%** of co-operative sugar mills in Maharashtra were classified as **stressed assets**. The rise in **non-performing assets (NPAs)** has been attributed to several systemic and operational issues:

- **Delayed crushing seasons**, often due to raw material shortages or regulatory bottlenecks.
- **Non-payment or delayed payment to farmers**, leading to social and legal pressures.
- **Inefficiencies in operations**, including outdated machinery, high input costs, and limited by-product revenue.
- **Diversion of working capital loans** to cover losses or non-core expenditures.

Recent Loan Exposure and Defaults among Co-operative Sugar Mills.

As of 2024, loan exposure across Maharashtra's co-operative sugar sector has increased substantially, driven by modernization efforts, central and state government support packages, and restructuring of old debts. However, **defaults have also risen**, especially among mills with poor recovery rates or without diversification into ethanol, power cogeneration, or other by-product industries.

A significant portion of the recent exposure includes:

- **₹1,898 crore** under the **2024 NCDC package** for 13 mills.
- **₹4,355 crore** in **margin-money loans (2024–25)** provided to 31 mills.
- Persistent dues under the **FY14–15 soft loan scheme**, many of which are undergoing restructuring or are under litigation.

Current NPA Status and Trends

- The **overall NPA ratio** in the co-operative sugar sector is estimated to range between **25–30%**, with variations across districts.
- **Smaller and politically unmanaged mills** are at greater risk of default.
- Mills that have diversified into ethanol production and power cogeneration report **lower default rates** and **better repayment capacity**.

Total Credit Exposure (Nominal Loan Liability) :

As per publicly available reports, co-operative sugar mills in Maharashtra have availed loans amounting to approximately ₹7,355.6 crore from the State Government, National Cooperative Development Corporation (NCDC), and Maharashtra State Cooperative Bank (MSCB) under various schemes between 2020 and 2025. The major components include:

Margin-money loans to 31 co-operative mills: ₹4,355 crore

NCDC loans to 13 co-operative mills (July 2024): ₹1,898 crore

NCDC loans to 9 co-operative mills (January 2025): ₹1,104.6 crore

Non-Performing Assets (NPA) / Defaulted Loans :

As of the latest reports, 57 co-operative sugar mills have defaulted on loans totalling approximately ₹3,000 crore, borrowed from MSCB, Mumbai Bank, and Nanded– Dharashiv District Central Co-operative Banks.

This data may be visually represented in your paper using a bar chart or line chart with the following indicators:

Impact of Ethanol Policy (2020 onwards) :

The push for ethanol blending has improved liquidity for some mills thereby improving repayment capacity.

5. Findings :

- Many sugar mills rely heavily on seasonal loans and working capital.
- Lack of diversification and political interference weaken financial discipline.

- Government packages provide short-term relief but lack long-term restructuring focus.
- Ethanol policy offers new hope but needs infrastructure and investment.

6. Recommendations :

- Encourage financial restructuring through public-private partnerships.
- Link credit to performance benchmarks (e.g., timely farmer payments).
- Promote diversification – co-generation, ethanol, bioplastics.
- Strengthen monitoring by NABARD and cooperative bank audits.

7. Conclusion :

The financial condition of sugar mills in Maharashtra between 2014 and 2024 reveals a dependence on external loans, inconsistent repayment, and systemic challenges. While state and central governments have provided relief packages, sustainable solutions lie in institutional reforms, technological modernization, and financial discipline.

Between 2014 and 2024, sugar mills in Maharashtra have shown a consistent reliance on external loans, marked by irregular repayments and underlying structural challenges. While state and central relief packages have offered temporary support, long-term sustainability depends on institutional reforms, technological modernization, and improved financial discipline.

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**“ COMPARATIVE STUDY OF BANKRUPTCY OF INDIAN INDUSTRIES AND CROP
LOAN CRISIS OF INDIAN FARMERS (2001 – 2025) ”**

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➤ **ABSTRACT :**

The period from 2001 to 2025 witnessed a parallel financial distress trajectory in two critical sectors of the Indian economy: large industries and agriculture. While Indian industries faced corporate insolvency and structural debt issues, Indian farmers grappled with crop loan defaults, rising input costs, and unstable incomes. This paper critically compares the bankruptcy trends of Indian industries with the crop loan crisis faced by Indian farmers, using a multidimensional framework including legal, economic, and policy perspectives. It highlights systemic disparities in state response, media portrayal, and socioeconomic consequences, thereby advocating for a balanced and inclusive policy framework.

