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6th International Conference on

"EMPOWERING ENTREPRENEURS IT & EFFECTIVE MANAGEMENT"

IC-EEITEM 2023

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EDITORIAL

It is a matter of great pride and pleasure for us to host the 6th International Conference on **"Empowering Entrepreneurs - Information Technology and Effective Management"- (IC-EEITEM 2023)" in association with Synergy University, Moscow & Dubai as Academic Partner along with First SIIC-IIT-Kanpur as Knowledge Partner**, on Saturday, 2nd December 2023. In our rapidly evolving world, where technology drives innovation, grasping the synergy between IT and efficient management is crucial for entrepreneurial triumph. Resources available empower entrepreneurs with essential tools, blending IT expertise with strategic management for informed decisions and sustainable success. This conference acted as a guiding light for entrepreneurs, corporates, researchers, scholars, and academicians, illuminating pathways to impact in the modern business landscape.

Conference Keynote Speaker **Mr. Ikuo Kawauchi**, is an Advisor (International Advisory Board Member) at Pimpri Chinchwad University, Pune, Strategy Advisor for Educational Institution, Honorary Advisor at Indian Scientists Association in Japan. Additionally, He also holds the roles of Advisor and Lecturer (1st Grade SDGs Meister) at the Accreditation Board for SDGs.

Keynote Speaker **Dr Amey Karkare**, Professor-In-Charge for the Office of Digital Learning at IIT Kanpur and also manages the eMasters degree program of IIT Kanpur. He has been awarded with with the 1989 Batch Faculty Award and the Best Faculty of the Year 2018.

Keynote Speaker **Dr. Manoj Kumar Soni**, Professor at Birla Institute of Technology and Science (BITS), Pilani He is a Professor in the Mechanical Engineering department and coordinator of the Centre for Renewable Energy and Environment Development (CREED) at BITS. He has received the esteemed Dr. ShirinGadhia Sustainability Award 2019 from Eco Center ICNEER, Vadodara.

Keynote Speaker, **Mr. Annu Grover**, Founder & CEO at Zamia - Entrepreneur, Noida. He holds a deep passion for introducing nature into homes worldwide. His inception of Zamia in 2020 followed twelve years of leading Nurturing Green, a plant gifting company co-founded in 2008.

Plenary Speaker, **Mikhail Leonov**, Teacher-Researcher, Synergy University, Moscow.

Conference Session Chair, **Dr. Rahul Verma**, Lecturer Commerce Department, Delhi University. His academic contributions span over 42 research papers/chapters published across various national & international conferences. He has edited nine books in collaboration with esteemed publishers such as IGI Global, Apple Academic Press.

We feel privileged in thanking all those who have helped us in making this Conference successful. From every little gesture of help to grand support, each action is acknowledged. Special thanks to our Respected Chairman Dr. Mahendra Mohan Gupta, Vice-Chairperson Mrs. Ritu Gupta, CEO-JEF Dr. J.N Gupta & Director Dr. Divya Chowdhry under their guidance we initiated this conference. We express our sincere thanks to the Organizing Committee for their enormous support and motivation. We wish you all to learn, gather and make memories worth remembering.

Prof. (Dr.) Divya Chowdhry	**Prof. (Dr.) Anil Kumar Singh**	**Mr. Ashish Mishra**
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CONTENTS

TOWARD A HOPEFUL FUTURE

IKUO KAWAUCHI
Strategic Advisor, Japan

Just as Covid-19 pandemic is nearing its end and global economic and business conditions are finally turning around, Russia's invasion of Ukraine has caused a somewhat delayed global economic recovery.

Soaring energy prices and food supplies shortages have had major impact.

Global economic growth is expected to slow in both 2023 and 2024.

Global inflation is expected to slow steadily as falling international commodity prices combine with tighter monetary policy.

Japan is in much the same situation as the world economy, especially in terms of trade, which has been heavily dependent on China, and is therefore also affected by China risk.

Japan has finally begun to enact new policies to break out of its prolonged economic stagnation.

In my view, the most important and difficult global challenge is to combat climate change and decarbonization.

Japan has been actively promoting green economy and circular economy related areas as its key priorities.

The government has embarked on startup development program, something it has been slow to do.

Japan has always possessed advanced elemental technologies, meticulous manufacturing processes, and high-quality control capabilities in traditional industries.

In new, future-oriented industries, Japan has the potential to play an important role in the world.

However, Japan's domestic market is shrinking due to a declining population caused by falling birthrate and aging population.

Japan is slow and poor at translating advanced technology into social implementation and business.

Under these circumstances, how can Japan promote global activities?

I believe that a very effective option is to further promote relations with India.

India has emerged as the world's fifth largest economy, surpassing UK, with its vast land and markets and abundant young labor force.

Geopolitically and geoeconomically, it is close to Southeast Asia, the Middle East and Africa, and Europe, and has a long history of friendly relations.

The social implementation of advanced IT and AI technologies, which Japan is not good at, is being actively implemented in the country.

This year is a symbolic year for the Asia Africa region, with Japan as the G7 Presidency, India as the G20 Presidency, and UAE as the host of COP28.

India has begun to play a role of global leadership as the voice of Global South.

Now is the time to create new industries and businesses to solve difficult social issues, positioned mainly in India.

My dream is to be a part of such a great movement that will change and regenerate the world.

If you agree with my thought and vision, let's take action together.

❑❑❑

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REVIEW ON HEAT MITIGATION STRATEGIES IN CONTEMPORARY DATA CENTER DESIGN

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ABSTRACT

Data centers generate heat as a natural byproduct of their operations. Data centers house a large number of servers, networking equipment, and storage devices that are constantly processing and transferring data. This electronic equipment generates heat as it operates, and this heat needs to be managed to prevent overheating, which can lead to equipment failures and data loss. To manage the heat generated by data centers, various cooling systems are used. These cooling systems can include air conditioning, HVAC (heating, ventilation, and air conditioning) systems, and more advanced techniques like liquid cooling or hot/cold aisle containment. The goal is to maintain a stable and cool operating temperature within the data center to ensure the equipment functions optimally.

Keywords: Data Center, Cooling Techniques, Power Density and Workloads, Liquid Cooling, Hot/Cold Aisle Containment.

1. INTRODUCTION

Data centers play a crucial role in the modern digital era, underpinning the functioning of our increasingly interconnected world. These facilities are the backbone of the digital infrastructure, providing a secure and reliable environment for storing, processing, and managing vast amounts of data. As the time progresses, the demand for band-width increases due to the evolution of new technologies supporting video on demand, music, etc., the traditional data centers heavily rely on electronics and thus dissipated a large amount of heat. To reduce both cabling and heat dissipated, fiber optic communication was supposed to be the next technology to replace current electronic systems, but unfortunately, fiber optic technology is not matured enough to be implemented. Therefore, as an alternative optical wireless communication (OWC) can be used, where advantages of optical components are availed and transmission media is free space, thus reducing cabling[1].

Here are some key points highlighting the significance of data centers in today's digital landscape:

- **Data Storage and Management**: Data centers are responsible for housing and managing the vast volumes of data generated daily by individuals, businesses, and organizations. This includes everything from personal photos and documents to critical business information and sensitive government records.
- **Computing Power**: Data centers host powerful servers and computing hardware, making it possible to run complex applications and perform high-speed data processing. This capability is essential for tasks like machine learning, artificial intelligence, scientific research, and financial modeling.

Figure 1. Google Data Center

- **Redundancy and Reliability**: Data centers are designed with redundancy and failover mechanisms to ensure uninterrupted access to data and services. This reliability is essential for businesses and services that cannot afford downtime, such as e-commerce platforms and financial institutions.
- **Scalability**: As data requirements grow, data centers can be easily scaled up by adding more servers and storage infrastructure. This scalability is vital for accommodating the ever-increasing amounts of data generated in the digital age.
- **Content Delivery**: Data centers play a crucial role in content delivery networks (CDNs), ensuring that web

content, videos, and other media are delivered efficiently to users worldwide. This improves the user experience and reduces latency.

- **Cloud Computing**: Cloud service providers rely heavily on data centers to deliver services like cloud storage, virtual machines, and platform-as-a-service (PaaS). These services enable businesses and individuals to access computing resources on-demand without the need for large on-premises infrastructure.
- **Security**: Data centers are fortified with advanced security measures, including access controls, surveillance, and encryption, to protect sensitive data from cyber threats and physical breaches. Ensuring the confidentiality, integrity, and availability of data is a top priority.
- **Energy Efficiency**: Given the enormous energy requirements of data centers, there's a growing focus on making them more energy-efficient and environmentally sustainable. Many data centers are adopting renewable energy sources and innovative cooling technologies to reduce their carbon footprint.
- **Global Connectivity**: Data centers are strategically located around the world, ensuring global connectivity. This global network of data centers enables data to be stored and accessed from various geographic locations, improving data redundancy and minimizing latency.
- **Disaster Recovery**: Data centers often serve as disaster recovery sites, where critical data and applications can be restored in case of unexpected events like natural disasters, hardware failures, or cyber attacks.

Data centers are the backbone of the digital age, supporting the storage, processing, and delivery of data and services critical to our daily lives. Their significance continues to grow as the digital landscape evolves, making them a fundamental part of our modern infrastructure.

2. CHALLENGES RELATED TO HEAT GENERATION IN DATA CENTERS

Heat generation is a significant challenge in data centers due to the high-density computing equipment packed into these facilities. Managing and dissipating the heat generated is crucial for maintaining the reliability and efficiency of data center operations. Here are some of the key challenges related to heat generation in data centers:

- **High Energy Consumption**: Data centers consume massive amounts of energy to power servers, networking equipment, and cooling systems. This energy consumption not only contributes to operational costs but also exacerbates heat generation.
- **Hot Spots**: Heat is not evenly distributed within a data center. Hot spots can develop, particularly in areas with densely packed servers or insufficient cooling infrastructure. These hot spots can lead to equipment overheating and failures.
- **Cooling Infrastructure Complexity**: Data centers require sophisticated cooling systems to remove heat effectively. Maintaining and managing these systems can be complex and costly. Inefficiencies in cooling infrastructure can result in increased energy consumption and operational expenses.
- **Energy Efficiency**: Achieving energy efficiency is a constant challenge for data centers. Improper airflow management, outdated equipment, and inefficient cooling strategies can lead to wasted energy and increased operational costs.
- **Space Constraints**: Many data centers operate within limited physical spaces, making it challenging to install and maintain efficient cooling systems. This can exacerbate heat-related issues as there may be limited room for expanding cooling infrastructure.
- **Environmental Concerns**: The environmental impact of data center heat generation is a growing concern. The energy used to cool data centers contributes to greenhouse gas emissions. As a result, there is a push for more environmentally friendly cooling solutions and data center designs.
- **Future Growth**: As data center demands continue to grow with the increasing volume of data and cloud computing services, heat generation will become an even more significant challenge. Data centers must plan for future expansion and increased cooling requirements.
- **Heat Recovery**: Many data centers are exploring ways to repurpose the heat generated. While this can be an environmentally friendly approach, it requires additional infrastructure and planning to capture and utilize the heat effectively.
- **Optimizing Server Design**: Manufacturers are working on more energy-efficient server designs that generate less heat. This includes advances in processor technology and server architecture to reduce heat production without sacrificing performance.
- **Monitoring and Management**: Real-time monitoring of temperature and airflow within the data center is crucial for identifying hot spots and optimizing cooling. Data center operators need sophisticated management tools to ensure efficient cooling and heat dissipation.
- **Innovative Cooling Solutions**: Data centers are exploring innovative cooling solutions, such as liquid cooling, hot/cold aisle containment, and free cooling, to improve efficiency and reduce heat-related challenges.

Heat generation is a persistent challenge in data centers due to the high energy demands of modern computing equipment. Data center operators must continually invest in energy-efficient technologies and cooling solutions to address these challenges, reduce operational costs, and minimize their environmental impact [2][3].

3. SERVER HARDWARE, POWER DENSITY AND WORKLOADS

The impact of server hardware, power density, and workloads on heat production in data centers is significant

and interrelated. Each of these factors contributes to the overall thermal management challenges faced by data center operators. Let's discuss their individual and combined effects:

(i) Server Hardware:

- **Processor Technology:** The type of processors used in servers has a direct impact on heat production. High-performance processors, such as those in modern data center-grade CPUs, can generate substantial heat when operating at full capacity. Conversely, energy-efficient processors produce less heat.
- **Memory and Storage:** In addition to processors, memory and storage components also contribute to heat generation. Memory-intensive workloads can increase the heat output as the servers access and manipulate data in RAM.
- **Graphics Processing Units (GPUs):** Data centers increasingly use GPUs for tasks like AI and deep learning. GPUs are known for their high power consumption and heat generation, making them a key consideration for thermal management.
- **Server Form Factor:** The physical design of servers can affect heat generation. Blade servers, for example, are compact and densely packed, potentially leading to higher heat density within the server rack.

(ii) Power Density:

- **Power Draw:** The power consumption of servers directly influences heat production. Servers with high power draw, often seen in high-performance computing clusters or GPU-intensive applications, generate more heat than those with lower power requirements.
- **Rack Density:** The number of servers in a rack and their power requirements contribute to power density. High-density racks with multiple power-hungry servers generate more heat per unit of rack space.
- **Cooling Infrastructure:** Data centers must be designed to accommodate varying power densities. High-density areas require more robust cooling solutions to dissipate the increased heat effectively.

(iii) Workloads:

- **Intensive Workloads:** Certain workloads, such as scientific simulations, rendering, and complex data analytics, can push server hardware to its limits, resulting in higher heat generation. These workloads often demand powerful processors and GPUs.
- **Virtualization:** Virtualized environments, where multiple virtual machines (VMs) share physical server resources, can lead to variable workloads. When multiple VMs on a single server operate at high loads simultaneously, it can increase heat production.
- **Dynamic Workload Changes:** Workloads in data centers are not static. As workloads change over time, the heat production within the data center can vary. Proper monitoring and management are necessary to respond to these fluctuations.

The combined impact of these factors can result in varying heat profiles across a data center. To manage heat effectively, data center operators must consider server hardware choices, power distribution, and cooling infrastructure carefully. Strategies such as hot/cold aisle containment, liquid cooling, and dynamic power management can help mitigate the challenges posed by heat generation in data centers. Additionally, energy-efficient hardware and workload optimization techniques can play a significant role in reducing heat production and, by extension, improving data center efficiency and sustainability [6].

4. CONTEMPORARY DATA CENTER DESIGN PRINCIPLES AIMED AT HEAT MITIGATION

Contemporary data center design principles prioritize heat mitigation as a critical element to ensure operational efficiency, reduce energy consumption, and extend the lifespan of equipment. These principles focus on both the architectural and technological aspects of data center design.

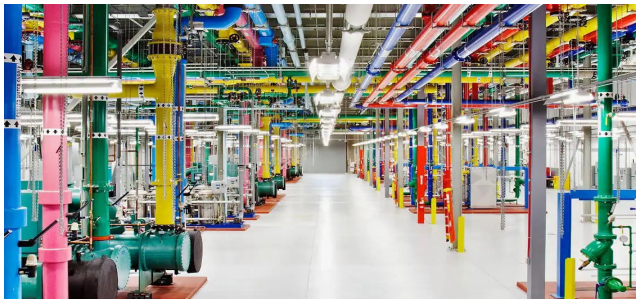

Figure 2. Google Data Center Cooling by AI

Some key contemporary design principles aimed at mitigating heat in data centers are:

Hot/Cold Aisle Containment:

- **Hot Aisle Containment:** Hot aisle containment involves enclosing the hot exhaust aisles of server racks, preventing hot air from mixing with the cooler air in the data center. This containment strategy improves airflow efficiency, reducing the need for cooling.
- **Cold Aisle Containment:** Cold aisle containment does the opposite by enclosing the cold intake aisles. It ensures that servers receive cooler air, reducing the workload on the cooling system and improving overall efficiency.

Liquid Cooling:

- **Direct-to-Chip Liquid Cooling**: Some data centers adopt liquid cooling solutions that directly cool server components, such as CPUs and GPUs, with liquid-cooled heat exchangers. This approach is highly effective at heat removal and can significantly reduce air conditioning requirements.
- **Rear Door Heat Exchangers:** Rear door heat

exchangers are attached to the back of server racks and use liquid cooling to dissipate heat from servers. They are efficient at removing heat and can be added to existing server racks.

Free Cooling:

- **Outside Air Economization:** Data centers in regions with favorable climates use outside air to cool the facility when the ambient temperature is lower than the desired data center temperature. This reduces the reliance on mechanical cooling systems, saving energy and reducing heat generation.

Modular and Scalable Design:

- **Modular Architecture:** Data centers are designed in modular units that can be added or removed as needed. This scalability allows for better control of heat distribution and cooling efficiency.

High-Efficiency Cooling Systems:

- **Variable-Speed Fans and Pumps:** Using fans and pumps with variable speeds allows for precise control of airflow and cooling capacity, matching the cooling system's output to the heat load.
- **Precision Cooling:** Precision cooling systems use advanced sensors and control algorithms to maintain the temperature and humidity within tight tolerances, optimizing cooling efficiency.

Server and Rack Design:

- **Energy-Efficient Servers:** Data centers deploy energy-efficient servers and equipment that produce less heat per unit of computing power. These servers often feature improved power management and more efficient components.
- **Hot-Swappable Components:** Servers designed with hot-swappable components (e.g., power supplies, fans) allow for easy maintenance without disrupting the airflow or cooling in the data center.

Advanced Monitoring and Management:

- **Real-Time Monitoring:** Comprehensive monitoring systems continuously collect data on temperature, humidity, and server performance. This data is used to make real-time adjustments to cooling and airflow.
- **Data Analytics and AI:** Advanced analytics and artificial intelligence (AI) tools analyze data center performance and make predictive recommendations for optimizing cooling and mitigating heat.

Renewable Energy Integration:

- **Green Power Sources:** Data centers are increasingly powered by renewable energy sources like solar and wind to reduce their carbon footprint and reliance on fossil fuels for cooling.

Heat Reuse:

- **Waste Heat Recovery:** Some data centers capture and repurpose waste heat generated by servers for other purposes, such as heating nearby buildings or generating electricity.

Efficient Layout and Rack Arrangement:

- Data centers are designed with efficient rack layouts and spacing to ensure proper airflow and prevent the formation of hot spots.

These contemporary data center design principles demonstrate a commitment to energy efficiency, sustainability, and effective heat mitigation. They help data center operators manage the challenges posed by heat generation while minimizing operational costs and environmental impact[4].

5. ADDITIONAL TECHNOLOGIES FOR DESIGNING ENERGY-EFFICIENT DATA CENTERS

Some additional strategies and technologies for designing energy-efficient data centers and exploring alternative cooling methods:

- **Data Center Layout and Design**: Optimize the physical layout and design of the data center to minimize airflow obstructions, reduce cable clutter, and ensure efficient heat dissipation.
- **Renewable Energy Credits (RECs)**: Consider purchasing renewable energy credits to offset the energy consumption of the data center, even if it's not directly powered by renewable sources.
- **Energy Storage**: Implement energy storage solutions, such as batteries, to store excess energy during off-peak hours and use it during peak demand times, reducing energy costs.
- **Dynamic Power Management**: Use dynamic power management techniques to adjust server power consumption based on workload demands, allowing servers to enter low-power states during periods of lower activity.
- **Edge Computing**: Deploy edge computing nodes closer to end-users to reduce data transfer distances and decrease the need for large centralized data centers, which can be more energy-efficient for specific use cases.
- **Chilled Water Systems**: Utilize chilled water systems for cooling, which can be more energy-efficient than traditional air-based cooling methods.
- **Hybrid Cooling Systems**: Combine multiple cooling methods, such as using air cooling for part of the year and water cooling during warmer months, to optimize energy use.
- **Thermal Management Solutions**: Implement thermal management solutions, such as heat exchangers or phase-change materials, to enhance heat dissipation and cooling efficiency.
- **Heat-Resilient Hardware**: Invest in hardware that can operate reliably at higher temperatures, allowing for warmer data center environments and reducing cooling requirements.
- **Energy-Efficient Lighting**: Use energy-efficient LED lighting with motion sensors to reduce lighting-

related energy consumption in the data center.

- **Green Roofs and Building Design**: Incorporate green roof designs and energy-efficient building envelopes to reduce the overall heat load on the data center facility.
- **Data Center Consolidation**: Consider consolidating multiple smaller data centers into a larger, more efficient facility, reducing the overall energy footprint.
- **Waste Heat Reuse**: Explore opportunities to reuse waste heat for other purposes, such as heating nearby buildings, greenhouses, or industrial processes.
- **Employee Education**: Educate data center staff about energy-efficient practices and the importance of maintaining a sustainable data center environment.
- **Government Incentives**: Investigate local, state, or national government incentives and rebates for implementing energy-efficient data center technologies and practices.

6. EMERGING TRENDS IN DATA CENTER DESIGN AND COOLING TECHNOLOGIES

Emerging trends in data center design and cooling technologies are driven by the need to improve energy efficiency, reduce environmental impact, enhance scalability, and meet the ever-increasing demand for computing resources. These trends are shaping the future of data center infrastructure. Here are some notable emerging trends:

Liquid Cooling Solutions:

- **Immersive Liquid Cooling:** Data centers are exploring immersive cooling solutions where entire servers or racks are submerged in a non-conductive liquid coolant. This method is highly efficient at heat removal and allows for higher server density.
- **Rear-Door Heat Exchangers:** Rear-door heat exchangers, which circulate coolant directly through server racks, are becoming more common. They efficiently capture and remove heat from servers while maintaining a familiar form factor.

Edge Data Centers:

- **Edge Computing:** The rise of edge computing, driven by applications like IoT and real-time data processing, has led to the development of smaller, distributed data centers closer to end-users. These facilities are designed to handle localized workloads, reducing latency and the need for long-haul data transfers.

Modular Data Center Design:

- **Prefabricated Modules:** Modular data centers consist of pre-engineered and pre-fabricated components that can be quickly deployed and scaled as needed. They offer flexibility, energy efficiency, and reduced construction time compared to traditional data centers.

Renewable Energy Integration:

- **Green Power:** Data centers are increasingly powered by renewable energy sources like solar and wind. Some data centers are also integrating energy storage solutions to balance power supply and demand more efficiently.

AI-Powered Cooling and Management:

- **AI for Predictive Maintenance:** Artificial intelligence and machine learning are being used to predict equipment failures and optimize cooling and power usage in real-time, reducing downtime and improving energy efficiency.

Heat Reuse:

- **District Heating:** Waste heat from data centers is being used to heat nearby buildings, providing a sustainable way to repurpose excess thermal energy.

Edge AI and Machine Learning:

- **Local Processing:** Edge data centers are equipped with AI and machine learning capabilities to process and analyze data locally, reducing the need to send large volumes of data to centralized data centers.

Efficient Hardware Design:

- **Energy-Efficient Processors:** Hardware manufacturers are producing more energy-efficient CPUs and GPUs that generate less heat while maintaining high performance levels.
- **Custom Accelerators:** Custom accelerators, like TPUs (Tensor Processing Units) for AI workloads, are designed for specific tasks, improving performance and energy efficiency.

Advanced Cooling Architectures:

- **Advanced Cooling Fluids:** Some liquid cooling solutions are experimenting with advanced coolants that improve thermal efficiency and reduce environmental impact.
- **Evaporative Cooling:** Evaporative cooling systems are becoming more efficient and are being used in conjunction with other cooling methods to reduce energy consumption.

Zero-Emission Data Centers:

- Some data centers are exploring ways to achieve carbon neutrality by investing in renewable energy, carbon offset programs, and energy-efficient infrastructure.
- **Containerized Data Centers:** Data center containers or data center as a service (DCaaS), are becoming popular for rapid deployment and scalability. These containerized solutions are designed for specific applications and can be located at the edge or within a traditional data center.

These emerging trends in data center design and cooling technologies reflect the industry's commitment to sustainability, energy efficiency, and the ability to adapt to

evolving computing demands. As data centers continue to evolve, these trends will shape the way data is processed and managed in the future[5].

7. CONCLUSION

Efficient cooling is essential not only for the reliable operation of the equipment but also for energy efficiency and cost savings. Data centers are among the largest consumers of energy in the world, and effective cooling strategies are crucial for reducing energy consumption and environmental impact. In recent years, there has been a growing emphasis on designing more energy-efficient data centers and exploring alternative cooling methods to minimize the environmental footprint of data center operations. Designing more energy-efficient data centers and exploring alternative cooling methods are crucial steps in reducing the environmental impact and operating costs of data center operations.

Future data center development and sustainability efforts will be significantly influenced by a range of factors, including technological advancements, environmental concerns, and the growing demand for digital services. The implications for future data center development and sustainability efforts revolve around the need to balance increasing computational demands with environmental responsibility. Sustainable data center design, energy-efficient technologies, and a commitment to reducing carbon emissions will be essential as data centers continue to evolve to meet the challenges of the digital age.

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EQUITY CROWDFUNDING ECOSYSTEM: ITS LEGALITY ISSUES AND CHALLENGES IN INDIA

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ABSTRACT

After financial crises of 2008, use of alternative funding methods have increased substantially in various forms. Technologies such as Artificial Intelligence, IoT, Machine Learning, Blockchain has reshaped the landscape of funding sourced by new businesses these days. As India reach parity with technologically advanced economies we are witnessing the growth of model like crowdfunding (CF) to secure financing for projects and ventures. In its true meaning crowdfunding is alternative to other traditional sources of financing early stage business like venture capital, financial institutions, incubators or business angels or an alternative to fund social projects or events. Its aim is to raise a predetermined amount of capital within a timeframe for predetermined purpose. The viability, novelty or social appeal of the purpose needs to be able to attract small amount of fund from large number of investors via online platform. The success story of crowdfunding platforms like kickstarter indiegogo and Patreon shows the potential of this source in financing projects in front line economies.

Using internet platforms for raising fund has its own share of risk for all the parties involved. Investor or public at large are exposed to losses and risk which may lead to loss of confidence in financial system of a country. Carefully laid down regulatory framework is the way to harness the potential benefit of crowdfunding platforms. The paper discusses about the CF regulation regimes around the world and provides an overview of legal provisions in India for managing equity crowdfunding activities to achieve the objectives of protecting investors, putting boundaries and eligibility criteria for project owners and duties & responsibilities of intermediary.

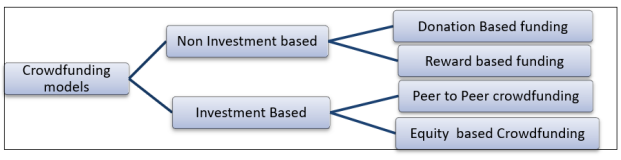
Keywords: Crowdfunding, SEBI, Private Placement.

1. INTRODUCTION

Crowdfunding is a way of raising money to finance projects and businesses. It enables fundraisers to collect money from a large number of people via online platforms. Crowdfunding is connected with social media and internet for fund raising. Success of campaign of crowdfunding is derived from increased users of internet and social media in the country. It is gaining traction with market size of US$ 504 million in 2023 (Statista.com). In simple words crowdfunding platforms are the online place that enables interaction between fundraiser and the crowd. The object of raising fund could be for the purpose ranging from pure community services to participation for financial return in high growth initial stage venture projects such as making films, public interest cause, medical treatments or funding new commercial ideas.

The Crowdfunding Market size is expected to grow from USD 1.30 billion in 2023 to USD 2.69 billion by 2028, at a CAGR of 15.70% during the forecast period (2023-2028) (mordorintelligence.com)

Types of crowdfunding



Using crowdfunding, start-ups and their founders are able to raise financing by accessing investors who are beyond their personal networks and connections (Hu 2015). Using the Internet, they are able to obtain funds from a wider range of investors from varied geographies. Due to the lower cost of such capital, crowdfunding offers an affordable and attractive fundraising option to start-ups (Kirby and Worner 2013). All of these factors are expected to stimulate a vibrant environment for entrepreneurship that ultimately promotes economic growth.

2. REVIEW OF LITERATURE

Mazzocchini, F.J. and Lucarelli, C. (2023), in their paper aims to provide a multidisciplinary framework that allows an integrated understanding of reasons of success or failure in equity crowdfunding (ECF). They concluded that that the outcome of an ECF campaign is related to signals conveyed by entrepreneurs in the form of hard information and soft information catalyzed by digital media and external factors that allow for the alleviation of information asymmetries. M. Abdeldayem, S. Aldulaimi (2022) in their empirical study of 1145 respondents examined the crowdfunding economic success in the gulf region. The findings reveal that CF's presence positively impacts economic fundraising success and that crowdfunding platforms are an effective financial technology (Fintech) tool for financing entrepreneurs. Sanjana.et.al (2020) in their paper

highlighted the cross-jurisdictional matters as another challenging aspect with regard to Crowdfunding which can make the issue more complicated in case of defiance to the Information Technology Act or Indian Penal Code. Hasnan Baber (2019) in his paper aimed to explore the factors of subjective norms and their influence on shaping the intention of people to participate in crowdfunding in India.

3. OBJECTIVES OF STUDY AND METHODOLOGY

Fund raising has been an important challenge for new venture or purpose. Entrepreneurs are finding new sources to secure funding in cost effective manner. The role played by crowdfunding platforms is significant in this context and so is the need for comprehensive regulatory framework at place. The aim of this paper is to work on following objectives-

Objectives of the study

- To understand the conceptual framework of crowdfunding platforms.
- To study the legal regulatory framework governing crowdfunding in India.
- To highlight the significance and challenges in implement equity-based crowdfunding in India in comparison to front line economies where it is gaining traction.

In order to achieve these objectives a descriptive study is done where information is collected from published articles, journals, books and consultation papers of the regulatory authorities.

4. DISCUSSION

Securities regulation is important for the firms that are looking forward to raise large capital to general public. Equity crowdfunding in a way allows small entrepreneur to access general public for fundraising. Use of internet and social media made crowdfunding a feasible alternative for small entrepreneurs to offer small amount to public without incurring huge cost and complex procedures. In recent years world has witnessed the growing amount of fund raised through crowdfunding platform in countries that has framed law that permit equity crowdfunding. This has raised debate about reforming security regulation to include equity crowdfunding and cater the early stage financing need of ventures.

The need for equity-based crowdfunding is important because it offers more flexible terms than traditional forms of financing like bank loans or venture capital firms. It also provides early stage startups with much needed seed funding that would otherwise not be available easily or at all. Additionally, it helps small businesses access larger pools of funds which may enable them to scale faster than they could if relying solely on revenues from sales or services provided.

In the wake of increasing adaptability of crowdfunding platforms and few incidents of financial scam like Sahara scam, SEBI has released a consultation paper concerning the regulatory framework governing equity-based crowdfunding in India to address the concern of investors about financial scandals, corporate governance problems or information asymmetries. It mentioned that equity-based crowdfunding is banned in India and does not fall under the legal umbrella of MCA or SEBI. However, donation based and reward-based crowdfunding is allowed in India.

Existing regulatory regime in the world

Basically, three regulatory regimes can be identified around world for equity crowdfunding. First one could the regime where regulation banned equity crowdfunding per se while relaxing the existing law of private placement or alternate fund raising by companies. The second case could be one where crowdfunding although it is not banned nut regulation keep very high entry barrier in the market that equity crowdfunding is kind of non-existing. In the third case equity crowdfunding is allowed and legal while regulators define the clear-cut guidelines as to eligibility of backers, limit on size, capping on investment and regarding disclosure norms. The legislation governing crowdfunding is so stringently set that it makes ECF less viable and less preferred.

In this regard USA passed JOBS Act in April 2012 to allow equity crowdfunding by amending existing securities law. This has boosted start up fundraising in line with Angel investment and Venture fund.

Italy regulators passed a comprehensive legislation on crowdfunding. CONSOB regulation is one of the first Jurisdictions which provide for fund raising through online portal. The regulation also allows liquidity to investors by selling holding to third party. Portal's Registration criteria and their duties to warn backers about the risk of CF are clearly laid down.

UK's Financial Conduct Authority has allowed only sophisticated and accredited investors with approved net worth limit to participate in crowdfunding.

Malaysian government has issued a consultation paper in 2014 to enumerate legal framework for carrying out equity crowdfunding. The legislation set out duties for Portals to verify claims of companies. Investors have been divided into various segments; accredited investors have no cap on investment while upper limit is set for retail investor for particular time duration.

The Financial Market Conduct Act 2013 of New Zealand has been tailored to set out eligibility criteria for Portals to seek License and rules about procedural disclosures.

Singapore Monetary Authority has taken a firm stand to make ECF available only to restricted number of people and hence crowdfunding portals cannot advertise to general public.

5. EXISTING REGIME IN INDIA

In India, current regulations on equity-based crowdfunding are fairly negligent compared to other countries such as the United States. In general, Indian companies can issue up to Rs 5 crore (US$674 thousand) per year without having to register with SEBI (Securities Exchange Board of India). Furthermore, potential investors must be pre-qualified by SEBI before they are allowed to participate in any offer through an approved intermediary. Insertion of Sec 24 in Companies Act 2014 has amended the existing regime of private placement in India. SEBI consultation paper (2014) on crowdfunding provides a background and a framework that can be adopted to make CF mechanism evolve in India. This paper discussed various types of crowdfunding model and related regulation. The paper proposed an orthodox view on ECF, while donation based and reward-based CFs were allowed. While the Companies Act was in the process of being reformed, India was struck by several scandals involving illegal offerings of securities by certain companies, which influenced fundamentally the reform process on securities regulation. The Sahara scam warned the Securities Regulators for an urgent need to reformed the norms and restrictions of private placement and listing requirement to prevent another debacle in future. Besides private placement other mechanism of fund raising in India include –

- SME platform where Small and Medium Enterprises (SME) raise funds from the public and get listed at the exchange by selling equities in the company. The listing norms have been written to specifically suit SMEs and Initial Public Offering has been simplified and some relaxation regarding draft document and financial reporting has given. A primary reason leading to separate SME Exchanges is due to difficulties faced by SMEs in gaining visibility or attracting decent trading volumes when listed along with other stocks in the main exchanges.
- Institutional Trading Platform (ITP) is another place where start-up and SME can list themselves for visibility to secure seed funding without any public issue of their prospectus. The aim is to provide better visibility and wider investor base, relaxed compliance and cost-effective listing and tax benefits to long term Investors.
- Alternate Investment Fund (AIF) and Venture Capital Fund (VCF) are other mechanism for fund raising regulated by SEBI.

The need to regulate equity-based crowdfunding (ECF)

The primary motivation of the regulation governing equity-based crowdfunding is protection of investor interest. While there are many issues that must find place in the regulation governing equity-based crowdfunding, some of major one could be

- **For investor:** To limit the risk exposure of individual investor there should be a capping on the amount invested by each investor in one project or may the annual ceiling should be specified. Capping on the investment through crowdfunding should be based their annual income or net worth.
- **For online entity:** Functions and responsibilities laid down as guidelines for online crowdfunding platforms should be widened to include investor education and precautionary steps taken to reduce risk of misappropriation of fund. Duties with respect to undertaking due diligence, checking disclosure requirements, operational duties to check investment limits etc should be clearly provisioned with penalties for negligence.
- **For fund seeker:** The project limit of fund that can be raised through crowdfunding platform. The regulation regarding disclosure of all material facts in line similar as already enacted in securities law at place

6. CHALLENGES

Section 2(68)(iii) of Companies Act restricts private companies to invite public for subscribe to their share capital and Sec 42(2) limit the number of subscribers upto 200 persons. Crowdfunding model per se fall in between private placement and public issue. The big issue here is of overlapping jurisdiction of SEBI and MCA as equity crowdfunding has components of both private placement and public offer. Furthermore, following challenges can be identified with regard to equity-based crowdfunding-

- Lack of trust and transparency
- Limited opportunities
- Lack of scalability
- Limited exit options for donors
- Lack of due diligence and understanding
- Information related failures- as the stake of an individual investor is small so it is not time and cost effective to indulge in due diligence
- A bottom –up approach of screening by crowd is far from perfection. Also review and revision by crowd gives mixed results and hence may be misleading.
- The crowd is subject to herding behavior. The rating and information from crowd reflected in accumulated capital leads to reputation signaling and is a not a good sign of quality (Ajay K.et al, 2013).
- Loss of secrecy of idea and intellectual property due to early stage public disclosure.

7. CONCLUSION

Crowdfunding has different opportunities and challenges for entrepreneurs and investors in countries that have regulation at place verses countries that have not framed laws governing crowdfunding. Regulated countries offer stability, security and legitimacy but also have complexities and cost. On the contrary, unregulated countries offer flexibility, creativity and potential but also volatility and vulnerability. In recent years crowdfunding has evolved as a feasible and common alternative channel for entrepreneurs to fund their early stage businesses in the countries that has regulation for equity crowdfunding at place. In order to ensure financial inclusion and fair competition in security market there is a need to amend the existing legal framework for equity crowdfunding to make it contribute early stage fundraising. Amendment to section

42 of Companies Act is required to regulate hassel free crowdfunding eco system in India. At present, the consultation paper of SEBI released in 2014 proposed a regulatory mechanism that balances investor protection and alternative source of fundraising. However, has banned equity-based crowdfunding in India.

The regulation of growing equity crowdfunding has served to access already accredited investors and more or less set to follow set procedures similar to private funding.

Although it is hard to visualize how equity crowdfunding will progress and make a space among alternative fund sources. Keeping aside the inherent risk in financing new venture there are addition issues also which need to be taken care of while framing euity-crowdfund legislation in growing country like India. Several macroeconomic factors are required for its evolution; one among them is the number of mobile users and influence of social media marketing that can a supporting aspect for success of equity – crowdfunding.

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PROMOTING WOMEN ENTREPRENEURSHIP IN EASTERN UTTAR PRADESH: A CASE STUDY OF SIDDHARTH NAGAR

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ABSTRACT

Without a doubt, female entrepreneurship increases the prosperity of the country as a whole and of the family. In terms of their willingness to engage in activities that were once thought to be exclusively for men, women today have shown that they are unmatched in terms of their ability to contribute to the expansion of the economy. A crucial part of an impoverished nation's economic development is being played by entrepreneurs. Women entrepreneur organize, industries for a variety of reasons, including their expertise and experience, their aptitude for business, and a strong desire to make a difference. According to the World Bank, investing more in women's businesses than in those of males promotes a country's economic development. Women's business empowerment helps to end inequality and fight poverty. In the rapidly evolving society of a nation like India, entrepreneurship is crucial. It is now known that entrepreneurial women possess entrepreneurial skills that may be developed to help them transition from being job searchers to job providers. The value of female entrepreneurship has been recognized by the government. It provides a range of programs for female entrepreneurs as a result. Even though the government has organized women into several associations, they are not yet prepared to start their own business. With a vision to promote the sustainable development of women entrepreneurs for balanced growth in the country, Startup India is committed towards strengthening women entrepreneurship in India through initiatives, schemes, creation of enabling networks and communities and activating partnerships among diverse stakeholders.

Keywords: SEED CAPITAL, Policy Implementation Unit (PIU), MSMEs

1. INTRODUCTION

The act of establishing and owning a business that empowers women financially and improves both their standing in society and economic power is referred to as "women entrepreneurship." Thus, women-owned businesses—which account for almost 25% of all businesses—have had a significant impact on almost every sector of the economy. In India, women's "entrepreneurship" is extremely rare, particularly in the official sector, where it accounts for less than 5% of all businesses. One understudied group of entrepreneurs in particular is women. We don't know a lot about female entrepreneurs, and failing to recognize this significant group of people is a major blind spot in any attempt to boost the overall number of entrepreneurs operating in our economy.

The obstacles facing female entrepreneurs are considerably more severe in the age of globalization. They are contributing significantly to the socioeconomic advancement of every nation. They are currently changing the global economy as a result of their involvement. It is believed that roughly one-third of business organizations worldwide are controlled by women. The situation is almost the same in India. The invaluable work that women have done in the field of entrepreneurship can be summed up as follows:

- The encouragement of capital production through the mobilization of the public's idle savings
- Immediate employment creation to aid in the reduction of the unemployment issue
- Encouraging balanced regional growth
- Promote the efficient use of resources and expertise that could otherwise go unused.
- Advocating for India's export Trade

1.1 CHARACTERISTICS OF WOMAN ENTREPRENEURS IN INDIA

The whole enterprise is managed by a woman or group of women. She creates a variety of strategies and carries them out under her own direction and control. A woman business owner accepts measured risks. She accepts risk and meets uncertainty with confidence. She needs to set aside money and wait for God to return. The most important ability needed for industrial development is the capacity to create a sound organization. The other facts—land, labor, and capital—are assembled, coordinated, organized, and managed by a woman entrepreneur. Being self-assured is crucial for women entrepreneurs. She ought to have confidence in her skills and abilities. Making decisions is a woman entrepreneur's primary responsibility. She makes a number of decisions on the operations of her business.

Entrepreneur is energetic, resourceful, alert to new opportunities, able to adjust to changing conditions and willing to assume risks involved in the change.

- She is interested in advancing technologically and in improving the quality of products.
- She is interested in expanding the scale of operations and reinvesting earnings.

In 1992 described entrepreneur's characteristics in three categories:

- **Technical Skills:** Writing, oral communication, environment monitoring, technical business management, technological knowledge, interpersonal,

listing, ability to organize, network building, coaching, and teamwork are examples of technical talents.

- **Business Management Skills:** Planning and goal setting, decision making, human relations, marketing, finance, accounting, management, control, negotiation, venture launch, and managing growth.
- **Personal Entrepreneurial Skills:** Inner control, discipline, risk- taking, innovative, change -oriented, persistent, visionary leader, ability to manage change.

Entrepreneurial Development Institute of India describes the entrepreneurial competencies as under:

- **Initiative:** Entrepreneurs displaying this competency undertake a task even before being asked or forced to circumstances. Such an initiative -taking capability impacts efficiency and becomes the basis of sustainable competitive advantage.
- **Seeking and Acting on Opportunities:** The successful entrepreneurs intensify their access to resources, opportunities, finance, land, and equipment. Theyhave this unique entrepreneurial ability that helps them seize unusual opportunities.
- **Persistence:** An important competency that makes all the entrepreneur repository of gift and perseverance. Obstacles do not dishearten such an entrepreneur and he continue making efforts to emerge victorious from problems.
- **Information Seeking:** He is more deterministic because competency is present. In order to maximize the organization's success, he finds numerous information sources and makes sure that information is flowing continuously.
- **Concern for High quality of Work:** The primary endeavor of entrepreneur with such competency is to beat the existing standards of excellence. It is his concern for the high quality of work that gives him a sense of satisfaction and achievement.

2. OBJECTIVES OF STUDY

- To study the impact of assistance by the government on women's entrepreneurship.
- To critically examine the problems faced by women entrepreneurs in Siddharth Nagar

3. METHODOLOGY

The documentation is based on a thorough analysis of secondary data gathered from numerous books, National & International Journals, and public and commercial publications available on numerous websites and in libraries that focus on various facets of women entrepreneurs. The nature of this study is descriptive. The study was carried out and completed in the manner described below in order to achieve the aforementioned goals:

- Reviewing of existing kinds of literature, reports, regulations, laws, etc.
- For quantitative analysis, secondary data have been used.

4. REVIEW OF LITERATURE

Dr. Sunil Deshpande & Ms. Sunita Sethi, (2017), The encouraging and discouraging factors in an enterprise and to provide solutions to the various problems faced by the women entrepreneur group are discussed in their study paper. For the betterment of women entrepreneurs, the emphasis should be on educating women strata of population, spreading awareness and consciousness amongst women to outshine in the enterprise field, helping them recognize their strengths, and important position in the society, and the tremendous contribution.

Singh and Surinder Pal, (2018) This study explains the motivations and influencing elements for women's entry into business. He stated that the main barriers to the growth of women's entrepreneurship are a lack of interaction with successful entrepreneurs, social rejection as women entrepreneurs, the need to care for one's family, gender discrimination, a lack of a network, and bankers' low priority for lending to women entrepreneurs. He proposed taking corrective action by supporting microbusinesses, dismantling institutional structures, and projecting.

Greene et.al., (2019), Analyze the research and publications that have contributed to the field of female entrepreneurship. The study categorized several journals and sources of research based on criteria related to women's entrepreneurship, such as gender discrimination, personal characteristics, financial difficulties, business units, context, and feminist viewpoints.

Singh and Raina (2020). evaluated the policies of the Indian government for women and described the issues and difficulties experienced by women entrepreneurs in India. The primary goal of the study was to ascertain the situation of women entrepreneurs in India. According to the survey, more and more women are starting their own businesses in contemporary India, particularly MSMEs. It was also admirable that Indian women had carved out a place for themselves in the world that is dominated by men. It also demonstrated how successfully Indian women can handle their family responsibilities and professional obligations.

According to Roshan Lal and Badri Narayan H.S (2021) a framework for analysis, women the success of entrepreneurs is crucial for the country's economic development. There are some challenges that should be avoided in order to promote national development. Encouragement should be given in a way that enables women to participate and launch any type of business. Women entrepreneurs should receive the right training from the government. Government should employ cutting-edge techniques to spread information across all functional areas.

5. START-UPS POLICIES IN UTTAR PRADESH

- Uttar Pradesh Startup Policy 2020
- Uttar Pradesh Data Center Policy 2021
- Uttar Pradesh Electronics Manufacturing Policy 2020
- Uttar Pradesh Electronics Manufacturing Policy 2017

- Uttar Pradesh IT 2023
- Industrial Investment and Employment Promotion Policy of Uttar Pradesh 2017
- Uttar Pradesh Micro, Small and Medium Enterprises Promotion Policy-2017
- UttarPradesh Electric Vehicle Manufacturing and MobilityPolicy
- Uttar Pradesh Défense, Aerospace Unit and Employment Promotion Policy.
- Uttar Pradesh Pharmaceutical Industry Policy, 2018

Policies and programs for women Entrepreneurs are:
Indian women are moving forward and participating in various entrepreneurial activities. The Integrated Rural Development Program (IRDP), Training of Rural Youth for Self-Employment (TRYSEM), Development of Women and Children in Rural Areas (DWRCA), Entrepreneurship Development Programs (EDPs), and Prime Minister Rogers Yojana (PMRY) are just a few of the various programs run by the Government of India and Planning Commission. The government has also extended subsidies, tax exemption schemes, and c0ncessi0ns to female entrepreneurs.

- Trade Related Entrepreneurship Assistance and Development (TREAD) Scheme for Women - Provided by the Ministry of Micro, Small & Medium Enterprises.
- Integrated Support Scheme provided by the National Small Industries Corporation (NSIC)

Total	Micro Enterprises	Small Enterprises	Medium Enterprises
25	22.06	2.961	0.11
Total Percentage	87.82%	11.74%	0.44%

- Prime Minister's Employment Generation Program (PMEGP) provided by the Khadi and Village Industries Commission (KVIC).
- Priyadarshini Yojana Scheme by Bank of India
- Support to Training and Employment Program for Women (STEP) provided under Schemes of Ministry of Women and Child Development
- Swayam Siddha provided under Schemes of Ministry of Women and Child Development
- Micro & Small Enterprises Cluster Development Program (MSE-CDP)
- Credit Guarantee Fund scheme
- SIDBI Marketing Fund for Women (MFW)
- Management Development Programs
- Indira mahaila Yojana

Number of Registrations Done in FY2022-23
SIDDHARTH NAGAR (U.P)
Source -Ministry of MSME

6. CONCLUSION

By utilizing incentives, female entrepreneurs have improved their innovative endeavors. The variety of business endeavours that Uttar Pradesh's female entrepreneurs undertook led to the state's economy growing and thousands of new jobs being created. Women entrepreneurs founded and oversaw companies with a strong sense of self-motivation, inventiveness, aptitude, and basic local knowledge. While business houses are undoubtedly necessary to oversee huge corporations, these sectors should also help thousands of small and medium-sized enterprises that will meet their demands and provide employment for thousands of people in Uttar Pradesh's rural and semi-urban areas.