Keywords : Bankruptcy, Insolvency, Crop Loan Crisis, IBC, Farmers’ Suicides, Industrial Debt, NPA, Agricultural Credit

Research Methodology :

- **Research Design :**

This study adopts a comparative, analytical, and descriptive research design to evaluate the structural, economic, and social dimensions of two financial crises in India—industrial bankruptcy and the crop loan crisis—over a 25-year period (2001–2025). The research is qualitative in its interpretation and quantitative in its data analysis.

- **Data Collection**

Secondary Data:

Data is primarily sourced from the following:

Government Reports:

Reserve Bank of India (RBI) Financial Stability Reports (2001–2024)

Ministry of Finance Economic Surveys

National Crime Records Bureau (NCRB) reports on farmer suicides

Ministry of Agriculture and Farmer Welfare statistics

Ministry of Corporate Affairs (IBC case data, NCLT dashboard)

- **Data Analysis**

Quantitative Analysis:

Trend analysis of crop loan disbursements, loan waivers, industrial NPAs, and write-offs (2001–2025)

Comparative tables of sector-wise bankruptcy cases and farmer indebtedness across states

Qualitative Analysis:

Policy document analysis and socio-economic impact assessments

Media discourse comparison and legislative framework evaluation (IBC vs. agricultural loan waivers)

Comparative Framework:

The two cases are analyzed using parameters such as causes of default, legal remedies, policy responses, impact on livelihoods, and narrative treatment by the state and media.

• Scope and Limitations:

The study is national in scope, with specific emphasis on case studies from Maharashtra, Punjab, and Andhra Pradesh (for agriculture) and Delhi NCR, Maharashtra, and Gujarat (for industry).

Limitations include the unavailability of real-time insolvency data for 2024–2025 and underreporting of farmer suicides and informal loan defaults.

1. Introduction:

India’s dual-track economy—industrial and agrarian—has been under stress for the last two decades. Despite a growing GDP, both the organized industrial sector and the agrarian economy have faced widespread financial distress. While corporate bankruptcies were largely addressed through mechanisms like the Insolvency and Bankruptcy Code (IBC) after 2016, farmers' crop loan defaults have often resulted in social tragedies, including suicides, despite periodic loan waivers.

This paper aims to conduct a comparative study of these two crises, analyzing data from 2001 to 2025 and assessing systemic responses, media representation, and policy interventions.

2. Bankruptcy of Indian Industries (2001–2025):

2.1 Major Trends and Timeline

2001–2008: Dot-com bust and infrastructure-led credit boom.

2008–2013: Global financial crisis exposed over-leveraging in sectors like steel, telecom, and infrastructure.

2014–2020: Massive NPAs triggered banking reforms.

2016: Introduction of the Insolvency and Bankruptcy Code (IBC) marked a shift in debt resolution.

2020–2022: COVID-19 pandemic worsened liquidity; MSMEs faced existential threats.

2.2 Key Sectors Affected

Steel: Bhushan Steel (₹44,000 Cr NPA), Essar Steel.

Telecom: Aircel, Reliance Communications.

Infrastructure & Power: Lanco Infratech, GVK Power.

Real Estate: Unitech, Amrapali.

2.3 Government Response

IBC (2016) allowed time-bound resolution.

Bank recapitalization for PSBs.

Emergency Credit Line Guarantee Scheme (ECLGS) during COVID-19.

3. Crop Loan Crisis of Indian Farmers (2001–2025)

3.1 Key Phases

2001–2006: Farmer suicides surge in Vidarbha and Andhra Pradesh.

2008: ₹72,000 crore Agricultural Debt Waiver and Relief Scheme (ADWRS).

2014–2019: MSP policy stagnation, droughts, and demonetization shock.

2019: Introduction of PM-KISAN scheme; State-wise waivers in Maharashtra, UP.

2020–2025: COVID-19 supply chain disruptions, inflation in fertilizer and diesel prices.

3.2 Causes

Crop failure due to erratic monsoons.

Input cost inflation vs stagnant output prices.

Lack of formal credit to marginal farmers.

Market volatility and absence of MSP enforcement.

3.3 Social Impact

Over 3.8 lakh farmer suicides (1995–2023).

Heavy indebtedness among tenant farmers and landless laborers.

4. Here are some notable bankruptcy filings in India from 2001 to 2025:

➤ Top Bankruptcies in India

- Dewan Housing Finance Ltd.: \$13.93 billion - A non-banking financial company that was established in 1984 and went bankrupt due to debt issues and allegations of fund diversion
- Bhushan Power and Steel: \$6.9 billion - A steel manufacturing company that was founded in 1970 and went bankrupt due to debt issues and allegations of fund diversion
- Essar Steel: \$6.9 billion - A steel company that was part of the Essar group and went bankrupt due to debt issues and delays in project implementation
- Lanco Infra: \$6.3 billion - An infrastructure company that was founded in 1986 and went bankrupt due to debt issues and policy reversals
- Bhushan Steel: \$6.2 billion - A steel company that was founded in 1987 and went bankrupt due to debt issues and declining commodity prices

➤ Other notable bankruptcies :

- Reliance Communications: \$4.6 billion - A telecom company that was founded by Anil Ambani and went bankrupt due to debt issues and increased competition
- Alok Industries: \$4.1 billion - A textile manufacturer that was founded in 1986 and went bankrupt due to debt issues and poor management decisions
- Jet Airways: \$2 billion - An airline that was founded in 1992 and went bankrupt due to financial struggles and increased competition

5. Key Sectors Affected :

- Steel: Bhushan Steel (₹44,000 Cr NPA), Essar Steel.
- Telecom: Aircel, Reliance Communications.
- Infrastructure & Power: Lanco Infratech, GVK Power.
- Real Estate: Unitech, Amrapali.

6. Recent trends :

- In FY-25, creditors recovered over ₹67,000 crore from companies undergoing bankruptcy proceedings, marking a 42% increase from FY24
- A record 284 corporate resolution plans were approved by the NCLT in FY-25, surpassing the 275 cases resolved in the previous year.

7. Crop Loan Crisis of Indian Farmers (2001–2025)

3.1 Key Phases

2001–2006: Farmer suicides surge in Vidarbha and Andhra Pradesh.

2008: ₹72,000 crore Agricultural Debt Waiver and Relief Scheme (ADWRS).

2014–2019: MSP policy stagnation, droughts, and demonetization shock.

2019: Introduction of PM-KISAN scheme; State-wise waivers in Maharashtra, UP.

2020–2025: COVID-19 supply chain disruptions, inflation in fertilizer and diesel prices.

8. Causes :

Crop failure due to erratic monsoons.

Input cost inflation vs stagnant output prices.

Lack of formal credit to marginal farmers.

Market volatility and absence of MSP enforcement.

9. Social Impact :

Over 3.8 lakh farmer suicides (1995–2023).

Heavy indebtedness among tenant farmers and landless laborers.

10. Comparison of Bankruptcy of Indian Industries and Crop Loan Crisis of Indian Farmers :

Bankruptcy of Indian Industries vs. Crop Loan Crisis of Indian Farmers (2001–2025)