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ENHANCING CLOUD-TO-CLOUD MIGRATION SECURITY WITH CLOUDGUARD: STRATEGIES AND BEST PRACTICES

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ABSTRACT

Cloud-to-cloud migration is a pivotal component of modern IT strategies, enabling organizations to harness the benefits of multiple cloud environments. However, amidst this transition, ensuring the security of data and applications is of paramount concern. This research paper investigates the significance of security measures in cloud-to-cloud migration and explores strategies and best practices for enhancing security using CloudGuard by Check Point. Through an extensive literature review, we identify and analyze the key security challenges inherent in cloud-to-cloud migration, encompassing data privacy, access control, network security, encryption, and threat detection. We present CloudGuard as a robust security solution, delving into its features and capabilities, which offer tailored security measures for mitigating these challenges.

Keywords: CloudGuard, Network Security, Data Migration.

1. INTRODUCTION

Cloud-to-cloud migration, also known as C2C migration, refers to the process of transferring data, applications, workloads, and IT resources from one cloud service provider or environment to another. This migration strategy is commonly used by organizations seeking to optimize their cloud infrastructure, reduce costs, improve performance, enhance security, or address other specific business needs.

Security during cloud-to-cloud migration safeguards an organization's assets, reputation, and compliance with legal and regulatory requirements. It ensures that the migration process is not a point of vulnerability and minimizes the risks associated with data loss, breaches, and service interruptions. As organizations increasingly rely on cloud services, robust security practices throughout the migration process are essential for safe and successful transitions.

CloudGuard, developed by Check Point, plays a crucial role in enhancing security in cloud environments, including during cloud-to-cloud migration. It provides a comprehensive set of security features and capabilities designed to protect cloud assets, data, and applications. Here's an overview of the key roles CloudGuard plays in enhancing security:

CloudGuard, with its comprehensive security capabilities, enhances the overall security posture of organizations in the cloud. It offers protection against a wide range of threats and vulnerabilities, helping organizations confidently migrate to the cloud, secure their cloud workloads, and meet compliance requirements while maintaining business continuity.

2. CLOUD-TO-CLOUD MIGRATION SECURITY CHALLENGES

Common security challenges faced during cloud-to-cloud migration.

Security during cloud-to-cloud migration is of paramount importance due to several critical reasons:

Data Protection: Data is the lifeblood of any organization, and during migration, sensitive data is in transit and potentially vulnerable. Security measures ensure that data remains confidential, is not tampered with, and remains available to authorized users only.

Data Privacy Compliance: Many industries and regions have stringent data privacy regulations (e.g., GDPR, HIPAA). Ensuring that data remains compliant during migration is essential to avoid legal and financial penalties.

Data Integrity: During migration, data can be at risk of corruption or loss. Security measures, such as encryption and checksums, help maintain data integrity throughout the migration process.

Access Control: Unauthorized access to data or applications during migration can lead to data breaches or unauthorized changes. Proper access controls and authentication mechanisms ensure that only authorized personnel can access and manage resources.

Threat Mitigation: Malicious actors are always looking for vulnerabilities to exploit. During migration, security measures protect against threats like data theft, ransomware attacks, and other malicious activities.

Business Continuity: Downtime during migration can disrupt business operations. Security practices help ensure that the migration process is as seamless as possible, minimizing disruptions and maintaining business continuity.

Mitigating Insider Threats: Insider threats, whether intentional or accidental, can pose significant risks during migration. Security measures help detect and prevent these

threats, reducing the likelihood of data breaches.

Vendor Risk Management: Organizations often rely on third-party tools and services during migration. Security practices help assess and mitigate the risks associated with these vendors, ensuring they meet security standards.

Configuration Security: Misconfigurations are a common source of vulnerabilities. Proper securities practices help ensure that cloud resources in both the source and target environments are correctly configured to minimize security risks.

Monitoring and Auditing: Security during migration involves continuous monitoring and auditing to detect and respond to security incidents promptly. This proactive approach helps in identifying and addressing vulnerabilities in real-time.

Credential Management: Secure handling of credentials, such as API keys and access tokens, is vital to prevent unauthorized access or misuse during migration.

Regulatory Requirements: Depending on the industry, organizations must adhere to various regulations and compliance standards. Security practices ensure that these requirements are met, even during the migration process.

Reputation Protection: A security breach during migration can damage an organization's reputation, erode trust among customers and partners, and lead to financial losses. Protecting the organization's reputation is crucial.

3. CLOUDGUARD: OVERVIEW AND FEATURES

CloudGuard, developed by Check Point, plays a crucial role in enhancing security in cloud environments, including during cloud-to-cloud migration. It provides a comprehensive set of security features and capabilities designed to protect cloud assets, data, and applications.

Fig 1: CloudGuard implementing multi-layered Protection

CloudGuard, with its comprehensive security capabilities, enhances the overall security posture of organizations in the cloud. It offers protection against a wide range of threats and vulnerabilities, helping organizations confidently migrate to the cloud, secure their cloud workloads, and meet compliance requirements while maintaining business continuity.

It provides network security , data security, Application security.

4. STRATEGIES FOR SECURING CLOUD-TO-CLOUD MIGRATION WITH CLOUDGUARD

Discuss various strategies and best practices for enhancing security during cloud-to-cloud migration using CloudGuard.

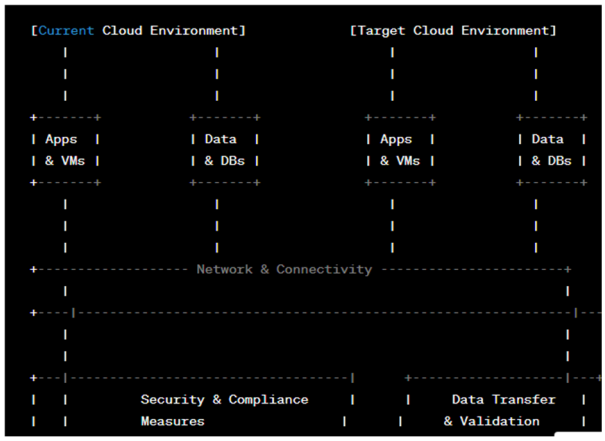

Fig 2: CloudGuard ensures cloud to cloud migration

Network Security:

- **Firewall Protection:** CloudGuard offers a next-generation firewall (NGFW) that enforces network security policies, allowing organizations to control incoming and outgoing traffic, block malicious activities, and prevent unauthorized access.
- **Intrusion Prevention:** It includes intrusion prevention system (IPS) capabilities to detect and block known and unknown threats by analyzing network traffic and patterns.

Identity and Access Management (IAM):

- **Access Control:** CloudGuard helps manage and enforce access controls, ensuring that only authorized users and applications have access to cloud resources. It integrates with identity providers and supports role-based access control (RBAC) for fine-grained permissions.
- **Multi-Factor Authentication (MFA):** CloudGuard supports MFA, adding an extra layer of security to verify user identities.

Data Security:

- **Data Encryption:** CloudGuard provides encryption mechanisms to protect data at rest and in transit, safeguarding sensitive information from unauthorized access or interception.
- **Data Loss Prevention (DLP):** It includes DLP capabilities to monitor and prevent the unauthorized sharing or leakage of sensitive data.

Threat Detection and Prevention:

- **Threat Intelligence Integration**: CloudGuard integrates with threat intelligence feeds to stay updated

on emerging threats and vulnerabilities. It can automatically block known malicious IPs and domains.
- **Advanced Threat Prevention:** It employs advanced threat prevention techniques, such as sandboxing and threat emulation, to detect and block zero-day and advanced threats.

Application Security:
- **Web Application Firewall (WAF):** CloudGuard offers a WAF to protect web applications from common attacks like SQL injection, cross-site scripting (XSS), and others.
- **API Security:** It helps secure APIs by inspecting API traffic and preventing API-based attacks.
- **Security Policy Management:** Centralized Management: CloudGuard provides a centralized management console for defining, configuring, and enforcing security policies across multi-cloud environments. This simplifies security management and ensures consistency.

Compliance and Reporting:
- **Compliance Checks**: CloudGuard can perform compliance checks against industry standards and regulatory requirements, helping organizations maintain compliance in the cloud.
- **Reporting and Auditing:** It offers extensive reporting and auditing capabilities to track security events, generate compliance reports, and investigate incidents.

Integration with Cloud Providers:
- **Seamless Integration:** CloudGuard seamlessly integrates with major cloud service providers like AWS, Azure, and Google Cloud, extending security controls and visibility into cloud-native services.
- **Auto-Scaling Support:** It supports auto-scaling to accommodate the dynamic nature of cloud environments while maintaining security.

Incident Response and Forensics:
- **Incident Management:** CloudGuard helps organizations respond to security incidents with incident management features, facilitating incident triage, investigation, and resolution.
- **Forensic Analysis**: It enables organizations to conduct forensic analysis to understand the scope and impact of security incidents.

Continuous Monitoring:
- **Real-time Monitoring:** CloudGuard provides real-time monitoring and alerting to identify security events as they occur and respond promptly.

5. INTEGRATION WITH CLOUD SERVICE PROVIDERS

CloudGuard, developed by Check Point, is designed to seamlessly integrate with major cloud service providers (CSPs) like Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform (GCP), and others. These integrations enable organizations to extend their security controls and policies into cloud environments while taking advantage of native CSP services. Here's how CloudGuard typically integrates with cloud providers:

By integrating with these CSP-specific components and services, CloudGuard enhances security in cloud environments, provides consistent policies, and helps organizations maintain visibility and control over their cloud assets. This integration ensures that security measures align with the dynamic and scalable nature of cloud computing while leveraging the unique features and services provided by each cloud provider.

6. FUTURE TRENDS AND CHALLENGES

CloudGuard and other cloud security solutions continue to evolve to address emerging challenges and capitalize on new opportunities in the dynamic cloud computing landscape. Here are some future trends and challenges for CloudGuard:

CloudGuard will need to adapt and innovate to meet the evolving security needs of organizations operating in dynamic, multi-cloud, and hybrid cloud environments. Addressing these trends and challenges will be crucial for its continued effectiveness in securing cloud resources and data

7. CONCLUSION

Emphasize the significance of robust security measures during cloud migrations. Provide recommendations for organizations considering CloudGuard for cloud-to-cloud migration security. its effectiveness depends on proper configuration and ongoing management. To fully leverage CloudGuard during a cloud-to-cloud migration, you should work with experienced cloud security professionals who can tailor the solution to your specific needs and continuously monitor and adjust it as your environment evolves.

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A TRIPLE BOTTOM LINE APPROACH OF CORPORATE SOCIAL RESPONSIBILITY– AS A TOOL OF ACHIEVING SUSTAINABILITY

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ABSTRACT

Any activity which is doing under intention of profit is called as Business. From history there are many forms of organizations doing its business for society and to cater the needs of society. Sole proprietorship, partnership firms, company, association of persons are some business organizations. Corporate should not only earn profit and grow but they should be actively participated in well being of the society. Company should integrate social and environmental concern in their business operations and interactions. This activity has legal frame work according to Companies Act 2013 is called 'Corporate Social Responsibility'. CSR is effective from 01/04/2014.

As corporate earn profits from society hence it is moral responsibility of every corporate to minimize loss of natural resources, Practices fair business for well being of the society and future generation. The cost of profit of any business organizations should not be harmful to the society and human being as a whole. CSR is a way for a corporation to acknowledge and take responsibility for its actions that affect the market. CSR is the management concept. CSR brings and promotes sustainability development. CSR is the short-term reporting initiative where as sustainability focuses on future growth and survival of business while supporting the economic, environmental, social elements. Sustainability aims to live system capable of continued existence.

Good CSR strategy definitely creates a socially sustainable organization.

Keywords: Corporate Social Responsibility, Tripple Bottom Line, Sustainability.

1. OBJECTIVES

- To understand concept of Corporate Social Responsibility and its objectives.
- To know the relationship between CSR and sustainability or sustainable development.
- To know the importance of Tripple Bottom Line approach as a pillar of CSR and sustainability.
- To analyze the elements of Tripple Bottom Line model as a categorization of CSR areas.

2. LIMITATIONS

This paper is based on secondary data. The paper article is theoretical and can be base for future research.

3. INTRODUCTION

In India, Corporate Social Responsibility is not new although it got legal banking by virtue of section 135 of companies Act 2013. It is implemented from financial year 2014. The term CSR is wide and complex term. It is inclusive by nature. CSR involves balancing corporate citizenship and environmental responsibility to give back to communities in which they operate and with long-term business success. Companies are socially responsible to preserve environmental resources crucial to future generations.

According to UNIDO, "CSR is management concepts where by companies integrates social and environmental concerns in their business operations and interact with their stakeholders". Company should achieve a balance economic growth as well as equally attain environmental and social imperatives. Companies should allocate at least 2% of their average of net profit from the preceding three financial years towards CSR activities. The importance of inclusive growth is widely recognized as an essential part of India's quest development. Embracing CSR increase customer retention and loyalty, increase employment engagement which improves brand imaging and attract new investment opportunities and top talent which makes a difference for bottom line financials.

CSR is mainly focused on three key pillars of sustainability namely economy (profit), social (people), and environment (planet) which are known as, 'Triple Bottom Line' approach. Business in society and strategic approach of CSR aimed at giving back to society by organizing social welfare events and later requiring organizations to communicate CSR efforts to stake holders to satisfy their needs.

Sustainability or sustainable development mainly focuses on how an organization impacts the environment and society around it. By acting in a sustainable social, economic, environmentally friendly way having huge positive impact on the future of business and overall development of the society at large.

Sustainability may be defined as – 'maintaining well being

over a long perhaps even an indefinite period'. It focuses on meeting the needs present without compromising the ability of future generations to meet their needs or maintaining well-being over a long perhaps even an indefinite period.

Sustainability and CSR primarily in terms of moral obligation. They offer insight into ethical concept relevant to economic sustainability, environmental sustainability and social equity. Sustainability may be as maintaining well-being over a period perhaps even an indefinite period.

4. THE RELATIONSHIP BETWEEN CSR AND SUSTAINABILITY

Logically speaking, the polluter must pay for damage and to repair the same, that is in fact the basis for the concept of CSR (Khanna Swati, J.P. Sharma, 2014). There is direct relation between CSR and the sustainability of a source as more consumption of resources the less sustainability of the resources. Company and any business organization not only meant for only earn to profit at the cost of environment or natural source degradation. Company should take some actions to preserve nature and some source which are not renewable. By giving legal enactment regarding CSR sustainability can be achieved.

The Triple Bottom Line brought into main stream by serial entrepreneurs and sustainability authority. TBL is the concept from economics. It means company should commit to focusing as much on social environment. This theory posts that instead of one bottom line there should be three, profit, people and planet. A TBL seeks to gauge corporation's level of commitments to corporate social responsibility and its impact on the environment overtime. The concept first introduced in 1994 by John Elkington – The famed British consultant and he is also called as 'Sustainability Guru'. He measured performance in corporate America through TBL. The idea was that company managed in a way that not only makes money but which also improves people's lives and well-being of the planet.

5. MAJOR TAKE AWAYS

- TBL is that companies should focus as much on social and environmental issues as they do on profits.
- TBL consists of three elements - profits, people and planet
- TBL aims to measure the financial, social and environmental performance of company overtime.
- TBL may result in retaining employees increasing external investments, boosting sales and gaining long term operational efficiencies.
- TBL may also difficult to measure costly to implement and cause competing strategic across TBL components.

Usually in finance bottom line means profit. Business organizations should look beyond profits to include social and environmental issues to measure full cost of doing business. Companies should work simultaneously on these three bottom lines.

- **Profit –** It is the traditional measure of corporate success.
- **People –** It measures how socially responsible an organization has been through its history.
- **Planet –** These measures how environmentally responsible a firm has been. Profit must earn in ethical fair manners profit also ties to a company's responsibility to pay its lenders, creditors and employees. What is due as a sense of financial responsibility for there obligation.

People – Every individual who is in touch with the company. This includes but not limited to employees, customers, vendors. Everybody has different expectations from company or business organizations.

Planet – This is having largest deviation from purely financial reporting. It relates to environment impacts. Company is forced between a lower cost options or more environmentally – friendly alternative.

TBL approach for CSR and sustainability aims to have positive impacts on the world. It may boost employee's moral as they got favorable working condition as a result greater sales and satisfied customers increase goodwill in the market.

TBL approaches sometimes difficult to assess nonfinancial inputs and outputs.

TBL framework makes an organization realize its responsibilities towards society and econology.

6. CSR AND SUSTAINABILITY

Social sustainability – It is a part of CSR activity and it's a part TBL.

Environment sustainability – The practices or processes cause at least damages to environment.

"Triple Bottom Line was not designed to be just an accounting tool it was supposed to provoke deeper thinking about capitalism and its future". John Elkington

It expands conventional business success metrics to include an organizations contribution to social well being environmental health and fair economy.

Tripple bottom line focuses on sustainability and requires that any company weigh its actions on three independent scales – economic sustainability, social sustainability and environmental sustainability.

The connection with CSR is central to segment of tripple bottom line. CSR is defined as a responsibility among organizations to meet the needs of their stakeholdersto hold organizations accountable for their actions. Undoubtedly the triple bottom line is not only presentation of key areas of CSR. Sometimes it was criticized as it is too general concept and does not cover all important field but TBL is

inclusive concept not exclusive. Three P that is Profit, People and Planet are the pillars of CSR. According to United Nations Global Compact, there are 10 principals divided into 4 areas – Human rights, labor, environment and anticorruption. The first category is focused on protection of human rights. Labor area shall give right to create associations and collective bargaining. These 2 categories are most part consistent with the social area of tripple bottom line. Promoting environment friendly technology to challenge for the environmental issues. The lost group consists of such activities against corruption and briberyeven though this category is not mentioned in tripple bottom line but it's a part of economics.

7. CONCLUSION

As CSR activity has legally enacted in India and it is mandatory to organizations as per conditions the principals cannot be changed. tripple bottom line still can be applied even though it was introduced 30 years back. Though it is having general concept but it covers entire crucial elements. The baseline of CSR and sustainability having some with tripple bottom line approaches. This approach has important advantage of comparison with another approach. Never the less people, profit and planet are the three important fundamental on which activities of corporate are depending. To earn a profit is fundamental objective of any business organization, but at the same time from whom and for whom it is to be earned is people or society where any business organization doing any business and with use of planet means all natural resources. To protect such activities and for maintaining perpetual succession existence of any organization, CSR and sustainability is vital. Hence forth tripple bottom line approach is vital for CSR activities to achieve sustainable development.

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EMPOWERING FEMALE ENTREPRENEURS IN PURSUIT OF SUCCESS

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ABSTRACT

In today's fast - paced world where technology is at the forefront of innovation, understanding the role of IT and its seamless integration into effective management practices is critical to fostering women's entrepreneurial success. Entrepreneurship is the backbone of our country. The current ecosystem is rich with opportunities to explore. A variety of resources give both aspiring and experienced entrepreneurs the tools they need to succeed in a competitive marketplace. By combining IT skills and smart management strategies, we empower women entrepreneurs with powerful tools to make informed decisions, drive innovation, and position their ventures for sustainable success. This research paper provides guidance for entrepreneurs, businesses, researchers, scientists, and academics and focuses on the critical impact that the empowerment of women entrepreneurs has on the modern business environment.

Keywords: Feminism, Entrepreneurship, Encouragement.

1. INTRODUCTION

A female entrepreneur is a woman who organizes and manages a business, especially a corporation (US Legal, 2023). Female entrepreneurship has steadily increased in the United States over the 20th and 21st centuries, with the number of women - owned businesses increasing by 5% since 1997 (Beyond, 2019; Bureau US Census, 2023). This rise has produced wealthy, self - made women such as Coco Chanel, Diane Hendricks, Meg Whitman, and Oprah Winfrey (Forbes, 2019).

2. BACKGROUND

History & Demographics: Research shows that successful women entrepreneurs enter business as a second or third career. Because of their previous careers, women entrepreneurs enter the business world later in life, around the ages of 40 to 60. According to a report by the Global Entrepreneurship Monitor, women are nearly one - third more likely than men to start a business out of necessity (GEM Global Entrepreneurship Monitor, 2023). Because women are overtaking men in terms of educational attainment (Schumpeter, 2011), having a higher education qualification is one of the key characteristics that many successful women entrepreneurs have in common. The average self - employment rate for women under the age of 25 in OECD countries is 7.2% (OECD, 2015).

The number of self - employed women has steadily increased over the past 30 years and now stands at around 33%. Many businesses ownedby women continue to operate from the home only. This type of business tends to have limited income, and as of 2002, about 80% of her incomes were less than $50,000. This group accounted for approximately 6% of the total number of women - owned businesses. This number is expected to increase further as the children of these women entrepreneurs will contribute to the increase in women entrepreneurship. Most women - owned businesses are in the wholesale, retail, and manufacturing industries. Women entrepreneurs are making a name for themselves not only in medical and social services, but also in professional, scientific and technical services. In most OECD countries, female entrepreneurs are more likely to work in the service sector than male entrepreneurs (OECD, 2015).

In 1972, women - owned businesses accounted for 4.6% of all U.S. businesses, equivalent to approximately 1.5 million self - employed women. This number increased to 2.1 million in 1979 and 3.5 million in 1984. In 1997, there were approximately 5.4 million women - owned businesses; by 2007, that number had increased to 7.8 million. Of course, women's participation in entrepreneurship varies at different levels around the world. For example, in Pakistan women entrepreneurs account for only 1% of the population of this gender, while in Zambia 40% of women are engaged in this activity. Sub - Saharan Africa has the highest number of female entrepreneurs, accounting for 27% of the female population. Latin America and the Caribbean also have a relatively high proportion (15%). A lower proportion is

observed in the MENA/Central Asia region, where entrepreneurial activity only accounts for 4% of her. The rate is as low as 5% not only in Israel but also in developed countries in Europe and Asia.

3. MAIN FOCUS

Evolving Issues: When the world is evolving and discussions on various pertinent issues are taking place across the globe like gender equality, LGBT, diversity, climate change, sustainability etc. In many countries, we still find thatefforts of women continue to be under-represented, unrecognised or appreciated in the workforce. Talking of India only women have been in entrepreneurship from decades and decades helping husband farmers in cultivation, farming etc not only in agriculture but in various forms of cottage industries including handicraft, home-made items etc but never recognised. Now is the time to recognise them for their entrepreneurshipand how can it be an effective way of helping women find employment and gain financial independence. Among the various reasons were a lack of access to education, knowledge, training, information, finance, connectivity, business support, media, reach, measures and mentors. Now such exposures and encouragement from family as well as through various government support has startled the challenge.

This challenged was not faced only by uneducated or rural female entrepreneurs but highly educated also faced the challenge. Not only this but the presence of traditional male-female roles, together with a lack of childcare and flexible working conditions, restricted women's economic opportunities. Domestic violence against women is also widespread and was a reason for unveiling efforts of women entrepreneurs.

International implications: Recent international research shows that women in low - to middle - income countries (such as Russia and the Philippines), they were found to be more likely to engage in entrepreneurship like Country (Belgium, Sweden, Australia, etc.). A major factor that may contribute to this inequality may be due to the fact that women in low - income countries often seek additional income opportunities to support themselves and their families. Overall, 40 to 50 percent of all small businesses in developing countries are run by women (Lemon, 2012). Alternatively, this may be because displaying feminine characteristics is not considered advantageous in Western business practices. Eastern companies tend to pursue methods based on mutual respect and understanding, while Western companies expect leaders to be more ruthless, opinionated, less sensitive and respectful.