Category	Industrial Bankruptcy	Farmer Crop Loan Crisis
Definition	Inability of industries (private/public/PSUs) to pay off debts; results in insolvency or liquidation via legal frameworks like IBC.	Inability of farmers to repay agricultural loans taken for crop cultivation, leading to default, distress, and sometimes suicide.
Major Legal Frameworks	Sick Industrial Companies Act (SICA) until 2016 Insolvency and Bankruptcy Code (IBC) from 2016 - SARFAESI Act (2002) for secured loan recovery.	- RBI crop loan guidelines- Agricultural Debt Waiver and Debt Relief Scheme (2008) - PM-KISAN (2019), Kisan Credit Cards - State-specific loan waivers (Maharashtra, UP, Punjab, etc.)
Key Periods of Crisis	2008 Global Financial Crisis - 2013–14 Infra and power NPAs - Post-IBC wave (2016–2020) saw mass corporate insolvencies - COVID-19 shutdown (2020–22)	2001–2006 Vidarbha, Andhra suicides- 2009–2010 drought years-Post-2014: market failures, MSP protests - 2017–2022: farmer loan defaults spike amid COVID
Primary Causes	Over-leveraging - Bad governance, mismanagement- Delayed payments, poor demand -	Crop failure due to drought/flood - Low or no MSP enforcement- High input costs, low returns -

	Regulatory delays & policy shocks - Crony capitalism in infra, steel, real estate.	Institutional credit exclusion- Market volatility and debt traps.
Sectors Affected	Steel, power, infrastructure, aviation, telecom, real estate, sugar	Cotton, sugarcane, wheat, rice, soybean, pulses, horticulture
Debt Size	By 2024, total corporate NPAs crossed ₹11 lakh crore - Top 50 defaulters include Jet Airways, Bhushan Steel, DHFL, etc.	Total outstanding agri/crop loans ~₹20 lakh crore (2023) - Debt of small/marginal farmers disproportionately high.
Government Support	IBC-led resolution process - Bailouts (Air India, IDBI, etc.) - Recapitalization of banks - NPA write-offs (₹10.5 lakh crore between 2014–2023)	Loan waivers (₹2.3 lakh crore between 2014–2022) - Interest subvention, crop insurance- PM-KISAN Direct transfers.
Social Impact	Loss of jobs, production & investor confidence - Reduction in credit supply to industries	3.8+ lakh farmer suicides (1995–2023) - Rural distress, protests (like 2020–21 farmers’ protest)
Resolution Time	Average IBC case takes 440+ days (as of 2023) - Many large corporate cases unresolved	Loan waivers provide temporary relief- Structural issues (e.g., MSP, irrigation) remain unaddressed
Media & Policy Attention	High, especially post-IBC; big corporate bankruptcies dominate headlines	High during elections and crisis years; often seen as populist issue

11. Key Observations :

1. Double Standard in Financial Morality.

Corporate defaults are often treated as “business failures” and restructured under IBC. Farmer defaults are viewed as “moral hazard” or irresponsibility.

2. Bank Write-offs vs. Farmer Suicides

Banks wrote off over ₹10.5 lakh crore in industrial bad loans (2014–23). Meanwhile, small farmer loans worth ₹50,000–₹1 lakh led to suicide in drought-hit areas.

3. Political Use of Crisis

Industry: Bailouts used for lobbying.
Farming: Waivers used for elections but no long-term credit/income reform.

4. Post-COVID Period (2020–25)

Both industries and agriculture faced cash flow problems.
Government focus was more tilted toward corporate relief via credit guarantees than rural distress.

5. Disproportionate Policy Bias :

Industrial loans are considered "strategic," while farmer loans are often seen as "populist".

6. Loan Write-off vs. Waiver :

Industrial NPAs are written off silently; farmer loans are waived with political baggage.

7. Lack of Structural Reform in Agriculture :

Unlike IBC, agriculture lacks a legal debt resolution framework.

8. Media and Elite Perception :

Corporate failure is sanitized, whereas farm debt is stigmatized.

12. Recommendations:

1. Legal Framework for Agrarian Debt Resolution: An agriculture-specific insolvency code is needed.
2. Transparent Credit Monitoring: Both industrial and agricultural credit should be subject to equal scrutiny.
3. Financial Inclusion and Farmer Rights: Access to institutional credit, legal aid, and crop insurance must be widened.
4. End Double Standards: Align moral narratives around debt with economic realities.
5. Post-COVID Monitoring: Focus on MSME distress and marginal farmer recovery together.