In a power struggle, women will use any means necessary, but while a man may put a bat to his opponent's head, a woman is likely to resort to other, less violent, more destructive means. Let's admit that, we have a variety of weapons in our arsenal (Jacobs, 2012). Women entrepreneurs account for approximately one - third of all female entrepreneurs worldwide. Research shows that in 2012, approximately 126 million women around the world started or already owned a new business. As for those already created, there were about 98 million. These women not only run or start their own businesses, but also employ others and participate in the growth of the economy.

A study conducted in India titled ``Barriers to Women Entrepreneurship: A Study in Urban Bangalore" concluded that despite all these limitations, there are successful women entrepreneurs. I am. Women entrepreneurs clearly need to "win" more than their male counterparts. However, this is complicated by the sociocultural environment in which women are born and raised. Social customs, caste restrictions, cultural restrictions and norms keep women behind men (Gayatridevi, 2014).

Current Challenges: Women's entrepreneurship and the formation of women's business networks are steadily increasing, but there are many challenges and obstacles faced by women entrepreneurs. A major challenge for women entrepreneurs is traditional gender roles that are structurally internalized by society. Entrepreneurship is still seen as a male - dominated field, and it can be difficult to move beyond these traditional views. In addition to confronting common stereotypes, women entrepreneurs face several obstacles related to their businesses.

- Barriers to human, social and financial capital
- Barriers to supply, especially in STEM fields
- Gendered processes in financing
- Specific barriers to fresh starts for companies
- External financing and gender discrimination based on
- Obstacles in Running a Small Business
- Obstacles in Growing Business

4. SOLUTIONS & RECOMMENDATIONS

Encouragement: In 1993, Take Your Daughters to Work Day supported girls in their career exploration. It was later expanded to ``Take Our Daughters to Work Day." Day daughter and son work. Hillary Clinton said that Investing in women is not only the right thing to do, it's also the smart thing to do. Research shows there are many support groups for women seeking business advice, women entrepreneurs, and women in business. Women from all walks of life are ready to show support they may never have received in some cases. They offer encouragement, advice and support to mothers who want to support their families through their unique vision for their business. HerCorner is a group based in Washington, DC. This group aims to enable women entrepreneurs to come together and work together to improve their businesses. Government - funded programs are available for women entrepreneurs. Information is available on the SBA Online website and in her SBAgov Facebook group. Women - only taxi companies in India, the United Arab Emirates, and Brazil support working women (Schumpeter, 2011). A successful example of women entrepreneurship in rural Bangladesh is the Infolady Social Entrepreneurship Program (ISEP). Norway celebrates female entrepreneurs of the year (Teknisk Ukeblad, 2017).

5. FUTURE RESEARCH DIRECTIONS

Reasons for Starting a Business: Many studies show that the women start their own businesses for many reasons. These reasons include the following: having an idea for a business plan, having a passion for solving a specifically related career problem, wanting to be more in control of their careers, maintaining a more balanced life, having a flexible work schedule, and taking a personal vision and turning it into a lucrative business. In addition to a strong desire to realize their vision, these women also have great multitasking abilities and are never afraid of the risks that come with self - employment. Women still face many challenges in the world of work, and being your own boss is certainly more appealing for some of the everyday problems women face outside of entrepreneurship. Although gender roles remain an integral part of their lives, some women entrepreneurs feel more in control when working for themselves.

6. CONCLUSION

Feminism: A feminist entrepreneur is an individual who applies feminist values and approaches through entrepreneurship, with the goal of improving the quality of life and wellbeing of girls and women (Orser & Elliott, 2015). Many achieve this by starting companies that are "by women, for women." Feminist entrepreneurs are motivated to enter commercial markets by a desire to create wealth and social change based on ethics of cooperation, equality, and mutual respect (Barbara et al., 2011; Orser & Joanne, 2010).

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"EXPLORING THE ROLE OF ENTREPRENEURIAL ECOSYSTEMS IN FOSTERING INNOVATION AND START-UP SUCCESS"

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ABSTRACT

Just as a good and innovative idea is crucial for start-ups, financing also plays a pivotal role in their success. Without adequate financing, an entrepreneur cannot bring their idea to fruition. New ventures require resources to succeed, with financing being one of the most critical (Gompers and Lerner, 2004; Gorman and Sahlman, 1989; Kortum and Lerner, 2000). Entrepreneurs often encounter difficulties when they are unable to secure sufficient funding for their start-ups. These challenges become more prominent when entrepreneurs lack sufficient cash flow, collateral for loans, or investors. Entrepreneurs can be individuals of various age groups, including teenagers and adults, making these problems quite common during this phase. Insufficient efforts by ventures to convince investors to invest in their start-ups also contribute to their lack of funding. Asymmetric information is another factor that can deter potential investors from committing funds. Notably, former U.S. President Barack Obama remarked in 2012 upon signing the JOBS Act to legalize equity crowd funding, stating, "For start-ups and small businesses, this bill is a potential game changer." However, many people remain unclear about how crowd funding can revolutionize the prospects of new entrepreneurs. This research paper aims to elucidate the detailed meaning of crowd funding, its advantages for new ventures, the reasons why crowd funding is essential, and explores various related aspects.

Keywords: Start-Up, Entrepreneurship.

1. INTRODUCTION

Future research can be deeper into the specific challenges faced by startups in different industries and regions. Additionally, the role of emerging technologies, such as artificial intelligence and block chain, in shaping the startups ecosystem warrants further investigation. Understanding how startups can leverage these technologies for innovation and competitive advantage will be critical for future entrepreneurial success.

Innovation and Differentiation: Innovation lies at the heart of successful startups. Entrepreneurs must identify unmet needs or problems in the market and create unique solutions that differentiate them from competitors. Case studies of companies like Apple, Tesla, and Airbnb demonstrate the power of disruptive innovation in capturing market share and driving growth.

Market Analysis and Customer-Centricity: Thorough market analysis is crucial for understanding customer preferences, pain points, and emerging trends. Entrepreneurs should conduct market research to validate their ideas and refine their products or services based on customer feedback. The rise of lean startup methodologies underscores the significance of iteration and continuous improvement.

Networking and Partnerships: Building a strong network within the startups ecosystem can provide valuable resources, mentorship, and potential partnerships. Attending industry events, joining accelerators, and leveraging online platforms can help entrepreneurs connect with investors, mentors, and fellow entrepreneurs. Collaborative partnerships can accelerate growth and provide access to new markets.

Funding Strategies: Securing adequate funding is essential for scaling a start-up. Entrepreneurs can explore various funding options such as bootstrapping, angel investment, venture capital, crowd funding, and grants. Crafting a compelling business plan and presenting a clear value proposition are crucial steps in attracting investors.

Adaptability and Resilience: The startup landscape is characterized by uncertainty, and entrepreneurs must be adaptable and resilient in the face of challenges. Flexibility in adjusting business models, strategies, and products based on market feedback is key to survival. Successful entrepreneurs are those who can pivot when necessary without losing sight of their core vision.

2. LITERATURE REVIEW

'Sustainability of Business' has become a common parlance now. Corporations around the world have been mending their strategies to make themselves a responsible part of the society. The definition of corporation is changing from a 'Profit making entity' to an integral 'Social unit'. Earlier the entities which were confined only to the maximization of shareholder's wealth are now working to create 'value for each of its stakeholders.

'Sustainable businesses of today are ideated from the term 'Sustainable Development'. The term 'Sustainable

Development' was first made official at the 1992 Earth summit in Rio de janeiro and was officially defined in 1987 by the United Nations World Commission on Environment and Development in its report 'Our Common Future' as 'a development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs'. Taking the same definition as a foundation the corporations today are working to balance the needs of its present and future of stakeholders.

Sustainable Actions of Corporations: Corporations are now becoming more conscious that to succeed in the long term they have to be environmentally and socially responsible. Many firms have adopted the 'Triple bottom line' giving due attention to the planet and people along with profits. 'A recent Harvard Business Review article confers that the companies are increasingly focused on "ESG" (environmental, social, and governance) issues. The article states that on the environment side, the big companies are setting sustainability goals, issuing sustainability reports and are pledging to become net zero in the near future and; on the social front, they have been expanding inclusion efforts, committing funds to fight racial inequity, and are more vocal about societal issues. Here we are going to discuss sector wise the sustainability efforts of some of the top companies in India.

E-Commerce: Challenges organizations face in implementing sustainability measures: There are some challenges which are ubiquitous across sectors and result in a loss of effort and time in achieving sustainable business goals. There is a lack of collaboration amongst stakeholders, which includes the government, company management, employees and the shareholders. A lack of consensus results in delays which can be otherwise easily avoided.

- Redundant reporting and inconsistencies in data result in repeated efforts and wastage of time.
- Consumers are not aware of the value of purchasing sustainable goods and services, and it results in lack of demand in the market of such products, which ultimately defeats the purpose of a sustainable business.
- It is difficult for the companies to trace each and every stage in their supply chain, which is often due to lack of transparency in data collection and analysis

Impact and Way Forward: Sustainability has become a common demand for businesses across the world. It has opened various avenues for India's products and services in both the domestic and international markets. It has given a much-needed impetus to India's growth story, while simultaneously keeping environmental damage in check. While people across the country are benefitting from employment generation and improved quality of life, the rural communities are perhaps the best benefitted from this focus on sustainable business due to the reduction in energy consumption and effective utilization of available raw materials. This has resulted in growing optimism in the country that we can be better prepared for water scarcity, social unrest due to unemployment and other challenges as we continue to implement the sustainability principles across sectors and markets.

3. METHODOLOGY

The study is purely based on secondary data sources and is descriptive in nature. The secondary sources of data are collected through published reports, journals, articles, and government sources.

Impact of Digitalisation on Statr-ups: Small and medium-sized businesses are the core of the Indian economy, significantly influencing both family incomes and important economic indexes. The use of digital technologies has altered Small and medium-sized businesses. Through enhanced communication and digital productivity tools like ERP and CRM systems, digital technology also allowed businesses to innovate and operate more efficiently.

Every element of life is significantly impacted by digital technology, which is also changing business in the global economy. It can aid start-ups in extending their domestic and global market reach. It is transforming start-ups into new forms more quickly. Anyone may become well-known in the industry with the right digital techniques and high-quality product.

Having an online presence and modernizing their digital infrastructure can provide start-ups with substantial opportunities to grow and increase their bottom line. It makes it possible for business operations to be flexible in terms of scheduling, location, and delivery. Due to greater digital contact and access to a bigger client base, start-ups can explore new markets and compete with larger industry giants. Access to e-commerce platforms enables start-ups to reduce overall spending by optimizing operational and marketing costs including call centers, trade exhibitions, and specific product advertising. Start-ups have been able to increase their capabilities and improve the user experience thanks to the development of cloud-based solutions and the freemium model, in which software's essential functionality is provided without charge but additional features, virtual goods, or proprietary functionalities may be subject to a fee. One must utilize digital technology tools and integrate their sales platform on a digital channel in order to succeed in today's fiercely competitive local and global market. In the present data-driven world, businesses that lack online presence expertise or are sluggish to adopt digital channels may struggle to survive. (Singh et al. 2023)

Government Schemes for promoting Global Trade of Start-ups through Digital Transformation: Facilitating global trade for start-ups via digital transformation demands a comprehensive strategy encompassing the establishment of a conducive environment, provision of essential assistance, and implementation of policies that foster digital preparedness and global competitiveness. Governments worldwide have acknowledged the importance of start-ups

in the economy and have put in place various measures to facilitate their global trade through digital advancement. By enacting these comprehensive policies and initiatives, governments can establish a supportive ecosystem that enables start-ups to leverage the advantages of digital transformation and expand their global footprint, thereby contributing to global economic growth, job generation, and sustainable development. Here are some key government policies and initiatives aimed at promoting the global trade of start-ups through digital transformation:

Digital Start-ups Scheme: The Digital start-ups Scheme, which was introduced by the Ministry of Micro, Small, and Medium Enterprises, aims to increase start-ups ' competitiveness by utilizing digital technologies. The program offers start-ups financial assistance for implementing a range of digital tools and technology, including e-commerce platforms, cloud computing, and digital marketing. Through the provision of subsidies for the expenditures related to technology adoption, this initiative facilitates worldwide reach and operational efficiency.

Digital India Initiative: The Government of India initiated the Digital India program with the goal of transforming the nation into a knowledge economy and society empowered by digital means. To support digital literacy, infrastructure development, and the use of digital technologies across sectors, including the government has launched a number of programs as part of this drive. The Digital India project makes it easier for start-ups to incorporate digital technologies into their operations and participate in international trade by enhancing access to high-speed internet, digital infrastructure, and e-governance services.

Start-up India Initiative: The goal of the Start-up India project is to encourage Star-ups and startups by creating an environment that is conducive to innovation and entrepreneurship. Numerous advantages are provided by the program, such as cash support, tax breaks, and streamlined regulatory compliance. The Start-up India project facilitates start-ups ability to exploit digital platforms for worldwide market expansion and cross-border trade by incentivizing the creation of digital solutions and technology-driven business models.

With the aim of fostering digital start-ups transformation and encouraging their active involvement in the international trade landscape, the Indian government has demonstrated its commitment through these policy measures. Through the elimination of obstacles related to technology adoption and export facilitation, these programs establish a conducive atmosphere for micro, small, and medium-sized enterprises to capitalize on digital platforms and enhance their worldwide market reach, hence augmenting the general expansion and competitiveness of the Indian economy

4. CONCLUSION

The rise of digital technologies has revolutionized the operational terrain for Star-ups, presenting unparalleled prospects for development, efficacy, and market extension. With the introduction of digital technologies, Star-ups have the capacity to broaden their international outreach and compete proficiently in global markets. This research endeavors to examine the influence of digital transformation on Star-ups' involvement in global trade, emphasizing pivotal topics like e-commerce, digital advertising, and governmental regulations.

The study shows that Star-ups can significantly benefit from digital transformation in their pursuit of international trade. The degree to which Star-ups may use digital technology to expand internationally depends on a number of important aspects, including e-commerce, digital marketing, and support from the government. The role of Star-ups in fostering global trade is expected to grow in importance as the digital landscape continues to change. To ensure the successful integration of Star-ups into the global digital economy and to optimize their potential for sustainable growth and competitiveness, more research and cooperative efforts are required.

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EXPLORING THE SIGNIFICANCE OF SENSORS IN THE INTERNET OF THINGS REVOLUTION

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ABSTRACT

The Internet of Things (IoT) is one of the most novel and consequential technology concerns of the present day. Recently, sensors have been contemplating a very promising aspect of scientific study. Since there are so many applications for and benefits of IoT-based sensors, they have assumed a central position. Sensors are widely employed in the monitoring of manufacturing processes in the industrial internet, as well as in monitoring our health, air quality, and home security. Thanks to IoT, humans and machines may now interact anywhere and at any time. The link can take any available path in the network and has several uses. Invention of the sensor provided a significant boost to the Internet of Things. Many sensors exchange data and have conversations to provide better services. Supply chain management, the military, irrigation, aircraft, automobiles, and retail all stand to benefit from the use of sensors.

Keywords: Sensor, Smart, Network, Technology, Applications.

1. INTRODUCTION

The Internet of Things (IoT) is a game-changing concept in this era of digital transformation, ushering in a period of unprecedented connectedness and data-driven decision making. Sensor technology is at the center of this evolution, serving as a key component in unlocking the full potential of the Internet of Things. As IoT services are adopted by more and more businesses, sensors are being installed everywhere, resulting in a deluge of new data that must be processed in real time. This data-driven revolution has the potential to transform whole businesses, enhance our daily lives, and provide solutions to some of the world's most intractable problems. Now that sensors are powering the Internet of Things, the real world is becoming more connected, intelligent, and reactive than ever before.

The Internet of Things (IoT) is predicated on the premise that commonplace objects and gadgets may be linked to the web and given the ability to exchange data and interact with one another and with humans. Inanimate items are now able to collect data, process it, and share it with one another because to this unprecedented level of interconnectivity. But sensors, as the IoT ecosystem's "eyes and ears," play a crucial role in making this vision a reality. Sensors are the first line of data collection, and they may pick up on not just simple things like temperature and humidity but also more complicated things like chemical composition and physiological data. These sensors act as the IoT's "ears" and "nose," giving the network access to information about the physical environment. In essence, they enable the IoT to close the gap between the virtual and actual worlds. The interconnected nature of sensor technology and the Internet of Things makes it clear that sensors are the driving force behind the revolutionary IoT.

We use sensors every day, and the Internet of Things has many creative uses for them. Sensors have far-reaching and far-reaching effects, from smart homes and cities to precision agriculture, healthcare, and industrial automation. Thermostats, security systems, and appliances in smart homes all have sensors built in for increased efficiency, peace of mind, and convenience. Sensor networks in smart cities track things like vehicle volumes, air quality, and infrastructure health to make cities more sustainable and conducive to living. By tracking factors like humidity and temperature, sensors help farmers maximize their harvests. In order to monitor patients' vitals and provide prompt, individualized care, the healthcare sector has begun implementing wearable sensors. In addition, sensors allow for predictive maintenance in industrial automation, which lessens downtime and boosts production efficiency. These are just a few instances of how sensors are improving our lives and altering the environment we live in.

Incredible progress in sensor technology has been a key factor in the explosive expansion of the Internet of Things. Sensors have been catapulted into previously imagined realms thanks to miniaturization, increased sensitivity, decreased power consumption, and greater communication possibilities. For instance, nanosensors that can detect changes at the molecular level have been developed thanks to the shrinking of sensors. The ramifications for medicine, ecology, and materials engineering are enormous. Improved sensor sensitivity has also been important in fields like early illness diagnosis and environmental monitoring by allowing for the identification of alterations in the environment that were previously undetectable. In addition, sensors have become more power-efficient, which increases their useful life span and allows them to run independently for longer. Thanks to advances in wireless communication protocols, sensors may now send data in real time to cloud-based databases or other connected devices. As sensors improve and become more adaptable, they play an increasingly important part in the IoT, opening up new avenues for creativity and problem solution.

Sensors have far-reaching and deep effects on many sectors of society and the economy. By constantly monitoring vital

signs and other health factors, wearable sensors are transforming patient care in the medical field, for example. By enabling early intervention and individualized treatment programs, these tools have the potential to completely transform the healthcare system. Furthermore, sensors are changing the way we engage with the world around us. For instance, smart cities are improving their resource management and sustainability by installing sensors around the city. Planners can save costs and improve inhabitants' quality of life with the use of data collected in real time by sensors placed across a city. Precision sensors are helping farmers improve crop management, save money, and solve world hunger. With sensors in the field, farmers can optimize water, fertilizer, and pest control applications for maximum crop output with minimal negative effects on the environment.

The industrial sector is also seeing a surge in innovation thanks to sensors. With the rise of Industry 4.0, sensor technology is being widely implemented in factories and production facilities to build intelligent production settings. Sensors in these settings track equipment, forecast when repairs are needed, and enhance workflow. This not only increases productivity and efficiency but also improves product quality.

Climate change, pollution, and natural catastrophes may all be monitored and mitigated with the use of sensors in the framework of environmental monitoring. Early warning systems and disaster management rely heavily on the information they collect on air and water quality, seismic activity, and weather patterns. In addition, sensors are increasingly being used in transportation for the benefit of autonomous cars. In order to detect their surroundings, travel safely, and interact with other cars and infrastructure, these vehicles use a variety of sensors, including as LiDAR, radar, and cameras.

The interdependence of sensors and the Internet of Things raises some legitimate questions and concerns. Concerns regarding unauthorized access and data breaches are of the utmost importance, especially with the proliferation of sensors and the data they create. Concerns have also been raised about the morality of using sensor data for medical and surveillance purposes. In addition, sensors produce so much data that storing, processing, and analyzing it might be difficult. To extract useful information from the flood of data, we need a solid foundation and sophisticated algorithms.

With the proliferation of IoT sensors, however, concerns have been raised concerning the devices' power consumption, particularly in always-on scenarios. It is essential to strike a balance between the necessity for real-time data and the energy requirements of sensors while developing and deploying them.

2. SMART SENSORS

A smart sensor is a device that combines intelligence with a simple sensing mechanism. The sensing element, memory, interface unit, signal processing unit, and software are the five components of a smart sensor. Various sensors pick up signals for later use in analysis, verification, and data recording. The numerous services provided by smart cities may be accessed via the use of smart sensors. Sensors are keeping a close eye on many methods for gathering data from a wide variety of sources.

MEMS and piezo resistive porous silicon are two types of silicon-based sensors with unique properties. Transduction methods used in the production of sensors are listed in Table 1. In the context of sensors development, these methods provide simplicity of fabrication, simplicity of design, and efficiency of operation at cheap cost. Electronic circuit, industrial, and environmental uses are just some of the areas where sensors may be put to use. The goal of the sensors is to provide a safe and secure environment for all forms of life, from people to plants to animals. Second, we use it to verify the quality of our air, our irrigation soil, our lakes, and our rivers. In addition, sensors preserve the Earth's natural resources for future generations to use. Rainfall, volcanic eruptions, flash floods, soil erosion, and other similar phenomena all call for a comprehensive assessment.

Table 1: Transduction techniques for sensors fabrication

Sr. No.	Transduction Technique
1	Micro Gravimetric
2	Electro Chemical
3	Electrolytic
4	Optical
5	Resistive
6	Capacitive
7	Impedance
8	Piezoelectric Based Surface Acoustic Wave

3. SENSOR BASED IOT APPLICATIONS

Clinical Care

Certain factors, such as blood pressure, glucose level, and cardiac condition, must be monitored prior to providing medication in the event of a medical emergency. Faster access to these tests is possible only with sensor-based IoT for healthcare. It allows for constant patient monitoring from afar. If an electronic sensor were to be attached to the patient, it would be able to report back on any chemical imbalances in the person's body, mind, or behavior. IoT devices allow doctors to access patient data remotely around the clock, no matter where they are located. It paves the way for remote medical advice from physicians.

Smart City

Smart cities are essential because of the exponentially increasing human population. In terms of water, land, health, and other urban dynamics, improvements may be made in a sustainable and effective manner. Weather variables are taken into account as thermal sensors trace the course of energy transmission and distribution. Only with improvements in cloud computing and the merging of smart

sensors in IoT devices can QoS be offered in cities, making them smarter. The idea of the "smart city" emerged as a result of the integration of high-tech sensors for gathering data and conducting analysis to facilitate communication and the management of local assets. Based on factors such as function, sensors, component improvement, communication, a supporting decision system, etc., a smart grid approach may be broken down into five distinct categories. When it comes to developing the infrastructure of a "smart city," where sensor nodes are installed to facilitate communication, the Internet of Things (IoT) application is crucial. The use of smart sensors and IoT devices in public services has had a revolutionary effect. As governments in all corners of the world embrace digital transformation, new smart city applications become available. The smart city strategy and infrastructure design is within its purview.

IOT and Medical Robotics

Robots are devices designed to carry out specific tasks in specialized industries. Like the medical field, industry, and others. The robots get data from the smart sensors and IoT devices. The collected data is sent to a healthcare facility's server using wireless communication protocols like Bluetooth, ZigBee, Wi-Fi, etc.

Smart Home

A smart house is one that can be managed and seen via any kind of communication device. The home gateway addresses a number of interface issues and supports several forms of communication. The following are examples of smart home features: firstly, adaptable to a wide variety of media and methods of contact. Second, since it offers worldwide coverage, accessing data on a smart home couldn't be easier. Finally, a large number of logical and physical sensors keep tabs on the smart home in real time. In Fig. 1, we see the IOT-reliant architectural paradigm for a smart house.

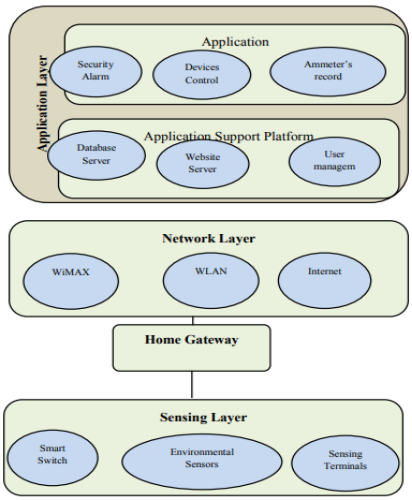

Figure 1: Smart home architecture model

Smart Parking

As the number of cars on the road continues to rise, parking has become an increasingly important part of any intelligent transportation network. Congestion is caused by drivers who park improperly. Transport inefficiency was caused by illegal parking. Parking lots might have sensors installed. Users with Android smartphones may get data about parking spot availability via an app. According to previous studies on vehicular traffic, around 30% of traffic congestion is caused by drivers parking their cars illegally. Smart parking allows for greater efficiency in terms of energy use, labor, and time.

Researchers have incorporated IoT technologies including ultrasonic and infrared sensors and a Raspberry Pi3 board for smart parking. Sensor data is sent to the cloud where it may be processed and stored. An Android app provided users with information on the availability of parking spots. In Fig. 2, we see a block diagram of an IoT-based WSN-based smart parking application.

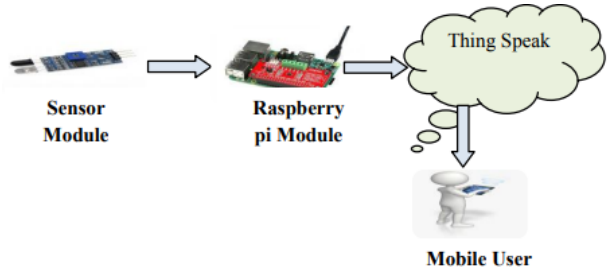

Figure 2: Block diagram

Smart irrigation

Smart agriculture has been implemented to help farmers receive the most possible crop output. To keep tabs on items in the field in real time, researchers have coupled wireless networking with the Internet of items (IOT) using the message queuing telemetry tracking (MQTT) protocol. Sensors, MQTT, and the Texas Instruments CC3200 launch pad might be used to continuously gather data from the field. The data is then sent to an RMS for further analysis. Soil fertility, water management, sunshine intensity, fertilizer dose, and fluctuating meteorological conditions (humidity, temperature, etc.) are all factors that may be monitored to optimize crop development. The next section will focus on the test environment's deployed components.

- Light Detection Resistor (LDR)
- Soil Moisture Sensor
- Water Pump
- Four channel relay module
- CC3200 Launch pad
- DC Motor

4. ISSUES AND CHALLENGES

With ongoing developments in sensor and networking technologies, the internet of things is beginning to take form as a pervasive global computer network. The proliferation of internet-linked gadgets and businesses means that, if wired or wirelessly connected, they will become a

formidable data resource. Internet of Things devices track the whereabouts of miners underground and evaluate sensor data to determine how to best increase security.

Powerful Sensing Solution
Sensors used in the Internet of Things are among the most cutting-edge currently available. Sensors based on the Internet of Things may provide a robust sensing solution for rapid product rollout. You can check in on your office or house from any location thanks to the industry standard in wireless sensing and cost-effective remote monitoring systems. It's the best tool for creating dependable, efficient, and secure apps for the Internet of Things. The industry standard in analog and embedded processing devices contributes to a more enlightened, secure, environmentally friendly, healthy, and entertaining world.

Smarter
The many sensors provide a wide range of information and insight. The operation of IoT systems is the basis for these statistics. The obtained data are distributed over a network based on an autonomous function, necessitating the provision of a much more intelligent environment. Devices are becoming smarter and more useful via the use of a network of sensors and the exchange of data between them.

Essential
There would be no Internet of Things without sensors. Internet-connected things equipped with Radio Frequency Identification (RFID) tags may be recognized, located, and their surrounding conditions analyzed. Smart Things Network The use of sensors in the food industry has the potential to enhance production methods. They run the factory to keep an eye on things and make sure everything is running well.

Connectivity
The next wave of connection will bring together autos, smart homes, and smart cities, expanding on the capabilities of smartphones and tablets. Read on to learn more about the revolutionary effects of the Internet of Things and the industries that stand to benefit most from this revolutionary technology.

Efficiency
Industries and institutions have utilized sensors of various kinds for quite some time, but the advent of the Internet of Things has taken sensor development to a new level. Sensors and a network of communication enable gadgets to collaborate and enhance one another's performance.

5. CONCLUSION
This debate has devoted a lot of time to analyzing how crucial sensor technology is to the IoT. In conclusion, sensors constitute the backbone of this revolutionary technology, allowing the IoT to unite the digital and physical worlds. Sensors and the Internet of Things work together in harmony to revolutionize a wide range of businesses and the way we relate to our physical surroundings. Sensor-driven applications have already shown their promise to improve efficiency, sustainability, and quality of life in fields as diverse as healthcare, smart cities, agriculture, and industrial automation.

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DECENTRALIZEDFINANCE: CHALLENGES, OPPORTUNITIES AND RISKS ASSOCIATED IN INDIA

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ABSTRACT

A new idea in the banking sector called "decentralized finance," or "defi," uses blockchain technology to provide financial services directly to customers. With a market valuation of over $100 billion, it is regarded as the upcoming big thing in the fintech sector. In addition to examining the hazards involved, this article intends to examine the potential and problems related to defi in India.

Keywords: Decentralized Finance, Distributed Ledger Technology, Smart Contracts, Traditional Financing, Accessibility, Privacy.

1. INTRODUCTION

Defi also nominated as Decentralized Finance came into actuality in 2017 and since also it has revolutionized the fintech industry each over the globe. Defi can be defined as the metamorphosisof fiscalproducts presently handed by the traditional sectors of the economy into digitally operated fiscal products via smart contracts without any traditional interposers on a blockchain (By X. Meegan and T. Koens, 2021). All effects considered; any kind of being fiscalservices presently available can be converted to an analogousdecentralized fiscal service. Where it was established, first there'sa disgruntlement between the traditional banking and Defi. Traditional banking has always been considered to be consolidated because of the involvement of interposers, whereas, Defi is considered to be decentralized because its fiscal services are operated without any kind of involvement of interposers. This paper defines Defi as an arising fiscal technology that aims on furnishingsecured fiscal products with the help of secured distributed checks with rejection of interposers that would reduce the freights that banks and other companies' charges for transacting, furnishing smooth inflow for transacting and farther clarifying the limitations on establishment of this fintech in India. Eventually, in the last section we conclude that indeed after numerous advancements in Defi, there are certain pitfallsor downsides that cannotbe neglected. The introductory purpose of this paper is to show that Defi may not reduce all the pitfalls associated with traditional backing but can reduce the pitfalls created due to involvement of interposers and may give a view to open up new ways of supervising these pitfalls.

2. BACKGROUND

There seems to be a rift between DeFi and conventional financing. DeFi is regarded as decentralized because its financial services operate without an intermediary, in contrast to traditional financing, which is considered to be centralized because an intermediary manages a ledger by X. Meegan and T. Koens. A blockchain-based financial infrastructure called decentralized finance (DeFi) has recently experienced significant growth. The phrase typically refers to a protocol stack that is open, permissionless, and highly interoperable and is constructed on open smart contract platforms like the Ethereum blockchain (By Fabian Schär, 2021, 2020).

3. APPEARANCES OF DECENTRALIZED FINANCE

There are some of the main places that the interposers frequently play in the traditional banking, some of them include reducing sale costs and accelerating sale possibilities, as with the help of interposers one can distribute with the third party fluentlyas interposers can help the transacting parties find each other, establish trust between them, and settling sale (by charging a certain quantumof freights from both the parties). Without interposers, the transacting parties may face some kind of problems with each other while establishing connections, administering agreements and one of the most important corridors of a sale i.e., negotiating (one of the main functions of a conciliator). For further than 10 centuries, different types of fiscal institutions have played major places in interceding and structuring of profitable deals that helped the parties to execute their deals with limited problems and pitfalls. The interposers frequently connect the transacting parties by taking them to a common platform, where they can fluently communicate and distribute with one another. They generally make trust among different parties by maintaining client relations by resolving any kind of controversies that the parties may be having, administering rules of the agreements, and keeping records (by Raphael Auer, 2019). As most of the advanced nations are moving towards digital frugality, fiscaltechnology (Fintech) has started to take some of the major places played by large and small fiscal institutions. This has also led to developing nations to take into consideration the fiscal technologies, as the involvement of Fintech in their economy can impact it in a really enormous way. Considering the illustration of one of the top ranked developing countries i.e., India- India espoused fiscal technology for the first time in 2015, since also we can see major growths in the fiscal sector of the frugality. Taking the illustration of Paytm, one of the titans in the Indian Fintech industry that has given a major development to the

fiscal sector of the frugality by furnishing a digital platform for transacting that's secure and smooth i.e., with the help of internet we can easily distribute anywhere at any time. Fintech has notremoved interposers but it has replaced them (fiscal institutions) with the other interposers (technology companies). Distributed Ledger Technology came into actuality in India in 2020(m.rbi.org.in) and that was another step of a developing nation towards digitalization. Some of the scholars believed that DLT is one similar technology that could give the right foundation for the government's digitalization, drive massive edge, while also showing the transformative nature of arising fintech (like Defi) for wider assiduity. There are some recent developments that are creating a new paradigm that can lead to decentralization and disintermediation. The developments also show that blockchain can remove the need for interposersto grease or complete fiscal deals, as blockchain allows for the creation of decentralized platforms. Empowered by blockchain technology, fiscal services can come more decentralized that can lead to further translucency, further inventions, and borderless platform for transacting. With the emergence of decentralized platforms and distributed trust, entrepreneurs have given some ideas that have a possibility of creating an open fiscal system that would have no involvements from the central institutions. An illustration can be taken from 2017 startups- Agave, it's a UK grounded company that was innovated in 2017 and which has taken the charge of introducing Defi to the world. Agave was set up with a motive to take the fintech to another position. It's a protocol that allows people to advance and adopt cryptocurrencies and real- world means (RWAs) without having to go through a centralized conciliator. There are a lot of fiscal institutions and companies which are trying to bring in a decentralized platform for the unbanked and underbanked areas across the globe and if it's successful, that platform may have the eventualityto produce a different fiscal system, different from what we've right now in the form of centralized fiscal system.

4. 5INVOLVEMENT OF DISTRIBUTED LEDGER TECHNOLOGY IN DECENTRALIZED FINANCE

Distributed Ledger Technology or DLT is a protocol that enables secure functioning of a decentralized digital database., it provides a collection of structured and secured information with the use of cryptography. Distributed networks exclude the need for a central authority to keep a check against manipulation and this process is executed without any problems as DLT or distributed ledger technology provides a decentralized digital database so with the help of that there's no need for a central authority to keep a check against manipulation. Emilios Avgouleas and Aggelos Kiayias (Emilios Avgouleas and Aggelos Kiayias, 2020) says that "One- stop- shop multipurpose and asset platform (like Defi) grounded on Distributed Ledger Technology (DLT) are bound to come a crucial aspect ofpost-COVID-19 finance to bring a radical metamorphosis of the requests in some aspect" (By Xavier Meegan, 2020). Involvement of Distributed Ledger Technology in Defi would be helping in the establishment of Decentralized Finance in most of the developing countries like India as they've formerly acclimated DLT and is being made obligatory for certain types of institutions or companies as it'll circumscribe businesses from transferring fraud calls to guests. Although DLT is right now in the development phase as it's being taken as anairman design and is being studied to explore the implicit benefits of this Fintech (m.rbi.org. in. Distributed Ledger Technology, Blockchain and Central Banks).

5. RUDIMENTS OF DECENTRALIZED FINANCE (DEFI)

Principally, rudiments are the parcels or characteristics of commodity, in this case, of Decentralized Finance. There are some of the introductory rudiments of Defi that will be helpful to the people, when someone adapts or uses this fiscal technology. Some of them include Interoperability, Availability, robotization of Business processes, Border lessness, Decentralization, Inflexibilities.

Interoperability

There are two types of interoperability-Functional and specialized interoperability. In functional interoperability, services live on the same platform so, they can work together (By X. Meegan and T. Koens, 2021). In Technical Interoperability, two different platforms can work together. Defi can consolidate interoperability. Full functional interoperability has not been achieved due to some reasons. Some of them are because of centralized fiscal institutions. Consolidated fiscal institutions maintain their own checks so, one fiscal service isn't interoperable with another and moving of capital between two or further fiscal institutions can come expensive. And another reason why decentralized finance has not achieved full interoperability is that there's a lack of interoperability between blockchains of theDecentralized Finance (Blockchain Technology and the Quest for an open financial system, by Yan Chen and Cristiano Bellavitis, 2019). There are two options that are presently being explored by the entrepreneurs. The first option includes junking of all the platforms and actuality of only one dominant platform on which all the systems will be converted. Another option is to connect different blockchains to achieve interoperability.

Border lessness

Centralized finance is being tied to specific geographical locales with specific edict currency so it cannot be said as a truly borderless platform. But Decentralized Finance is truly borderless because it isn't being tied to any kind of specific geographical localesand edict currencies. Defi relies on borderless cryptocurrencies that aren't attached to any central bank or government. Decentralized Finance (Blockchain Technology and the Quest for an open financial system (by Yan Chen and Cristiano Bellavitis, 2019). And because it isn't being tied to any kind of geographical locales so it can be used by anybody across the globe and that's the reason why Decentralized Finance is considered a truly borderless platform.

Availability

There are a lot of DLT (DistributedLedger Technology) platforms that are permissioned private i.e., that can be used by certain people with an id or a passcode or anything like that. Availability on public permissioned DLT platforms creates a pressure in terms of development of countries in operation of different fiscal services as there are a lot of countries that have limited fiscalservices (Decentralized finances: On blockchain-and smart contract-based financial markets. (By Fabian Schär, 2021, 2020). But Defi platforms can be used by anyone that makes it accessible to everyone. Removing the walls for DLT platforms may be a result to availability of services but that would give a pass for vicious practices in fiscal services.

Robotization of Business Processes

Smart contracts allow for the robotization of business processes. If the businesses are automated also executing their conditioning becomes more effective. Smart contracts can be cost effective as whenthe smart contracts are made also the transacting parties can distribute with each other without the need of an external authority i.e., interposers (Transitions and concepts within decentralized finance (defi) space. By Andrei-Dragos POPESCU.). So, this also proves the point that decentralized finance via smart contracts can help in junkingof interposers that would ultimately help both transacting parties. But indeed, though smart contracts are a better and an innovative way to do business some questions still arise that-(a) Who'll be responsible or liable for correct functioning of the contracts? (b) How can the two transacting parties ensure that the contract will work according to their requirements? So, it can be concluded that Defi is a better and innovative way of performing deals but still, there's a need for development in certain areas of this fiscal technology. Decentralization inthe environment of Defi it can be said that decentralization means facilitation of fiscal services without the need of a trusted conciliator (By X. Meegan and T. Koens, 2021). Although interposers help to carry out the deals easily by furnishing a platform to the transacting parties, but by reducing or removing the part of centralized institutions, decentralized platforms can reduce sale costs as the interposers will be removed or reduced up to a limit. There are some experimenters that consider defi services are handed without a centralized conciliator (Some simple economics of the blockchain. Technical report, National Bureau of Economic Research, 2016.). In the decentralized platforms, fiscal deals are eased by decentralized peer to peer networks rather of centralized institutions Decentralized Finance (Blockchain Technology and the Quest for an open financial system, by Yan Chen and Cristiano Bellavitis, 2019). Taking the illustration of Wazirx- a crypto trading platform that's an illustration of decentralized fintech, where the parties can distribute in cryptocurrencies without any kind of interposers or with limited central involvement.

Inflexibility

Can be defined as the capability of a fintech to be fluently modified considering the dynamic nature of the business. Occasionally a fintech can be only flexible in case of a lack of regulation i.e., in the case of Decentralized finance (Defi) (Cryptocurrencies and entrepreneurial finance, by Pierluigi Martino, Cristiano Bellavitis, and Carlos M DaSilva). But due to lack of regulation there are some downsides of Defi too. One of the major downsides is that as no bone is keeping an eye on this platform so it can be used for fraudulent conditioning. But a result to this can be handed in a way that Agave (A Defi company) is doing its business. Agave is completely governed by its token holders (holders of Agave's ERC- 20 commemorative) so that means if a new asset is to be added to the platform, also, originally, an offer is to be given the commission that's governing the platform i.e., the token holders and also the commission will bounce i.e., the token holders will bounce in favor and not in favor of the addition of that asset. Agave is a great illustration of inflexibility to enter and exit the request as its plutocrat request is being operated24/7.

Translucency

can also be enhanced by Decentralized Finance in the fiscal system. There are some reasons that why centralized finance cannot achieve full translucency. One of them is that the centralized checks most of the times hasto circumscribe the access to their checks to secure them. But Decentralized finance can secure public checks with the help of distributed agreement and radical translucency. (Blockchain Technology and the Quest for an open financial system, by Yan Chen and Cristiano Bellavitis, 2019). In order to produce a proper working platform, Defi creates a distributed trust so that the parties can distribute or do business without having any former connections with each other and so that deals can be completed successfully without any kind of involvement of a conciliator.

Composability

can be defined as, the capability to make a complexometric-component of fiscal system on top of crypto means (The decentralized financial crisis, by Lewis Gudgeon, Daniel Perez, Dominik Harz, Benjamin Livshits, and Arthur Gervais). It can also be said as one of the parcels of the system where the factors can be fluentlyconnected (Decentralized finance (defi)–the Lego of finance. By Andrei-Dragos POPESCU). On this platform, fiscal services can be erected on the foundation handed by the blockchain.

6. OPPORTUNITIES IN ESTABLISHMENT OF DECENTRALIZED FINANCE IN INDIA

There are a lot of openings for a country like India in the establishment of Decentralized Finance or any other kind of fintech. India lately espoused DLT i.e., the Distributed Ledger Technology in the time 2020(m.rbi.org. in. Distributed Ledger Technology, Blockchain and Central Banks), and that was also accepted after looking into the benefits. DLT in India right now is in development phase. One of the openings that India would get in the establishment of Defi would be that it would be a great step towards digitalization. As the central authorities and the government are taking a lot of way to make India a cashless economy or we can say a digital frugality. And this would

be done by espousing fiscal technologies and encouraging every order of the society to borrow the digital ways of transacting. In 2016, India went through demonetization and that was another phase when a lot of people went from using cash to using digital mode of payments as they saw that it was a safer mode of payment. So smart contracts are another mode of making digitalized deals. So, establishment of Defi in India's frugality would be helpful to the government. Another occasion or benefit for the country would be that as DLT i.e., Distributed tally technology has formerly been established in India (m.rbi.org. in. Distributed Ledger Technology, Blockchain and Central Banks), and DLT being a part of or we can say related to Decentralized Finance it would give them an idea of how Defi works. And if they get to know the working of Defi directly, it would also profit them in balancing the nonsupervisory frame with traditional finance. There are some further fiscal technologies that India is using related to Defi. Some of them are blockchains, Distributed checks, crypto means, etc. As the government is apprehensive of the functioning of blockchains and some other effects it would help them to identify what are the problems and the openings that they would be facing while using Defi.

7. CHALLENGES IN ESTABLISHMENT OF DECENTRALIZED FINANCE IN INDIA

Even though fiscal technology has a lot of benefits in today's world but indeed after that we cannot neglect the part that there are some major challenges and limitations in that technology. In India, there are a lot of challenges that would affect the establishment of Defi. One of them is bandied in section 7, as nonsupervisory threat i.e., regulation of Defi isn't easy as they've to maintain balance between traditional finance and Decentralized Finance. One of the major challenges would be the KYC (Know your client) and AML (Anti-money laundering) conditions (Challenges and approaches to Regulating Decentralized Finance by Iwa Salami). In a country like India with a population of further than1.3 billion, KYC conditions are a must because else it would be delicate for any platform to control the different kinds of illegal conditioning. And talking about Anti-money laundering, it's also an essential part of a fiscal platform as it prevents plutocrat laundering. The alternate challenge the country would face is regulating Defi. As we can see the caseof cryptocurrencies in India that government assessed a duty in its 2022 budget (https://www.indiabudget.gov.in). So, it can be said that the country wasn't suitable to manage the regulation of crypto means i.e., the fiscal technologies in an applicable way. So, it would be indeed more delicate to regulate Defi as it includes smart contracts (discussed in section 7) and junking of centralized institutions. Regulation of Defi is a huge decision for a country like India because it has just espousedDLT (Distributed Ledger Technology) and indeed that's under development. DLT is also a part of Defi so, if the country can find answers to some of the problems related to DLT also the regulation of Defi would come easier. Another challenge that the country might face is the lack of secretiveness i.e., in India when centralized institutions or interposers are involved in a sale on a platform also that place stores their data and keeps in secured. Decentralized Finance (Blockchain Technology and the Quest for an open financial system, by Yan Chen and Cristiano Bellavitis, 2019). But in the case of Defi, as it's accessible to everyone, a decentralized network most frequently makes critical information available to all the parties and occasionally indeed duplicated the information and there's another problem of illegal conditioning in a decentralized network as there's no regulating authority over them. This results in the lack of sequestration as there's extreme translucency.

8. THE ANSWERED AND UNSOLVED PITFALLS AND VULNERABILITIES OF DECENTRALIZED FINANCE (DEFI)

Defi claims to be decentralized but full decentralization in Defi is illusory. There's an element of centralization in all Defi platforms, which revolves around the governance token holders who bounceon proffers (Defi risks and the decentralization illusion). Defi is still at a veritably early stage of development, it offers colorful services that are kindlyanalogous to traditional finance and suffers from colorful analogous problems. There are some introductory mechanisms that are giving rise to some of the vulnerabilities or pitfalls like- influence, liquidity mismatches, their commerce through profit dogging and threat operation practices, etc. But these pitfalls or vulnerabilities have always been there in the traditional finance, so these are some of them that have been resolved or are being resolved (Defi risks and the decentralization illusion). There are certain pitfalls in Decentralized Finance that aren't resolved yet. Some of them include smart-contract threat, mystic threat, nonsupervisory threated. Smart- contract threat - smart contract is an automated agreement between the transacting parties that's automatically executed. It's an algorithm on a blockchain in which deals can take place without any centralized institutions or interposers (Defi-ing the Rules: Five opportunities and five risks of Decentralized Finance, by Roger Mitchell). As Defi has one of its parcels nominated as availability, so that means that the platform is open for all and anyone can make any kind of sale through smart contracts. This point of Defi makes smart- contract more vulnerable to hackers or cybercriminals as they can fluently pierce to all the information on the Defi platform. There are a lot of vulnerabilities in this type of fintech right now so the threat position is high.

Oracle Risk

Smart contracts are the contracts that calculate on outside information. The third- party services through which the connection is handed are called blockchain oracles (Defi-ing the Rules: Five opportunities and five risks of Decentralized Finance, by Roger Mitchell). There are certain problems in the waythe steps are needed to take out a salecannot be taken and the contract may be cancelled, if the connection for that information is intruded due to any kind of issues.

Regulatory Risk

There are a lot of effects that need to be considered before regulating this fiscal technology. There are a lot of pitfalls directly related to the frugality of the country. Defi talks about junkingof interposers, but most of the times interposersincludesthe marketable banks and other fiscal institutions too. So, chancing a right balance for its regulation is going to be delicate.