13. Conclusion :

The Indian economy's fragility over the last two decades is evident from both industrial bankruptcies and the crop loan crisis. However, the state's response, media discourse, and public empathy have been uneven. While the corporate sector gets systemic relief through legal mechanisms like IBC, distressed farmers are left to depend on ad hoc political decisions. A democratic economy must address both crises with equal urgency and empathy.

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STRENGTHENING BUSINESS CYBER SECURITY WITH PREDICTIVE DATA ANALYTICS

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➤ ABSTRACT :

Traditional reactive security solutions are failing in an era where firms are exposed to more sophisticated and complex cyber threats due to digital transformation. This article examines how predictive data analytics is becoming a vital tool for improving enterprise cyber security by helping companies foresee and eliminate dangers before they become real.

The paradigm shifts this topic represents—from reactive, post-incident protection to proactive, data-driven threat prevention—is what makes it so important. Leveraging machine learning, statistical models, and real-time data analysis has become crucial for maintaining organizational resilience, regulatory compliance, and the protection of digital assets as cyber attacks continue to increase in frequency and intensity.

This paper's scope encompasses a thorough analysis of important prediction approaches, including clustering algorithms, anomaly detection, supervised and unsupervised learning, and optimization techniques like PSO and WOA. Using current empirical research and case studies, it also discusses practical applications in malware detection, fraud prevention, intrusion response, and behavioural analytics.

This paper's content evaluates the use of predictive models, such as SVM, decision trees, neural networks, and logistic regression, in cyber security frameworks by combining insights from academic research and industry case studies. Challenges like data quality, model interpretability, legacy system integration, and ethical data use are also covered in the review. In the end, the study confirms that predictive analytics is a strategic necessity for creating flexible, intelligent, and future-ready cyber security infrastructures rather than only a technical advancement.

➤ INTRODUCTION :

Cyber security has become a top responsibility for companies in every industry in today's more digital and linked world. Traditional reactive security techniques are not keeping up with the rise of complex cyber threats, which include advanced persistent threats (APTs), ransom ware and phishing attempts. Predictive data analytics is a new area of cyber security defence that is developing because of enterprises' ongoing production of enormous volumes of data.

Predictive data analytics uses historical and current data, statistical algorithms, and machine learning techniques to identify potential security threats before they materialize. By spotting odd patterns and anticipating potential vulnerabilities, predictive analytics assists

businesses in adopting a more proactive approach to cyber security. This lowers the risk of data breaches and financial losses while also ensuring business continuity and regulatory compliance.

Predictive data analytics' developing role in improving business cyber security is examined in this review paper. It summarizes research from both academia and industry, emphasizing methods, resources, case studies and results where predictive analytics has been used to identify, lessen or stop cyber threats. The objective of this paper is to present a thorough understanding of the potential and constraints of predictive analytics in the cyber security domain by critically evaluating different methodologies and their efficacy.

Predictive Analytics and Cyber security

Mohammed Sayeeduddin Habeeb [1] had examined various ML techniques used in cybersecurity, including:

- **Supervised and Unsupervised Learning**

Support Vector Machines (SVM), Decision Trees (DT), K-Nearest Neighbours (KNN), Artificial Neural Networks (ANN), and Fast Learning Networks (FLN) are examples of classification methods.

- **Techniques for clustering and anomaly detection: K-Means Clustering**

- **Particle Swarm Optimization (PSO) and Whale Optimization Algorithm (WOA) are two feature selection and optimization algorithms.**

These techniques are used in a variety of cyber security fields, including fraud detection, network intrusion detection, malware detection, user behavior analytics, and phishing protection. An organization's capacity to react quickly and efficiently to possible security breaches is greatly improved by the integration of automated response mechanisms, cyber risk analytics, and real-time threat detection technologies.

The study also highlights the need of cyber risk management through predictive modeling, which helps businesses prioritize risks, evaluate possible effects, and more effectively deploy resources. It also emphasizes how crucial it is to preserve data integrity, lower false positives and negatives, and make sure that data privacy laws are followed.

According to the paper's conclusion, the combination of cyber security and predictive analytics signifies a paradigm shift that enables firms to maintain an advantage over cyber attackers by implementing proactive, flexible, and intelligent protection methods. Predictive analytics will be essential in creating a robust and safe digital ecosystem as threat continues to change.

Predictive Analytics for Cyber Threat Intelligence

Obaloluwa Ogundairo et al [2] elucidate the implementation of machine learning models, encompassing both supervised methods (such as decision trees, SVM, and neural networks) and unsupervised techniques (including clustering and anomaly detection), to identify patterns in historical cyber event data and predict future attack vectors. Rich data sets from IDS, SIEM, and threat intelligence feeds are used in these models, and data quality is ensured by preprocessing procedures including feature extraction and normalization.

To create reliable predictive architectures that can identify abnormalities and new threats in real time, the technique includes data collecting, model building, and integration with CTI systems. When compared to conventional techniques, evaluation criteria like accuracy, recall, F1 score, and AUC-ROC demonstrated significant gains in detection rates and a decrease in false positives.

The **conclusion** affirms that predictive analytics significantly enhances cyber security operations by:

- **Improving detection precision**
- **Reducing manual workloads and response times**
- **Offering cost-effective threat management solutions**

However, challenges remain, including data bias, model interpretability and the need for continuous model updates to adapt to evolving threats. The authors advocate for ethical data handling, transparent AI models and collaborative intelligence sharing as key future directions.

In summary, this paper highlights predictive analytics as a cornerstone for next-generation cyber security—enabling organizations to **foresee threats before they manifest**, thereby protecting digital assets with greater agility and resilience.

Enhancing Cyber Security through Predictive Analytics : Real Time Threat Detection and Response

Muhammad Danish [3] explores the transformative role of predictive analytics in shifting cyber security paradigms from reactive to proactive defence mechanisms.

Relying on a structured **quantitative approach**, the study investigates how predictive models can improve real-time threat detection and response in cyber security systems. Using a Kaggle-sourced dataset comprising over 2000 network traffic instances, the paper applies **logistic regression, cluster analysis and advanced statistical methods** to uncover patterns of malicious behaviour that traditional systems might miss.

Key findings demonstrate that predictive analytics significantly enhances an organization's ability to:

- Detect threats **before** they manifest.
- Minimize **false positives** that commonly plague signature – based detection systems.
- Enable **faster and smarter decision- making** through dashboards and visualization tools.

Enhanced visibility into cyber threats, including zero-day vulnerabilities that traditional security processes miss is made possible by the incorporation of machine learning, namely supervised models like logistic regression and unsupervised techniques like anomaly detection.

While the study confirms the **effectiveness** of predictive analytics, it also acknowledges real- world **challenges**, such as:

- Dependence on high-quality, well-labelled data.
- The need for **frequent model updates** to match evolving threats.
- Difficulty in integrating predictive models into legacy systems.

In conclusion, the paper affirms that **predictive analytics is a vital enabler of modern cyber security**, improving threat identification, response speed and strategic risk management. The results, which highlight the significance of adaptive learning algorithms and real-time threat intelligence feeds, make a substantial contribution to the body of knowledge and provide a basis for upcoming practical applications.

The Role of Predictive Analytics in Cyber security : Detecting and Preventing Threats

Nayem Uddin Prince [4] explains the strategic potential of predictive analytics in transforming cyber security from a reactive discipline to a proactive defence system is discussed by Nayem Uddin Prince [4].

The study summarizes how machine learning- powered predictive models can improve cyber threat identification and prevention by drawing on a large body of literature and real-world case studies. By highlighting technologies such as support vector machines (SVMs), neural networks, and decision trees, the paper demonstrates how historical data may be analysed to find threat trends prior to attacks.

Key findings underscore those predictive analytics strengthens cyber security by enabling organizations to:

- **Identify possible risks early on**, before they become breaches.
- **Cut down on false positives and negatives**, which frequently compromise conventional detection methods.
- Put into practice preventative measures based on behaviour analysis and data-driven threat modelling.

The research demonstrates how predictive models can detect subtle and changing cyber attack vectors, such as zero-day threats and anomalous user behaviours, by combining supervised learning (e.g., classification via SVMs and decision trees) and unsupervised techniques (e.g., anomaly detection and clustering).