9. CONCLUSION

After looking into all sections of this paper it can be concluded that Defi is a veritably parlous platform as it's under development because it's a new fiscal technology that came into actuality in 2017. There are certain types of pitfalls that cannot be ignored as they would directly affect the fiscal sectors of the Economy. The pitfallscannot be ignored because of another reason i.e., sequestration of enterprises. In Decentralized finance, the platform is accessible to everyone and that results in sequestration of enterprises as anyone can get into the platform and hack the data effortlessly. This also concerns the smart contracts as they're without interposers or any kind of central institutions and that can also affect in data leak from the Defi platform. There's another part of Defi that's interposing its establishment i.e., they Know Your client morals. As India has been following this norm in a lot of traditional banking conditioning, this can be one of the major problems. Although if Defi can be taken in a manner with some minor challenges also it can be a veritablyeffective fiscal technology in the forthcoming period. This paper has argued about the challenges and the openings that India would face if Defi gets established in India relating to there-existing fiscal technologies in India. The introductory premise is that Defi is presently a platform for large businesses and to get established in a developing country like India, the experimenters should find a way to make in usable for the small and medium enterprises(https://msme.gov.in). After considering all the parcels, benefits and the problems in Decentralized Finance it can be said that Defi is in a veritably early stage and it needs a lot of developments to get established indeed in an advanced developing country in an applicable way.

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ROLE OF ARTIFICIAL INTELLIGENCE IN ACCOUNTING AND AUDITING

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ABSTRACT

OBJECTIVE: The objective of this article is to explore emerging technologies, its implementation, perceived benefits, technology challenges, its ease of use and accounting professional's research experiences. AI enables the processing and automated authorization of documents to enhance internal accounting processes such as procurement and purchasing, invoicing, purchase orders, expense reports, accounts payable and receivables etc. DESIGN, METHODOLOGY AND APPROACH: The main method of data collection was a questionnaire addressed to newly hired accountants who are partners of sole proprietorship firms or partnership firms in India. Data were partially analyzed using least squares structural equation modeling. FINDINGS The results show that there is a positive and significant correlation between emerging technology features like technology implementation, technology challenges and audit practice, while the perceived benefit factor has a negative relationship with audit practice. The research model will help researchers of emerging technologies by providing a platform for new research to analyze solutions in more detail. PRACTICAL RESULTS: This study shows how the tool's technology is driving adoption of the benefits it receives, the auditor's only proprietary, technology enabled audit software emerging to verify client financial statements. In addition, this research has contributed to the information technology research literature, and may be useful for many other audit firms to adopt new technology tools in their audit firms. COMMUNITY RESULTS: Audit firms, often sole proprietorships and cooperatives, must know enough about the latest audit software tools to perform audit duties effectively. ADVANTAGES: The research results show the advantages of the technology-enabled audit experience which takes place between sole proprietorships or owners/partners of firms, which were not discussed in detail in previous works. It also expands knowledge about the benefits, technological challenges, and ease of use of technology-enabled audit software in the auditing and accounting literature.

Keywords: Artificial Intelligence, Auditing, Accounting, Information Technology, Accountant, Auditor.

1. INTRODUCTION

The term "artificial intelligence" was coined by John McCarthy. This is an experience is a branch of computer science that deals with various machine applications. There are other things that computers can do using AI techniques include word recognition, achievement in audit, structural planning and discretionary matters. Advancements in technology have changed the practice of accounting and auditing. On the one hand, accounting services provide the preparation of income statements, financial statements, shareholder reports, cash flow statements and other accounting services. On the other hand, it provides services related to auditing, auditing financial statements, tax services, and other auditing services. Audit firms try to use advanced audit tools to provide their clients with effective audit services and thus maintain a good reputation with their stakeholders. One of the most important computer-aided tools and methods (CAATs) is Comprehensive Software (GAS), which is a comprehensive set of software that allows auditors to review various customer data and verify customer reports. The adoption of technology in audit is considered an important component in assessing the effectiveness and effectiveness of monitoring issues. The auditing profession has faced a variety of information technology (IT) challenges, and the use of IT-enabled accounting practices. It is almost useless to audit financial statements without using the technological tools that are emerging today. Such arguments have been acceptable for the last two decades; however, it is important to know why applied auditors use emerging technology tools from an audit perspective and to determine the effectiveness and effectiveness of external auditor's tasks. Technological tools have been expanding in the global service environment during the past two decades, especially with the rapid changes in the needs of stakeholders, timely service delivery and the improvement of the quality of low-cost services. Supervision is considered a labor-intensive profession that requires a consistent focus on efficiency and competitiveness in order to increase the productivity of junior auditors during audits. Accordingly, the deployment of emerging technology tools in research will lead to increased productivity, efficient and relevant collection of audit evidence, and faster communication with stakeholders, ensuring the protection of customer's confidential information. Advances in technological tools make it possible to improve the capability and effectiveness of legal investigations. The use of electronic audit will reduce the time required to perform audit tasks and reduce audit operational costs. The use of emerging technology tools allows to improve the quality of audit services, increase corporate business revenue and reduce audit risk. Therefore, auditors should adopt more information and communication technology (ICT) tools and techniques in auditing.

Inadequate training in computerized inspection and lack of understanding of the specific functions of audit software by audit assistants are considered major limitations to the adoption of emerging technological tools for audit software in auditing. Computer assisted data mining techniques are still neglected or used only by a few professionals (Pedrosa and Costa, 2014). The main challenge faced by auditors is

the cost of specialized audit equipment and staff training. Technological challenges mean that their internal features and functions have become more complex and internal auditors are discouraged from using such tools due to their complexity in terms of ease of use. Apparently, there is a lack of expertise in the relationship between theoretical and practical concepts of e-auditing. The effectiveness of technical training has been investigated as a possible intervention for the inspection of audit software. Some private audit firms and partnerships agree that adopting audit software may not be cost-effective. Practical skills and training needs. Accordingly, this study aims to test the relationship between emerging technology tools and audit practice, namely technology adoption, perceived benefits, technology challenges, ease of use and audit practice.

The rest of the paper is organized as follows: literature review, research methodology, analysis and results and conclusion.

2. LITERATURE REVIEW

2.1 THE EMERGENCE OF TECHNOLOGY AND AUDIT PRACTICE

The supervision function is an important function of any organization created to ensure the accuracy of financial reports and the need to provide services in a controlled and supported environment. The widespread use of technology tools in today's organizations has a significant impact on the audit profession. The adoption of this technology ensures that accounting information is available in a secure, regulated, monitored and supported environment. For practicing auditors, this can be a major challenge. Emerging technology tools provide an environment, and practical auditors will begin by using business intelligence tools, which are key factors in decision making (Ciprian-Costel, 2014). IT and audit capabilities of professional auditors are becoming increasingly important to maintain the integrity of automated systems. As a result of recent advances in technology, manual auditing has changed significantly among auditors. Innovative enterprise resource planning (ERP) systems are now increasing the availability of e-commerce by stakeholders for online business operations, cloud use, and use by auditors and boards of directors. Management support is also important in deciding to implement ERP or not.

Previous research has shown that the use of technology test tools for audit tasks can help in the consistency and design of research objectives. Emerging technologies therefore allow monitoring tools to speed up auditor thinking, because emerging technology tools generate detailed lists of minor audit issues that bring the main auditor's attention. In addition, the literature review confirms that, in general, ready-to-use technology involves the selection of various control tools and methods that can be used to support most control issues, from data mining to data search. Although technology research tools reduce the level of auditor accountability, it adds value, productivity, and reduces the burden on auditors. The first literature on the adoption and use of emerging technology tools and CAATs, found that the use of technology tools significantly contributes to the efficiency and productivity of small auditors in auditing customer financial reports.

2.2 ADOPTION OF TECHNOLOGY

Since most of the organization's operations involve accounting based on technological tools, this requires auditing firms to use audit software to audit financial statements for their clients. Adoption of IT has contributed to increased productivity in auditing and accounting among practicing professional auditors (Thottoli et al., 2019). Abreu et al. (2018) reviewed blockchain technology and some of its changes and found that blockchain technology has a positive impact on the audit environment and can help existing processes become more efficient. Internal auditors have realized the need to use technology to perform audit tasks. CAATT, in particular, can help improve audit efficiency and effectiveness. The introduction of IT has led to radical changes in the way business is conducted, one of the latest breakthroughs being cloud computing. The adoption of IT has led to significant changes in the firm's auditing and accounting practices. Audit firms must use IT in audits because many of their clients use IT in their work. It is proven that audit firms that use IT show better performance than audit firms that do not use IT. Audit firms are increasingly using CAAT and audit software as important tools to help them achieve audit quality and improved efficiency, which further increases the reliability of data analysis and evidence gathering.

Therefore: H1. Technology adoption is positively related to audit practice.

2.3 BENEFITS

Audit software and IT applications in auditing help auditors to complete audit tasks in a timely manner. Emerging technology tools, CAAT and audit software all ensure the high quality of audit reports and there is a trend towards the adoption of such audit software in most developing countries. Audit firms can improve the performance of their internal audit department (IAD) by using an integrated and effective ERP system and the right audit software. Investment in CAAT tools has been necessary due to its remarkable effectiveness in improving the effectiveness of internal audit. GAS allows internal auditors to independently audit client data stored on computers without relying on accountants. Clients can verify the reliability of accounting software and implement system redesign, which in turn leads to the collection of audit evidence and an increase in the accuracy of audit tests and a more efficient approach to audit problems, which leads to a cheaper audit. Likewise, CAAT tools allow auditors to save time in their audit work. In some cases in the literature, manual audit procedures are compared to CAATs-based methods, where public auditors can save several hours per audit.

Therefore:
H2. Perceived benefit is positively related to audit practice.

2.4 TECHNOLOGICAL CHALLENGES

Supervision begins after the end of accounting. Most audit firm clients can complete their financial statements by the end of the year, so auditors have limited time to perform audit work. Auditors must be vigilant and ensure the fairness, accuracy and reliability of the financial statements during the audit in the shortest possible time. At the same time, audit firms should consider the cost of audit software, the availability of skilled labour, and the benefits of using audit software. Cloud computing poses some risks, such as technology-based technology, such as information security and adequate protection of privacy. Internet hackers threaten organizations, individuals and other organizations by stealing data or causing business violations that can materially affect the reliability of source data included in financial reports (Barta, 2018; Thottoli, 2021c). Technology adoption includes elements such as environmental factors, the absence of technically experienced auditors in the labor market, the size of the customer's work, expectations and the lack of GAS in different languages. The perceived risk of audit software or CAAT is the number of FC, EE, and junior auditors, all of which are the main drivers for the implementation and use of CAAT.

Therefore: H3. Technological challenges were positively related to research experience.

2.5 EASE OF USE

The ease of use of audit software, generalized by small-scale experimental research firms who proposed the concept of TAM. The TAM framework consists of four sub components: PE, EE, SI, and FC. The two TAM components PE and FC appear to be different determinants of the effective absorption of GAS (Mahzan and Lymer, 2014). TAM and software are reviewed in a specific context, which includes factors such as ease of use, software usability, software utility, and software ease of use (Kim et al., 2016). The main factors that influence the intention of internal auditors to use technology tools are PE and FC. The ability of employees to use advanced technology tools shows the ability of the technology in performing the desired task (Chopra, 2019).

Therefore: H4. Ease of use is related to the verification operation.

3. RESEARCH METHODOLOGY:

3.1 THEORETICAL FRAMEWORK:

The framework of this study describes the structure associated with dependent variables (audit practice) and independent variables (technology acceptance, perceived benefits, technological challenges and ease of use). Rationally, a theoretical framework is constructed to describe the relationships between related variables through a comprehensive literature review. Further research hypotheses are developed to solve the main issues in the research. The study hypothesis was developed by examining the direct relationship between technology adoption, perceived benefits, technological challenges and ease of use, audit practices and emerging technology features. This study chose to focus on four independent variables for several reasons. First, variables such as emerging technology factors affect audit practices among small scale audit firms inIndia. Second, previous studies have suggested technology awareness and adoption in the accounting profession. Finally, the theoretical framework shows the relationship between technology adoption, perceived benefits, technological challenges and ease of use in research practice.

3.2 SAMPLING AND DATA COLLECTION

In total, questionnaires were sent to 100 auditors (owners / partners) of sole proprietorships and partnerships in India in 2022. In total, only 91 respondents were eligible for analysis, representing 91.71% of the original surveys that were distributed. Data were analyzed from the primary data collected and analyzed using random sampling techniques and personal interviews with professional chartered accountants. The study collected data using Google Forms. Intelligent Partial Least Squared (PLS), was used to analyze quantitative data, with the bootstrap method.

3.3 SAMPLE SELECTION

The sample was collected from disciplined accountants who are owners/partners of a sole proprietorship or partnership firm. The reason for choosing an auditor is that in India, most auditors have only one or two partners or only two or three partners who do not have technology. Therefore, there is a need to familiarize yourself with the technology tools available to improve auditing among small audit firms.

3.4 DATA ANALYSIS

The research was conducted on a small sample size. PLS-SEM offers a solution for even small samples, where the model consists of several hypothetical structures and several elements in variables. PLS has been widely accepted as a multidisciplinary research method developed by several scientists. A five-point scale was used to evaluate the elements of the questionnaire.

4. ANALYSIS/RESULTS

4.1 DESCRIPTIVE STATISTICS

According to the descriptive data the causal variable of audit practice had an average of 0.042, standard deviation 1.00, minimum −3,337 and maximum 2,295. The first independent variable, technology acceptance, has an average of 0.210, a standard deviation of 1.00, a minimum value of -4,709 and a maximum value of 1,439. The second independent variable is considered to have an average gain of 0.059, a standard deviation of 1.00, a minimum value of −4,698, and a maximum value of 1.248. The third independent variable of technological difficulty had an average of 0.134, a standard deviation of 1.00, a minimum value of -2,140, and a maximum value of 1.735. The fourth and final independent variable, easy to use, had an average of 0.254, a standard deviation of 1,000, a minimum value

of −4,859 and a maximum value of 1,532. The higher standard deviation of ease of use reflects the difference in perceived difficulty of the perceived ease of use factor between junior and advanced public auditors. The degree to which one construct differs from other constructs is determined by its discriminant validity, the inevitability of low correlations between anxiety and other measures that do not measure the same concept or variables. The average square root (AVE) of each construction should be greater than the degree of correlation between them. Finally, the square root of AVE is compared with other component correlations to determine discriminant validity. Regarding correlation data, all emerging technology variables had positive correlations, with these three variables significantly associated with audit practice.

4.2 HYPOTHESIS TESTING

The given hypotheses were tested using the SEM-PLS bootstrap method. According to Lohmoller (1989), a path coefficient value of 0.1 is considered acceptable. First, the results of the three hypotheses (technology taking, technology challenges, and ease of use) appeared to be significant, whereas one hypothesis (benefits felt) was found to be insignificant. Technology acceptance, technological challenges, and ease of use, all with a path coefficient of 0.000, have a positive relationship with audit experience, while other independent variables of benefit are perceived to have a negative relationship. with audit practice, with a path coefficient of 0.042.

The result shows that the adoption of the technology p <0.001 and t = 7.223. These findings indicate that technology adoption has a significant effect on auditing practice and indicate that auditors are willing to accept technology adoption in auditing practice, thus supporting H1. The results of the p-value and t-value of technological challenges are p <0.001 and t = 6,166, which indicates that technological challenges have a positive effect on the auditor's experience, especially as higher levels of technological challenges have been seen. the influence of technology tool adoption by practical public auditors. Thus, H3 is also supported. The results of the p-value and t-value of ease of use were p <0.001 and t = 4.587, respectively. These results indicate that ease of use has a positive effect on audit practice, and it is clear that ease of use factors have a positive effect on audit practice. Therefore, H4 is also supported.

The p-value and t-value of the perceived gain each have a value of p> 0.05 and t = 0.988. These results indicate that the perceived benefits have no effect on audit practice and the lack of knowledge among auditor professionals about the benefits of using emerging technological tools to audit audit practice. H2 is therefore not supported. Overall, the three findings indicate that most of the factors selected for analysis affect audit practice.

5. CONCLUSION

Technological developments have shown that traditional audit methods have disappeared. Audit software, equipped with the latest technology, becomes an added value to enable auditors to conduct inspections more effectively and efficiently. Auditors who work with emerging technology tools assist auditors in gathering sufficient and relevant audit evidence by electronic payment, tracking, verification, recalculation, processing, and third-party electronic verification, and analyzing procedures using audit software. Accordingly, auditors should change their mindset to adopt audit software, which is equipped with the latest technology to audit customer's financial reports. The results of this study confirm that the introduction of technology, technological challenges and ease of use have a positive impact on auditing practices working with emerging technology tools.

The results of this research can be used to determine several outcomes. This research highlights the additional benefits of audit software, in particular and technological tools that are available to owners or partners of sole proprietorship firms and partners in India. Accepting audit software can improve the efficiency of audits by small audit firms. Discussions and research findings form the basis for using audit tools that are enabled by emerging technologies that are specific to internal or external auditors, or can affect adoption into GAS. The desire of small auditors to embrace emerging technologies, as well as their benefits and ease of use, suggests that practical auditors can overcome technology challenges by redefining the objectives of the auditing firm. The findings strengthen the experience of testing technology tools and, in turn, put emphasis on the accounting literature. These researchers offer not only forms but also awareness of audit practices provided by the technological tools that appear in the content. In addition, this research could help policy makers, software developers, Institute of Chartered Accountants of India (ICAI), an association of auditing firms, as well as government to create prudent and deliberate policies using technology enabled audit experience.

According to some technology analysts, anything that can be converted into data will eventually be retrieved by the machine. Imagination and judgment are purely human domains and often distinguish one organization from another. AI, such as spreadsheets and databases, is a valuable tool only if people know how to use it to streamline business processes. Accountants and auditors cannot be replaced by artificial intelligence when it comes to exercising human creativity and judgment. Technological, regulatory, and economic changes will continue to challenge the historic approach. Accountants and auditors need to quickly respond to changes in user demand, as well as to create new and emerging dimensions of organizational performance beyond traditional financial reporting. There is a need for centralization and standardization of the supervisory profession, moving away from the internship model towards more specialized areas. Accountants and auditors will see a resurgence in the coming decade, with incredible opportunities for individuals entering the profession to innovate and advance. The core concept at the

surveillance center-strengthening information trust will remain unchanged. However, as technology and analytics advance, the way stakeholder groups conduct audits will change. Because inspectors use new technology, the ability to exercise professional judgment and skepticism is more important than ever. In the accounting industry, AI will not replace accountants; rather, it will shift focus.

"No matter how much AI interferes with the profession in the future, it is highly unlikely that the need for human experts will be eliminated. As a society, we must constantly use AI to ensure that value and efficiency are always paramount."

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STUDY OF THE WOMEN ENTREPRENEURS IN THE MICRO & SMALL ENTERPRISES OF NASHIK: ATTITUDES AND PERCEPTIONS

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ABSTRACT

In any economy, women comprise around 50% of the total population. This percentage may be lower in India compared to the developed economies. But the women of India comprise more than 50% of the workforce. Many of the women are engaged in micro or small businesses. These women-owned businesses have many advantages in terms of socio-economic development but at the same time have their own set of problems. The paper attempts to analyse the attitudes and perceptions of the Indian women behind starting their businesses. The study especially analyses the reasons for starting businesses by women in Nashik district during and after the COVID pandemic i.e. from 2019 to 2023The study uses the primary and secondary data collected via questionnaires and the various research articles published. The paper attempts to analyse the reasons for starting the business, the type of technical and marketing assistance they get, the regulatory assistance from the government, and the prospects of these businesses.

Keywords: Women Entrepreneurship, Women Empowerment, Gender Equality, Business

1. INTRODUCTION:

"Women must be put in a position to solve their own problems. It is not sympathy to women, but empowerment of women that is needed."-Swami Vivekananda

This quote still has its significance even in the 21st century. Women are 50% of the total population and therefore the empowerment of women is the empowerment and development of the economy. In any economy, women comprise around 50% of the total population. This percentage may be lower in India compared to the developed economies. But the women of India comprise more than 50% of the workforce. This picture is especially true in the case of the unorganized sector. We can observe that the women of nearly every family are the financial contributors in one way or the other.

Since historical times, in India, women were restricted to household chores. Moreover, the literacy rate of women in India was very low. This scenario changed in the 19th century when the first school exclusively for women was started in India. The revolutionary thinkers were the main pillars responsible for the upliftment and empowerment of women. The women then started contributing to the household decision-making. This changed the status of women in the pre-independence period. In the post-independence era, women started their historical journey of working for financial independence.

The journey of Indian women in the field of entrepreneurship started in the late 1960s. This journey was further supported positively by the various organizations working for the development of women as well as the financial institutions and the governments. The financial institutions and the government worked jointly by launching exclusive schemes for women entrepreneurs in India.

The government scheme to support businesses includes financial assistance as well as Marketing assistance. These include various financial schemes like the PM Employment Generation Program and the CM Rozgar Yojana. These schemes target the Small and Medium enterprises. There are only a few schemes available for micro-enterprises like the Mudra Yojana and the recently launched Vishwakarma Yojana and Amrut Yojana. There are also a few schemes available for Self Help Groups under the umbrella of Bachat Gaat Yojana for the people below the poverty line.

Many banks in the Nationalised, Private, and Cooperative sectors provide financial support through their loan schemes specially designed for women entrepreneurs like the Annapurna Scheme, Bhartiya Mahila Bank business loan, Orient Mahila Vikas Yojana, Dena Shakti Scheme, Udyogini Scheme and Mahila Udyam Nidhi Scheme to name a few.

2. OBJECTIVES OF THE STUDY

- To study the reasons for starting the businesses by the women in Nashik District.
- To analyse the Educational Qualifications and the Sources of Finances used for starting the businesses.

3. REVIEW OF LITERATURE

Dr. Anita Tripathy Lal (November 15, 2012) **Women Entrepreneurs in India - Over the Years!** In her observations states that women's empowerment is the key to economic development and therefore it is very necessary to provide access to women in entrepreneurship. The women should be imparted the training to sharpen their skills and competencies to successfully run their own businesses.

As per Dr. Asha E Thomas, (2016) **Analysing the Growth**

of Women Entrepreneurship in India the women of India majorly use self or owned savings as their initial capital and depend very little on the borrowed capital. They may borrow from their family and friends but do not prefer to opt for government financial assistance.

The study by Dr. Kalpana Konera (April 25, 2017) **Women Entrepreneurship in India - Problems and Prospects**states that women have a strong desire to accept challenging roles to meet personal needs and become economically independent. Today women are flourishing as entrepreneurs in the fields of fashion design, interior decorators, event management, Garment manufacturing, and many more avenues. They have come a long way from the traditional business of kitchen extensions like Papad, Pickles, and Powders and forayed into electronics, engineering, energy, and the various service sectors.

The report on **Global Entrepreneurship Monitor (2021-22)**, which is the largest and most prestigious annual study of entrepreneurial dynamics of the world carried out in India by the Entrepreneurship Development Institute of India and financed by the Centre for Research in Entrepreneurship Education & Development, suggests a significant increase in the number of women entrepreneurs in India, especially during and post-pandemic period.

In the pandemic period, many new people, especially women, entered entrepreneurship. Among these women, many have taken a leap forward by officially registering their businesses. The survey observes that the percentage of women entrepreneurs is 12.3% compared to the men who stand at 16.3%. As per the reports, the main reason or motivation to start a business is to earn an income as there is a scarcity of jobs.

Moreover, many women prefer to strike a balance between work and family, and this is possible if they start their own venture. They can have flexible working hours in business as compared to jobs. They can also utilize their leisure time for productive activities by starting a business.

4. METHODOLOGY

The data for the present study is collected through Google Forms which was circulated among the women entrepreneurs and personal interaction with these women in Nashik District.

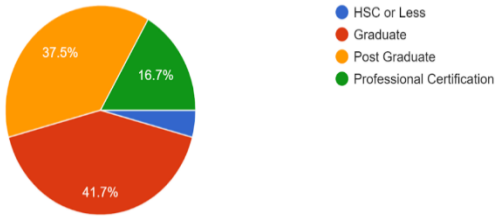
The data thus collected was analysed using simple mathematical tools like percentages and is presented in the form of Pie Chart and Bar Graphs.

The conclusions are drawn based on the data collected as well as interviews with the women entrepreneurs and the secondary data collected from various research papers and government and bank websites.

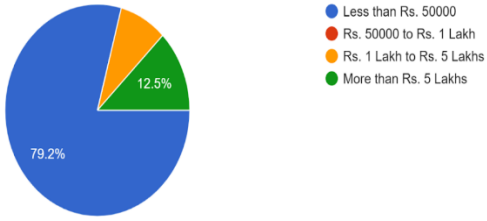
5. DATA ANALYSIS

Educational Qualifications

As per the data collected, it is observed that a maximum number of women can be considered highly qualified as they are either graduates or post-graduates. The number of graduates is 41.7% and Post Graduates are more than 37%. Many of the women have professional certifications, which indicate they are skilled. Although very few women are non-graduates, it can be observed that they have the spirit and the confidence to take risks and start their own businesses.



Capital Introduced

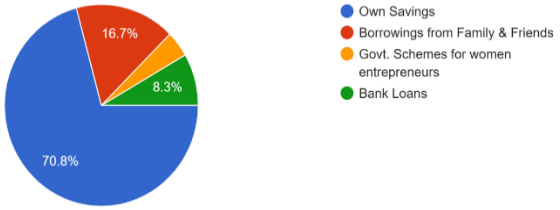


Among the women entrepreneurs, many can be considered as working in the micro sector as the capital introduced in the business is less than Rs.50000. They comprise of around 80% of the total respondents.

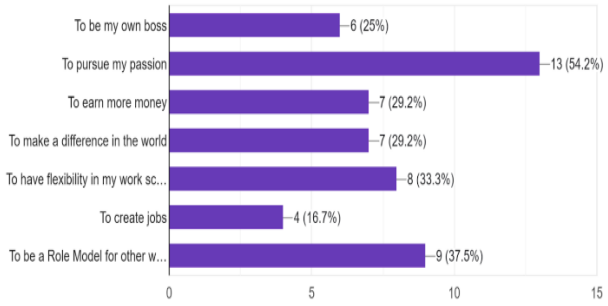
But at the same time, few of the women have capital of more than Rs.5 Lakhs invested in their businesses. These women are mainly those who are highly qualified with professional certifications. Such women can be considered role models by all women entrepreneurs. All the other respondents lie in the middle category where the capital invested is more than Rs.50000 and less than Rs.5 lakhs.

Sources of Capital

The next question that arises is the source of capital. The chart below shows the details of the sources of capital used by these women. It can be seen that many of the women have either used their own savings or borrowed from family and friends. Only a few have taken advantage of various government schemes. The women who have taken the benefit of the government schemes are only around 6%. The rest i.e. 8.3% have opted for bank loans.



Reasons for starting a business:



The women were asked about the reason or the motivation behind starting their businesses in the survey. Many of them stated that they wanted to pursue their own passion. Many of these women work in the field of garments and kitchen extension activities. So, it can be inferred that women have an interest in these fields inherently and so they feel comfortable in these businesses. Few of the women also pursue their hobbies in the field of arts and artifacts.

Among the other reasons stated were mostly to earn a livelihood or contribute their worth to the family along with having flexible working hours. To work flexible hours can be a very good reason to motivate women to start their own ventures. Businesses give them the required flexibility to balance work and family along with earning extra money, making productive use of time, and pursuing their hobby.

Few women have a holistic approach to business with the motive to make a difference in the world and to set an example for other fellow women to start businesses or become role models for other women. This approach is also an indicator of the social responsibility and social message these women give to the world.

6. CONCLUSION

From the above discussion, it can be easily concluded that women aspire to become entrepreneurs. They have the willingness and the passion to pursue businesses and take calculated risks to succeed in their ventures. They are ready to raise capital take a plunge into the world of business and have the confidence to stand tall.

It can be observed that they have raised the required capital through their own savings or by borrowing from family and friends like spouses or parents in many cases. This shows that their families are open to supporting them in their ventures and giving them the required moral and mental support in the businesses.

Many of the women are sceptical of raising funds for business from banks or through government schemes. The reason that can be observed may be the lack of knowledge or awareness of these schemes. One more major reason can be the self-doubt they have if they cannot succeed in business, then how are they going to repay the loan? This can be due to the secure way in which most women are born and brought up in our society.

Though the gender gap between men and women entrepreneurs has reduced, more and more women should be encouraged to start their ventures and become independent. They should be made aware of the various schemes of the banks and government specially designed for women entrepreneurs.

According to me, this responsibility can be more efficiently done by the existing women entrepreneurs who wish to become role models and lead the society for the upliftment of women entrepreneurs.

To a certain extent, the responsibility of mentoring the women entrepreneurs is done by various Women's Chamber of Commerce and Industry and other such Associations. The various NGOs and Entrepreneurship Development Groups can provide the awareness and encouragement required by women entrepreneurs through training and skill development programs.

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ORGANIC FOOD PRODUCT MARKET IN INDIA

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ABSTRACT

Organic food has grown substantial approval due to multiplicity of motives, which in chance has extended the native as well as worldwide sustainable food market. This editorial collects the significant facts associated to Indian organic product at single locus. Production and export values are analysed for the purpose of this study.Statistics show slight decrease in the export and the production of organic food in comparison to last years. This editorial also focuses on the government policies related to organic food market with the help of secondary data. For this study secondary data has gathered through publications, periodicals, research papers, thesis, articles and internet.

Keywords: Organic Food, Government Policies, Indian Market of Organic Food.

1. OBJECTIVE OF THE STUDY

- To give information about the Indian environment of organic food market.
- To analyze the status of production and export of organic food products.
- To analyze the various government policies related to organic food product.

2. INTRODUCTION

The worldwide market perceives numerous moves in the manufacture and consumption forms, particularly due to increasing ecological consciousness and rising preference towards sustainable existing selections. This has created consciousness towards the environment and has inspired or rather enforced various participants like inspired governments, enterprises as well as persons to take actions towards structure a sustainable prospect. Many enterprises and academics are currently functioning towards determining and developing substitutes, which areenvironmentally-safe and lessen the extreme burden on the natural sources. There is a steady shift towards the sustainability in various areas like energy, housing, clothing agriculture, personal care, tourism etc. This shift has equally taken place for the producer and consumer. The one identified area is agriculture sector where the extensive use of fertilizers and pesticides adversely affect our environment and it is also affecting the health of the people. On the other hand, during the production process of organic food farmers don't use artificial chemicals, human created fertilizers and pesticides. Organic food is grown without the use of growth hormonal injections. The organic food production is additional predictable to rise at a CAGR of 20.5 per cent and is estimated to extent US$ 2601 million by 2026 (EMR Business Solutions, 2020). This editorial tries to pitch light on the native organic product market situation.

3. REVIEW OF LITERATURE

AnamikaYadav (2023), Certifying Organic Food in India Further needs supports- This blog is based on the certification of USDA . So, information related to USDA certification is extracted through this blog.

Babu C, JN Karunakaran (2021), Status ,benefits and future Prospect of organic farming in India : the various schemes and programmes of government related to organic food product were mention in this paper and reference has been taken for the current study.

DeepikaChahal,Anju Rani (2023) " Green Farming in India issues and policy perspective"- In this paper policy and procedure related to organic food market has given.

Dr A. K. Yadav (2022), Organic and Natural Farming Systems Promoting Non-Chemical Agriculture through Government Programme- Detail information regarding policies, procedures and certification has given.

Ankit Chandra, Mark Rosmann, Mariano J. Beillard (2021)- In this report detail information about Indian Organic Food Market has given. Data related to export and USDA and APEDA agreement termination has takenfor the current study purpose.

Helga Willer, Bernhard Schlatter and Jan Trávníček (2023), The World of Organic Agriculture Statistics and Emerging Trends 2023 – This report gives an overview of International organic food market. Export related information has taken into consideration for the purpose of this research paper.

4. OVERVIEW OF INDIAN ORGANIC FOOD MARKET

As per the report of APEDA India's production in the field of organic food in the year 2022-23 is around 2.9 Mn Mt.

The Indian organic food market includes products like fruits, vegetables, dry fruits, cotton, oilseeds, medicinal plants, pulses, millets etc. The leading organic food producer is Madhya Pradesh which istrailed by Maharashtra, Rajasthan, Karnataka and Odisha. Fiber crop has the highest production in this field which is trailed by oil seeds, sugar crops,cereals and millets.India is leading in terms of producers (15,99,010) which is followed by Uganda(4,04,246) and Ethiopia (2,18,175). 56% producers are from India among top 10 countries. (FIBL Report). According to the report of IMARC group the major players of this industry are Suminter India Organics Private Limited, Nature Bio-foods Limited, Organic India Private Limited, Sresta Natural Bioproducts Limited and Phalada Agro Research Foundations Private Limited etc.

5. ANALYSIS OF PRODUCTION AND EXPORT OF ORGANIC FOOD PRODUCTS

Table 1

Year	Production (organic and in conversion MT)	Percentage Change	Organic Exports (million USD)	Percentage Change
2017-18	1675560.70		515.44	
2018-19	2607396.00	55.61%	757.00	46.86%
2019-20	**2709119.52**	3.90%	689.00	-8.98%
2020-21	346891.92	28.05%	1040.00	50.94%
2021-22	3410195.02	-1.69%	771.96	-25.77%
2022-23	2952926.29	-13.41%	708.33	-8.24%

Source: APEDA

The above data indicates that the highest production and export during the period (2020-21) of Pandemic. At this point India had witnessed the growth of 50.94% in export and 28.05% in production due to increase inthe health awareness worldwide. Then statistics indicates continuous decline in the production and export of organic food product during the year 2021-22 and 2022-23.The Reasons behind this decaycompriseuncleargoverningprocedures.As per the agreement between USDA and APEDA (2006) USDA had permitted toprovidecertification to APEDA certifiers.But this agreement was dismissed in 11, 2021. The reason behind this termination is India's inefficiency to control its program related to organically grown food. (As Per USDA Report)

Looking at the bigger picture as per the above statistics while comparing the production of 2017 to 2023, it indicates the immense growth of 76.24%. It also indicates the growth of 37.42%, while comparing the export of 2017 to 2023.These results also indicate that there is huge potential in this sector. As per the article of Times of India this market is expected to compound annually grow 23.8% in the sphere of 2023-28.

Government Policies and Programmes related to domesticorganic food market

6. DOMESTIC ORGANIC PROGRAM AND POLICY

Parampragat Krishi Vikas Yojna-

This scheme was introduced in the year 2015.To improve the health of the soil is the main purpose of this scheme. This scheme is under the National Mission on Sustainable Agriculture (NMSA) which is centrally Sponsored Scheme (CSS) and further a stretched form of Soil Health Management.

The system supports organic based farming and for these purpose villages which are based on organic farming opted by cluster method. The size of such villages should be minimum 20 hectare. Under this scheme PGS- India locally based certification authority provides certificates for the surety of quality. According to this scheme the farmers get financial assistance of 50,000 INR per hectare only for 3 years. Till 16 November, 2022 the area which is covered under this scheme is 6.4 lakh hectares and 16.1 lakhs farmers are involved under this scheme.The amount sanctioned for this scheme is 1854.01 Cr. Up to 2022-23.

Mission Organic Value Chain Development for North East Region-

This structure was effective in the year 2015-16 and it is specifically for the 7 North East States.They established their specific organic food's brand. The objective of this scheme is to improve value chain for each organically produced crop commodity. Under this scheme 379 organisations and companies' farmers producers has been included.1.89 lakh agriculturalists and 1.73 lakh hectare area has included since 2015-16. The amount sanctioned for this scheme is 919.42Cr. This scheme is also included under

the National Mission on Sustainable agriculture.

Production Linked Incentive Scheme for Food Processing Industry (Plisfpi)-
Union Cabinet had sanctioned this scheme on March 31, 2021. The objective of this scheme is to make Indian market as worldwide victor. This scheme also supports theSmall medium enterprises for their advanced organic products. In this scheme regulations related to lowest sales and compulsory investment are not included for the chosen enterprises. The amount sanction for this scheme is INR 10,900 Cr for the period 2021-22 to 2026-27. 14 submissions have been chosen under this category.

Promoting And Encouraging for Organic Inputs-
Government had initiated various schemes for encouraging bio inputs-

- BhartiyaPrakritikKheti Bio-Input Resource Centres
- PM Programme for Restoration, Awareness, Nourishment and Amelioration of Mother Earth (PM-PRANAAM)
- Galvanizing Organic Bio-Agro Resources Dhan (GOBARdhan) scheme

Jaivik Kheti Organic E-Commerce Portal-
This portal is created by Ministry of Agriculture and Farmers Welfare, along with MSTC. This portal is created to increase the awareness among the farmers related to organic farming.

7. SCHEMES RELATED TO CERTIFICATION

The National Program for Organic Production-
This program is commenced under APEDA (Agriculture and Processed Food Products Development Authority).The main emphasis of this regulatory system is to maintain the standards of organic production.Under this system rules and regulation related to certification are included. Under this scheme APEDA followed international standards generated by International Federation of Agriculture Movements. It has 36 official authorization bodies, which provide certificate and logo fordomestic market and import purpose. The standards which are included under this programme are globally accepted. (Identical to EU and Switzerland)

Participatory Government Scheme- India
This scheme was introduced by the Ministry of Agriculture in 2016. Under this programme native standards are taken into consideration for the assurance of quality. It stresses the involvement farmers, group of farmers and individual traders. There is no involvement of third party in the certification process.

The above-mentioned system is utilized for the purpose of certification but FSS Act 2006 control the organically grown food. According to the regulations of FSS Act, FSSAI license has to be obtained by all the individuals involve into the manufacturing, packing, selling and processing of import. License can be given to those entities which have obtained the certificate through NPOP or PGS-India.

8. CONCLUSION

The above-mentioned study gives an overview of the Indian environment related to organic food market. Analysis of production and export of organic food market indicates growth in the period of six years (2017-2023). But it also indicates slightly decline in production and export in the year (2021-2023). Then the information related to various government schemes and policies are covered. Initiatives taken by the government for the development of organic food industry are mentioned. Schemes related to certification are also mentioned. The objective of the various government schemes is to promote organic farming and making India's agriculture chemical free. The statistics indicates that the growth rate is low in current period but it also indicates the huge scope in this industry in long run.

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NAVIGATING THE INNOVATION LANDSCAPE: STRATEGIES FOR ENTREPRENEURIAL SUCCESS IN THE STARTUPS ECOSYSTEM

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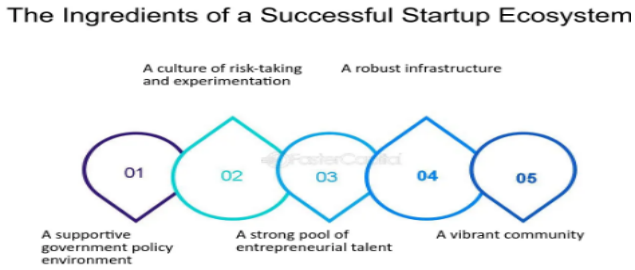
ABSTRACT

The startup ecosystem has become a hotbed for innovation and economic growth, offering immense opportunities for entrepreneurs. However, navigating this landscape can be challenging due to its dynamic nature and high levels of uncertainty. This research paper explores various strategies that entrepreneurs can employ to achieve success in the startups ecosystem. By analysing case studies and drawing insights from existing literature, this paper aims to provide a comprehensive overview of the key strategies that contribute to entrepreneurial success, including innovation, market analysis, networking, funding, and adaptability. The contemporary business landscape is characterized by rapid technological advancements and increasing competition, especially within the startups ecosystem. Entrepreneurs face numerous challenges in navigating this innovation landscape and achieving success. This research paper explores the strategies that can help entrepreneurs thrive in the startups ecosystem by effectively managing innovation. Drawing upon existing literature and real-world case studies, we identify key drivers of entrepreneurial success and provide actionable insights for aspiring and existing startups.

Keywords: Startups Ecosystem, Entrepreneurial Success, Adaptability, Actionable Insights etc.

1. INTRODUCTION

In this dynamic and ever-evolving landscape, we will embark on a journey to explore the key strategies and approaches that pave the way for entrepreneurial triumph. From identifying emerging trends to harnessing cutting-edge technologies, this endeavour will equip you with the knowledge and insights to navigate the intricate pathways of innovation, ensuring that your startup not only survives but thrives in the competitive startup ecosystem.



(Fig no.1 source faster capital.in)

This rapid growth of the startups ecosystem has reshaped industries and economies worldwide. Entrepreneurs, armed with innovative ideas, are the driving force behind this transformation. To succeed in this competitive environment, entrepreneurs must adopt strategic approaches that enable them to navigate the challenges and seize the opportunities presented by the startups ecosystem. Innovation has become the lifeblood of the modern business world, and nowhere is this more evident than in the startups ecosystem. Startups operate in highly competitive and dynamic environments, making it imperative for entrepreneurs to effectively navigate the innovation landscape. This paper aims to shed light on the strategies that can empower entrepreneurs to succeed amidst the challenges and opportunities presented by the startups ecosystem.

2. OBJECTIVES OF THE STUDY

The startups ecosystem is a complex network of organizations, investors, mentors, and resources that nurture and support entrepreneurial ventures. While the fundamental objectives for achieving entrepreneurial success in the startups ecosystem may shift over time due to evolving market dynamics and technological advancements, here is the list of recent objectives that were pertinent up to that point and are likely to retain their significance.

- **Sustainability and Impact**: Startups are increasingly focusing on sustainability and societal impact.
- **Digital Transformation**: In an increasingly digital world, startups often aim to leverage technology for efficiency, customer engagement, and market reach.
- **Diversity and Inclusion**: Building diverse and inclusive teams is a priority for many startups. Objectives may involve creating a more inclusive workplace, fostering diversity in hiring, and ensuring equal opportunities for all employees.
- **Ecosystem Engagement**: Startups often seek to engage with broader industry ecosystems, collaborating with other startups, established companies, and industry organizations to drive growth and innovation.
- **Innovation and R&D**: Encouraging a culture of innovation and advancing in research and development can help startups stay competitive and deliver cutting-edge solutions.
- **Brand Building and Reputation Management**:

Establishing a strong brand and managing the company's character are ongoing objectives, as a positive brand image can lead to customer loyalty and investor sureness.

3. STRATEGIES FOR ENTREPRENEURIAL SUCCESS

Achieving entrepreneurial success requires a combination of effective strategies, determination, and adaptability. Drawing from the literature review and case studies, we outline strategies that entrepreneurs can adopt to navigate the innovation landscape successfully within the startups ecosystem. Here are some key strategies to help you on your entrepreneurial journey:

Customer-Centric Innovation:
Startups should prioritize customer needs and feedback. Regular interaction with potential users helps in refining product or service offerings, ensuring market fit, and minimizing the risk of failure.

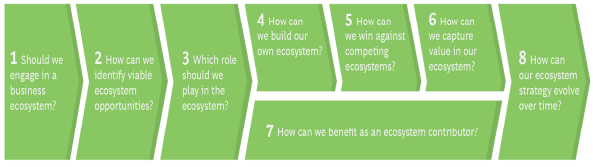
Build a Strong Team:
Entrepreneurs should assemble a team with diverse skill sets, fostering creativity and problem-solving. Effective teamwork is essential for translating innovative ideas into tangible outcomes.

Resource Optimization:
Startups should focus on lean operations, optimizing resource allocation to maximize efficiency. This includes managing financial resources, time, and talent effectively.

Agile Development and Adaptation:
A flexible approach to product development allows startups to respond quickly to changing market conditions. Pivoting when necessary is a key strategy for survival and growth.

Visionary Leadership:
Entrepreneurs should provide clear direction and inspire their teams with a captivating vision. Effective leadership nurtures commitment and determination among team members.

Exhibit 1 - Ecosystem Strategy Framework



Source: BCG Henderson Institute analysis.

4. FUTURE RESEARCH DIRECTIONS

Future research can be deeper into the specific challenges faced by startups in different industries and regions. Additionally, the role of emerging technologies, such as artificial intelligence and block chain, in shaping the startups ecosystem warrants further investigation. Understanding how startups can leverage these technologies for innovation and competitive advantage will be critical for future entrepreneurial success.

Innovation and Differentiation:
Innovation lies at the heart of successful startups. Entrepreneurs must identify unmet needs or problems in the market and create unique solutions that differentiate them from competitors. Case studies of companies like Apple, Tesla, and Airbnb demonstrate the power of disruptive innovation in capturing market share and driving growth.

Market Analysis and Customer-Centricity:
Thorough market analysis is crucial for understanding customer preferences, pain points, and emerging trends. Entrepreneurs should conduct market research to validate their ideas and refine their products or services based on customer feedback. The rise of lean startup methodologies underscores the significance of iteration and continuous improvement.

Networking and Partnerships:
Building a strong network within the startups ecosystem can provide valuable resources, mentorship, and potential partnerships. Attending industry events, joining accelerators, and leveraging online platforms can help entrepreneurs connect with investors, mentors, and fellow entrepreneurs. Collaborative partnerships can accelerate growth and provide access to new markets.

Funding Strategies:
Securing adequate funding is essential for scaling a start-up. Entrepreneurs can explore various funding options such as bootstrapping, angel investment, venture capital, crowdfunding, and grants. Crafting a compelling business plan and presenting a clear value proposition are crucial steps in attracting investors.

Adaptability and Resilience:
The startup landscape is characterized by uncertainty, and entrepreneurs must be adaptable and resilient in the face of challenges. Flexibility in adjusting business models, strategies, and products based on market feedback is key to survival. Successful entrepreneurs are those who can pivot when necessary without losing sight of their core vision.

5. CONCLUSION

In conclusion, navigating the innovation landscape is essential for entrepreneurial success in the startups ecosystem. Entrepreneurs should highlight customer-centric innovation, build strong teams, optimize resources, embrace agility, and provide visionary leadership. By adopting these strategies and learning from successful case studies, entrepreneurs can increase their chances of thriving in this dynamic and competitive environment. The startups ecosystem offers vast opportunities for those who can effectively manage innovation, adapt to change, and stay committed to their vision.
Future researches candeliver deeper into the specific

challenges faced by startups in different industries and regions. Additionally, the role of emerging technologies, such as artificial intelligence and blockchain, in shaping the startups ecosystem warrants further investigation. Understanding how startups can leverage these technologies for innovation and competitive advantage will be critical for future entrepreneurial success.

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THE STUDY OF TAXATION STRATEGY ON BETTING GAMES IN INDIA

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ABSTRACT

Cloud-to-cloud migration is a pivotal component of modern IT strategies, enabling organizations to harness the benefits of multiple cloud environments. However, amidst this transition, ensuring the security of data and applications is of paramount concern. This research paper investigates the significance of security measures in cloud-to-cloud migration and explores strategies and best practices for enhancing security using CloudGuard by Check Point. Through an extensive literature review, we identify and analyze the key security challenges inherent in cloud-to-cloud migration, encompassing data privacy, access control, network security, encryption, and threat detection. We present CloudGuard as a robust security solution, delving into its features and capabilities, which offer tailored security measures for mitigating these challenges.

Keywords: Pool Money, Betting, Gambling, Analytics Skill, Seed Funding, Angel Investors etc.