The paper also acknowledges key challenges to implementation, including:

- **Concerns over data privacy** and ethical data usage.
- **Technical limitations** in model interpretability and adaptability.
- **Operational hurdles** such as the integration of modern analytics into existing (often outdated) IT infrastructure.

According to the study's conclusion, predictive analytics is a crucial instrument in the development of cyber security. Through proactive protection, intelligent automation, and early threat assessment, it improves organizational resilience. The results provide a strong basis for further study, especially in the fields of real-time data ingestion, adaptive learning systems, and integration with cutting- edge technologies like block chain, artificial intelligence, and the Internet of Things.

Predictive Analytics in Threat Detection: How AI and ML are Revolutionizing Security

Overview :

Joseph David [5] presents a compelling analysis of how predictive analytics—driven by Artificial Intelligence (AI) and Machine Learning (ML)—is reshaping the cyber security landscape. As threats evolve in sophistication and scale, traditional reactive approaches are no longer sufficient. The study highlights how organizations can adopt predictive models to transition from reactive defence to real-time, proactive threat mitigation.

➤ KEY FINDINGS :

The paper demonstrates that predictive analytics significantly strengthens cyber security systems by enabling :

- **Early detection of threats** through anomaly and behavioral pattern analysis.
- **Reduced false positives**, thereby streamlining security operations.
- **Faster, automated responses** using AI- driven play books and real-time monitoring.
- **Enhanced risk forecasting**, allowing teams to anticipate attack vectors and prioritize resources.

It describes how reinforcement learning and supervised and unsupervised machine learning algorithms enable cyber security systems to continuously learn from data in order to identify known and undiscovered risks, including insider breaches and zero-day vulnerabilities.

Applications

The research outlines practical, real-world use cases across:

- **SIEM platforms** for smarter event correlation.
- **EDR tools** for proactive endpoint threat detection.
- **Network monitoring** for real-time anomaly recognition.
- **Financial fraud prevention** based on user behavior models.
- **Incident response automation**, enhancing reaction speed and scalability.

➤ CONCLUSION :

This review article emphasizes the critical importance of predictive data analytics in shifting company cyber security from a reactive to a proactive profession. Organizations can use machine learning models such as SVMs, decision trees, neural networks, and clustering approaches to predict threats, reduce false positives, and increase real-time response systems.

To improve cyber security effectiveness, this paper recommends incorporating federated learning for collaborative yet private model training, using digital twins to simulate threats in controlled virtual environments, using behavioural biometrics and cognitive analytics for deeper user behaviour profiling, and embedding zero-trust frameworks with predictive risk scoring to continuously validate users and devices.

These advanced, yet underutilized methodologies could fill gaps in present research and application. As threats grow, incorporating such innovations will become important for

developing resilient, intelligent, and future – proof cyber security systems.

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Our Vision

To impart qualitative and value-based education in commerce and business studies, by blending creativity, curiosity and communication, leading towards a desirable socio transformation of the nation impacting the world at large.

Our Mission

The mission of our college aims to bring the vision into reality by harnessing its rich and physical human resources towards the development of students considering them as point in the following ways :

- **Delivering a High Content Curriculum:** To deliver a high content curriculum, which is market oriented and contemporary, matching the requisite skill sets developed through industry academia interface.
- **Value Based Learning:** To inculcate a sense to ethical, moral and human values and social responsibility leading to the highest integrity and commitment to the society.
- **Creativity:** To impress an amalgamation of self and participative learning through innovative pedagogy tools and peer learning to hone analytical skills.
- **Curiosity:** To foster curiosity by creating an environment that encourages openness, independent thinking, questioning, reflection and learning together.
- **Communication:** To promote effective communication skills by instilling divergent thinking and experimentation, embracing differences and building confidence.
- **Holistic Development:** To promote the holistic development of students by nurturing them to become balanced and well- rounded individuals ready to succeed in a fast changing world.
- **Socio Economic Transformation:** To impart a quality education that can transform the lives of the socially, educationally and economically underprivileged and create a brighter future for the nation and the world at large.

Our Objectives

- 1) To impart commerce and business education to the young generation of India.
- 2) To strive continually for the enhancement of the quality of education imparted by us.
- 3) To keep in mind the ethical context of education particularly of business education.
- 4) To make effort toward the overall development of our students personality and introduce them to the area of creativity both within and beyond the boundaries of commerce and business studies.
- 5) To implant an attitude of patriotism and social responsibility in our students minds

ABOUT MODERN EDUCATION SOCIETY

Modern Education Society Pune, struck its foundation on February 15, 1932. The efforts of its founder Prin. V. K. Joag and munificence of the Wadia brothers, Sir Cusrow Wadia and Sir Ness Wadia, the Modern Education Society came into being as a regular registered educational society. The society operates educational institutes and colleges from around 17 acres campus centrally located in the heart of pune city and 10 acres campus in the heart of central Mumbai. The society provides excellent educational, infrastructural, playground recreational facilities and top class faculties where over 23000 students pursue their dream career. The society is managed by a professional Board of Trustees consisting of stalwarts from industry and other eminent educationists. Mr. Nusli Wadia one of the voyage / conglomerate of Indian industry is the honorable president of Modern Education Society Pune – 1.

The following are the eminent institutes and colleges managed by the Modern Education Society.

1. The Nowrosjee Wadia College of Arts and Science, Pune. (Estd.–1932)
2. The Cusrow Wadia Institute of Technology, Pune. (Estd.–1938)
3. The D. G. Ruparel College of Arts, Science and Commerce, Mumbai. (Estd.–1952)
4. The New Law College, Mumbai. (Estd.–1954)
5. The Ness Wadia College of Commerce, Pune. (Estd.–1969)
6. The Neville Wadia Institute of Management Studies & Research, Pune. (Estd.–1992)
7. MES College of Engineering, Pune. (Estd.–2000)

ABOUT NESS WADIA COLLEGE OF COMMERCE

The Ness Wadia College of Commerce, established in 1969, is one of the prominent Commerce Colleges in India. The College is affiliated to the Savitribai Phule Pune University, Pune and has around 5000 students including foreign students from various countries on its rolls. The college offers 11th, 12th, UG, PG & Diploma programs such as B.Com., BBA, BBA-(IB), BBA-(CA), B.Voc, M.Com, PGDBFI, PGDIB & DTL. The college has well equipped Research Centre approved by the Savitribai Phule Pune University, Pune for Ph.D research scholars. The students of the college receive all round development inputs from competent and dedicated faculty members. In **INDIA TODAY**'s recent Nation-Wide Survey, the College has been ranked "Topmost" among the commerce colleges in the city and is one among the Top 25 commerce colleges in the country. Notwithstanding this, the college has been ranked one among the top 10 Business Schools in the country for the Bachelor of Business Administration Course. The Savitribai Phule Pune University has conferred the **"BEST COLLEGE AWARD"** and the **"BEST PRINCIPAL AWARD "** to the College in the Academic Year 2005-06 and 2006-07 respectively. The college has been ranked in **"INDIA TODAY"** and **"OUTLOOK I-CARE RANKINGS "** since 2018. The college ranked 34th in India's top colleges as per **OUTLOOK I-CARE RANKINGS** for the year 2024.

ABOUT THE LATE PRIN. DR. B.S. BHANAGE MEMORIAL SEMINAR

The Late Prin. Dr. B.S. Bhanage Memorial Seminar was inaugurated in 1999 as a tribute to the esteemed Late Prin Dr. B.S. Bhanage. Celebrating its 25th year, the seminar was initiated by Dr. Hemant Devstali, the former principal. The primary objective behind this endeavor was to instill enthusiasm among teaching faculties for crafting research papers. The focus of these papers revolves around dynamic themes related to recent trends in the fields of commerce and management. The seminar serves as a platform for educators to engage with and contribute to the evolving landscape of academic research in these disciplines.

The college inculcates research culture amongst the faculty members and research scholars through conducting Conferences, Seminars and Workshops, etc. This year an International Conference is organized on the theme entitled **"Emerging Trends in Business Environment: A Global Perspective"**.