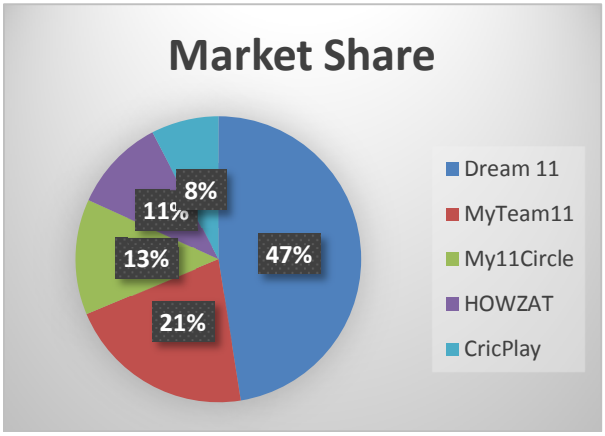
1. INTRODUCTION

Getting lots of questions from abstract of this research paper now we can understand about the perception of betting games, that how they worked, how they earn, top betting games company in India why they are illegal and how they are taxable. Let us quick understand how betting game works suppose two person Mr. A and Mr. B meet at an online platform both spend 100 Rs. that means total money pool 200 Rs. and on that 200 Rs. platform charged 15-25% fee as platform fee rest of money is the main pool for betting and winner get the winning prize. This complete process is called online gaming or betting.

Source – MPL

2. KEY HIGHLIGHTS OF BETTING GAMES

- Indian betting sport platform revenue in financial year 2022 is recorded 68 billion INR.
- This industry expected value till 2030 somewhere around $78.5 billion with 14% CAGR.
- Online betting gaming **(AKA analytics game)** are taxable under Income Tax Act **section 115BB**
- This comes under the head of "Income from other sources'' while filling tax return.
- Winning from online gaming are taxed rate of 30% excluding cess and if we add the include the cess 31.2% will be taxable.
- 30% TDS will be deducted from betting apps and betting games profit.
- From total 68 billion rupees market Dream 11 capture the 47% share of this industry along with 47% Dream 11 also sponsor the Indian cricket team by replacing Byju's for 358 cr. rupees.



Source – IFSG

3. LEADING BETTING GAMES IN INDIA

In India there are lots of betting games are popular in recent times for their maximum winning prizes. This is also true

that betting games as betting are totally illegal but they operate as analysis gaming that shows your analytical talent so, that is why they are taxable under the Income Tax Act. Here we have some popular name of betting games that operate in India heavily with their root details and how they make this game into the billion-dollar business.

Here top betting games name of the companies along with their founder and who invest on these startups from very beginning all details are covered under this table. Tables of this data are given below –

Company logo	Company Name	Founder	Investor	Investment logo
DREAM11	Dream11	Harsh Jain Bhavit Sheth	Tiger Global	TIGERGLOBAL
GAMES 24 SEVEN	GAMES24x7	T. Thampy	Tiger Global	TIGERGLOBAL
MPL	MPL	Sai Srinivas	Sequoia Capital	SEQUOIA
11 WICKETS	11Wicket	Navneet Makharia	NA	
HALAPLAY	HALA Play	Swapnil Saurav	Nazara Technologies	Nazara™

4. RESEARCH OBJECTIVE

The primary objective of this research paper is to analyse the whole segment of this betting business and how they operate. Here we have some more crucial objectives of the same as listed below-

- To identify the Unique Potential Implications on the Economy.
- To analyse the Strategic considerations of taxation Policy.
- To measure the work function and effectiveness on the business
- To study the Government policies in terms of licensing.
- To measure the impact of profit and its coverage.
- To analyse the Value creation behaviour.

At the last we also cover the taxation regimes how they work so taxes are charged by two regime –

- Old tax implementation on betting
- New tax implementation on betting

5. OLD TAX IMPLEMENTATION ON BETTING

Let us understand this step wise:

- Suppose two people C and D are playing betting on some application.

Both through 100 rupees each on this game that means 200 rupees collected as pool.

- Now here from this 200-rupee platform charged 15-25% as platform fee.
- Assume 15% is charged by the platform as platform fee which is 30 rupees.
- Now these 30 rupees is taxable under Income Tax Act at 18% which is 5.4 rupees.
- Now total deduction from the pool money 30+5.4 rupees which is 35.4 rupees.
- Now the net pool money is balancing 164.6 rupees.
- After that if D win this betting, he will receive 164.6 rupees and 30% TDS is deducted from that money he earns.
- That means 64.6 rupees is taxable at 30% which is 19.38 rupees.
- Now D's net profit is 45.22 rupees.

6. PRACTICAL FEASIBILITY ANALYSIS

C's contribution = 100 rupees
D's contribution = 100 rupees
Total pool money = 200 rupees
Platform charged 15% fee of total pool money = 30 rupees
GST will charge on 30 rupees = 5.4 rupees
Now total deduction from pool money = 200-35.4

Net pool money = 164.6 rupees
If D win this betting, he will receive 164.6 rupees
TDS will be deducted 30% on profit = 30% of 64.6 rupees
TDS = 19.38 rupees
Now net profit = 164.6-19.38
Net profit = 45.22 rupees

7. NEW TAX IMPLEMENTATION ON BETTING

Let us understand this step wise:-

- Take the same person for this taxation.
- Suppose two people C and D are playing betting on some application.
- Both through 100 rupees each on this game that means 200 rupees collected as pool.
- Now here government says both give me 28% tax on this pool money which is 56 rupees.
- Now total pool money remains the 144 rupees.
- At this stage on these 144 rupees platforms charged his fee 15% which is 21.6 rupees.
- Now the total pool of money is 122.40 rupees.
- If D win this betting, he will receive 122.40 rupees and 30% TDS is deducted from that money he earns.
- That means 22.40 rupees is taxable at 30% which is 6.72 rupees.
- Now D's net profit is 115.68 rupees.

8. PRACTICAL FEASIBILITY ANALYSIS

C's contribution = 100 rupees
D's contribution = 100 rupees
Total pool money = 200 rupees
Government charged GST 28% of total pool money = 56 rupees
New pool money = 144 rupees
Platform charged 15% from new pol money = 21.6 rupees
Net pool money = 122.40 rupees
If D win this betting, he will receive 122.40 rupees
TDS will be deducted 30% on profit = 30% of 22.40 rupees
TDS = 6.72 rupees
Net profit = 122.4-6.72 rupees
Net profit = 115.68 rupees

9. TAXATION IMPACT ON THIS INDUSTRY

Here we can see difference between old and new taxation betting. Both case 200 rupees is invested but in case 1 profit is **45.22 rupees** after deduction of all charge. On other hand profit is just **15.68 rupees** which is very low. Risk and reward ratio on both cases is 45:15 which is very low from the previous case. There are other reasons are mentioned here –

- This industry is forecasting to grow with 14% CAGR at $78.5 billion that gives the projected $21.84 billion tax but if this taxation is remains same then the numbers may be different that would be big loss for Indian economy.
- When we see all these big numbers then we should also know that where these money came from. In India lots of betting apps are operating and many of them are backed by big ventures. If this taxation impact is going wrong then many of the ventures lose their money and maybe they will not invest in India in future.
- After all of this when revise taxation news is out then many of the casino's listed company on Indian Stock Exchange are hit low here, we have some glimpse of this action. Here we can see the chart of Delta Corp Ltd that caters the casino business but at 12 July 2023 tax news affect the market like this. Share price slip from **246 to 220.10 rupees.**

Source – Trading View

10. CONCLUSION

This research paper gives the wider view of the both side betting sports games. If taxation becomes the same then it may be India loose revenue from this industry. The main conclusion of this report is if betting is illegal then why government charged tax on it. But the loophole is government clearly says betting causes the financial lose so make it this gaming industry AKA gambling illegal on Indian land but if any company or organization run this business it should be on yacht then it would be taxable and become legal.

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A REVIEW ON BIG DATA ANALYSIS FOR TRAVEL AND TOURISM INDUSTRY

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ABSTRACT

The objective of this paper is to survey and enlighten most influential and new Data Analysis techniques like Big Data Analytics. These techniques play an essential role in understanding customer needs in a better way, automate work processes and to analyze current market trends in various fields like Tourism and Hospitality Industry. Despite COVID-19 pandemic restrictions, Tourism especially in India is still a trendy opportunity for businesses and economic growth of the country. There are well established big players, small and medium-sized tour operators and agents who struggle hard in competitive environment to ensure their customer loyalty. In this era of modern world, huge volume of data (Terabytes) is produced everyday by various sources like Companies data, Mobile data, Customers data, Financial data and so on which is expanding daily. There is a need to analyze this Big Data to provide insights and valuable information through Big Data analytics functions so that business intelligence can be improved and proper decisions can be made. Some of the Big data analysis functions for Tourism Industry can be Descriptive, Predictive, Prescriptive and Diagnostic analytics through which knowledge hidden within Big data can be obtained. There are numerous benefits that Travel industry can gain through Big data analysis as Enhanced customer experience, Pricing and revenue optimization, Targeted marketing and Competitor research and many more. With the immeasurable growth of Internet, tourists share their travel experiences on Twitter, Social Media, Blogs and Vlogs. It has become highly powerful source of information that can be mined though various forms as Text Mining, Sentiment analysis, opinion mining is leading formats of Big Tourism data. So Big data based analysis is crucial but demanding problem globally because data is enormous yet vital for correct decision making.

Keywords: Tourism, Data Analytics, Big Data, Social Media Data, Prediction, Travel.

1. INTRODUCTION

Big Data usage in tourism and hospitality industry has been discussed in many research platforms because the tourism industry is able to generate tons of data each day, academicians and industry professionals want to take the advantage of this huge data in their own way. Following three primary sources create Big data related to Tour and Travel Industry.

- Users who are clients taking tour services.
- Devices like mobiles generate data.
- Operations performed by staff or external users in the system.

In such a big data era, a variety of big data, have been used in extensive areas of science, engineering, healthcare, management, business, tourism, etc. Even at an early stage, diverse big data have been applied to tourism research and made an amazing improvement. This paper presents a comprehensive literature review on different types of big data in tourism research.

2. BIG DATA AND TOURISM

In the last couple of decades, Big data has gained attention of various Policy makers, Scientists, Data analysts, Government and Enterprises who require abundance of data to make decisions and future planning. In this modern era of information, huge amount of data, both structured and unstructured are generated everyday that requires the use of proper tools for analysis and maximum use in predictions. The process of acquiring hidden and useful information / insights from this voluminous data is called "Big Data Analytics". Various progressive decisions are made possible with this analysis.

The Big data is characterized by many V's as Volume, Velocity, Veracity, Value, Variety, Variability, Volatility, Validity and Visualization. The huge amount of information measured in units of storage as Gigabytes(GB), Terabytes(TB), Petabytes(PB), Exabytes(EB), Zettabytes (ZB) and Yottabytes(YB) specifies Volume. The speed at which data is processed and generated is specified by Velocity which should be high in case of Big data. Accuracy of data is denoted by Veracity feature and lack of Veracity harm to precision of results. Variety is related to diversity that is various kinds of data are available. It is required to properly organize and manage different forms of data. The advantages that companies gain from analysis is its Value which is the vital component of big data. Data variability is continuously changing aspects of data means information obtained from one source may not be the same as from others so it impacts on homogeneity of data. Volatility means the life span of data as some data items may be valid for short duration and others for longer

durations. The insights and results obtained after Big data analysis are presented through visualization tools as charts, bar graphs and histograms.

In Big data analysis applications there are following components to function properly for Decision support :-

- Ingestion (Data collection and Preparation).
- Storage (Storing data).
- Data Analysis.
- Consumption (Sharing the result and insights through visualization techniques).

2.1 BIG DATA SOURCES AND TYPES IN TOURISM DATABASE

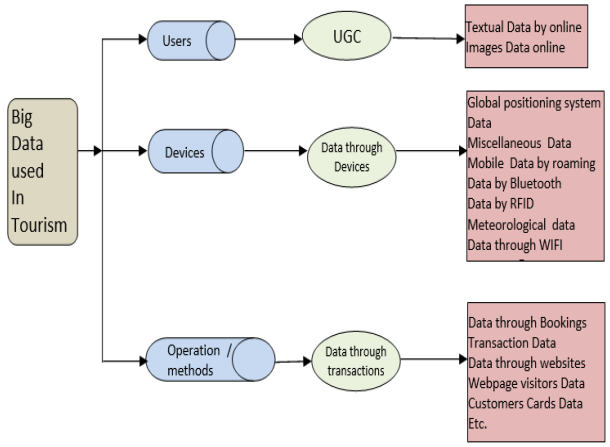

Figure 1.0 : Big Data Sources and Types In Tourism Studies

In the last decade, technological advancements and uses of mobile devices increased tremendously due to that huge volume of data gets accumulated. Big data stored in travel and tourism sectors falls into following three primary categories according to their sources of collection:

- **UGC** (User generated Content Data) We can say it is textual data generated online like social media posts, reviews, blogs, comments and feedbacks, geo-tagged food and online images / photos data like restaurant pictures and destination image data.
- **Device data** (Collection through devices) Mainly CCTV cameras that are installed in different tourist places, restaurants and hotels, Bluetooth and WIFI data, vehicles data, mobile profiles data, GPS and roaming data of mobiles, Meteorological data, etc.
- **Transaction data** (Collection through operational functions) Tour booking data online, search engine data, online tickets booking data, webpage visiting data, transactions done by tourists etc

From above text it is clear that there are different issues related to different data types that support information but it has to be analyzed systematically from the research perspective. Some challenges are also there that need to be handled so that further direction towards big data analysis can be drawn. [2]

Through this review paper, understanding of the data types, their sources is done and it offers valuable insights for further study. [1]

3. TYPES OF BIG DATA ANALYTICS IN TRAVEL AND TOURISM

3.1 DESCRIPTIVE ANALYTICS

Current real time and historical customers data, both types are dealt with Descriptive analytics operations. This analysis can make objective assessments, especially in tourism sector and provide predictions about near future for travel operators. Predictions are helpful for enhancing business and increasing finance in tourism, for example selling last minute discounted tours in festive and certain periods of the year thus reducing costs for customers providing them benefits like they have to pay 80% of the total cost or 50% of the booking costs. In descriptive analysis, one single data attribute / item can be related to other attributes, their correlations or associations are found, then using visualization techniques can be shown in a better way.

3.2 PREDICTIVE ANALYTICS

This type of analysis is used by travel companies to make strategic long term decisions on the basis of forecasts done on previous historical data trends. There are various types of tours as Business, Excursions, Entertainment, Medical and health, Leisure, Religious and customers opt according to their interests and preferences, so predictive analysis helps to discover the type of tour and geographical destinations are going to get more returns in the forthcoming season or years. Predictions can be done on values hidden in Data attributes by using various classifiers models. Classification is a Data mining approach that is supervised in which Data is first preprocessed (Noise and missing values are handled), Converted to some standard format and then executed with some classification algorithm. Classification model is learned with Training data set and then tested with Test data. The result is that it classifies data according to model learned.

3.3 PRESCRIPTIVE ANALYTICS

Prescriptive analysis is the advanced type of Prediction / forecasting technique that uses simulation structures. This type of analytics uses advanced tools and processes to provide optimal course of action for example help tour operators not only giving forecasts but identify strategies to maximize business profits and woo customers. For example cloud data warehouses are used to deliver cost effective architectures of machines as per customers and businesses requirements of speed, storage and power. Similarly automated machine learning (Auto ML) tools are used to efficiently build, train, test and deliver various custom models.

4. TOOLS USED WITH BIG DATA ANALYSIS

Both supervised as well as unsupervised learning based process algorithms are being used in the Big Data platform. To obtain the targeted outcome the raw data with the very basic algorithm is implemented and the process is known as the support vector machine (SVM). However in present time, recent parallel support vector machines are able to overcome the existing loopholes in previous SVM like scalability, time complexity, memory management issues etc. The new technology like Artificial Neural Networks (or ANN) are some established techniques used to handle issues like image analysis, adaptive control and pattern recognition. [5]

To manage and integrate effectively Big data in Cloud computing applications, one has to understand the services and tools offered by these two. Big data applications are supported by many vendors for example Google IBM and Microsoft offer No SQL and Hadoop and Amazon Web Services (AWS). Also Many cloud providers come up with Big data services like Google's Big Query, AWS's Elastic Map-Reduce( ) and provide Hadoop framework that can be used by business applications and users as per their demand, can be scaled automatically and are very cost effective for data processing.

Different tools and services are used for data mining tasks for example, WEKA (Waikato Environment for Knowledge Analysis), Orange, KNIME, R Studio and Rapid Miner etc that provide effective Data mining, machine learning algorithms, user friendly interfaces and visualization tools. Many Data analysis tasks can be performed easily through retrieval of information in text mining, prediction modeling, machine learning, patterns recognition, classification and clustering. These tools and techniques are suitable and efficiently perform various data mining tasks like extraction of previously unknown hidden patterns that identify customers buying patterns, discrimination and characterization methods to identify association and correlation between attributes, classification of data for prediction and forecasting etc. Apart from this Cluster analysis is one of the important unsupervised machine learning algorithm and Outlier analysis can used to detect card hacking and other unusual behavior and detect noises within data.

5. RELATED WORKS

In all Service providing sectors, Travel and Tourism industry is the most important from economical growth of a country and favourable for customers and businesses. People from the globe travel for various purposes may be leisure, religious, business or heritage visits etc. From an India perspective, tourism can be divided into 3 different types inbound (global travellers coming to India); domestic (Indian travelers travelling to destinations within India) & outbound (Indian travellers going to international destinations). [7]

Generally, for Travel, tourism and hospitality industry, Big data and analysis are contemplated as most beneficial for the growth of business and country both. Actually technological advancements influence aspects of customers behaviour patterns analysis through big data analytics techniques. It supports business intelligence functions for decision making, getting insights into data patterns and large volume of data can be handled properly and efficiently through user friendly methods. By using improved and advanced cloud architectures and hardware, cost of big data analytic services has declined as well performance has improved. Due to this, significant opportunities have been provided to businesses to support their activities and gain benefits in the competitive environment. The systematic uses of big data analytics increase process cost to a great extent and helps tour operators to take strategic decisions. [3]

The increased impact of Big data and analytics is expected to influence businesses mainly tourism industry in the coming years. It can provide valuable insights that can be used in effective strategies to increase profits of hospitality and tourism industry so that they can improve CRM (customer relationship management) operations, can do market analysis and sustain in this competitive environment. [8]

The Sustainable Development 2030 program is changing the whole world and so is applicable to tourism industry as well. Sustainable tourism programs and techniques are the options that can provide socially, economically and environmentally sound tour options to customers and organizations are moving forward with this agenda. Through new and important technology i.e. Big Data Analytics (BDA), tourism industry can be benefitted by enhanced tourism experiences, destination selection and customer satisfaction. [4]

In the year 2000 when tour operators, hotel managers and travel and tourism industry started using IT (Information Technology) for online hotel booking, e ticketing, online tour booking and to perform their daily office works but after that the usage of IT Tools has increased tremendously. [9] In the current scenarios the use of social media networks and online platform has increased so tourism industry is also opting these techniques to enhance their business profits. [10] Big Data Analytics (BDA) is a new but advanced attention seeking technology that is impacting on various sectors especially tourism industry too. [11] GPS (Global Positioning System) is used now days to analyze huge geographical data to know data patterns and enhance forecasting in travel and tourism. [12]

In the last decade, there has been tremendous use of social media networks as facebook, instagram, twitter and it is increasing day by day. The result is that it has resulted in huge volume of user generated data that needs to be handled properly by many methods as text mining, document analysis, opinion analysis. Through the document structure, text content analysis, one can find out opinions or views about the businesses operations and it is a valuable feedback for predicting sales or stock prices and planning tours destinations based on customer experiences. Twitter is the

most reachable source of data that can be analyzed via data mining techniques and big data analytics. [6]

6. CONCLUSION

Big data has fascinated the consideration due to its great potential and ability to solve problems associated with large amounts of data. The tourism industry is also one of the industries that seeks to use the concept of big data to improve business processes. Large-scale tourism, with its convenient, fast and low gateway, makes it very convenient for tourists to make sentiments calculations, and it has become one of the main sources of tourism big data.

This review paper presents the types of Big data, techniques and tools that can be employed in Big data analysis so that hidden patterns can be identified and sectors like tourism can take benefits from this. In future papers, we can provide details of data collection, Big data analysis and results of the algorithm so that efficient analysis can be drawn.

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A STUDY ON FAST MOVING CONSUMER GOODS IN SHOPPING MALLSWITH SPECIAL REFERENCE TO UTTAR PRADESH

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ABSTRACT

This Paper focuses on the consumer demographics and behaviour of numerous fast-moving consumer products found in shopping malls of Uttar Pradesh. Fast moving consumer items have minimal profit margins and so sell in huge volumes in the regional market. As there are numerous brands in the market for the same category of things, it is critical to understand how to increase brand value for customers. Consumer packaged goods, also referred to as fast moving consumer products, are goods that are provided for sale at low prices and quickly reach the market. This covers non-durable products like food, soft drinks, and cosmetics. Despite the fact that FMCG items have a relatively low profit margin due to their high volume of sales, retailers nevertheless make much more money than suppliers do. Perhaps the best example of a low margin, high volume business is FMCG. Johnson & Johnson, Unilever, Kellogg's, Heinz, Nestle, Colgate-Palmolive, Procter & Gamble and The Coca-Cola Company are among the FMCG companies. The fast-moving consumer products industry has seen a surge in global sales promotion efforts in recent years. The FMCG sector of India creates employment opportunities. It is currently growing at a double-digit rate and is expected to maintain a high growth rate. Indian buyers were conservative, partly due to low disposable income and few competing products. Inflation in food products can limit consumer demand and pricing flexibility for FMCGs by reducing consumer purchasing power which alters purchases.

Keywords: FMCG Products, Shopping Mall, Consumer, Demographic.

1. INTRODUCTION

The fast-moving consumer goods sector contributes significantly to the Indian economy. About 3 million workers, or about 5% of all industrial employment in India, are employed in this country's fourth largest economic sector. Every segment of society consumes these products on a daily basis, regardless of social status, economic level, age group, etc. Due to its low penetration level, established distribution network, low operational expenses, and low per capita consumption, the FMCG sector is more alluring. Low capital investment is typically the outcome of the vast consumer base and straightforward manufacturing methods for the majority of items. Due to the existence of foreign corporations, domestic corporations, and unorganized, unorganized competitors who offer non-branded, unpackaged products and account for a sizeable portion of the market, the business is extremely competitive.

2. FAST CONSUMER GOODS PRODUCTS

Consumer packaged goods is another name for FMCG products. All consumables fall under the following product categories (except groceries and pulses). FMCG products include food, beverages, personal care items like shampoo, conditioner, and toothpaste as well as items for the house and body like tea and coffee. Fast Moving Consumer Goods are affordable items that are easy to purchase. These bundled non-durable goods are available for purchase. The final consumer regularly and in modest amounts purchases these products. The fourth-largest economic sector is the FMCG sector. 50% of industry sales are made up of household and personal care products, followed by healthcare (31-32%) and food and beverage (18-19%). The FMCG industry is critical to the success of the retail and distribution sectors, generating consistent demand for a variety of products. Because of the huge volume and quick turnover of FMCG items, retailers and distributors are encouraged to spend in infrastructure, technology, and staff development, which contribute to economic growth. FMCG products are usually grouped into three major categories:

- **Food and Beverages-** this category includes packaged foods, snacks, dairy products, carbonated and non-carbonated beverages and alcoholic beverages.
- **Personal Care & Cosmetics**- This category includes cosmetics, soaps, shampoos, skin care goods and dental care items.
- **Household and cleaning products**- This category includes cleaning supplies, laundry detergent, insecticides and other necessities.

3. SHOPPING MALLS

In the recent decade, India's retail sector has seen enormous transformation and quick expansion. A shopping mall is a large building or set of buildings that house a variety of businesses and other commercial organizations that sell various products/brands entirely through retailing. If it is a collection of shops, walkways connect them so that customers can simply walk between them and make purchases. However, in India, the primary goal of most major shopping malls is to serve as a "one-stop shop," offering nearly all essential products and brands under one roof, from groceries and lifestyle items to durable goods such as furniture. Customers will be pleased if they can readily find what they are looking for in a single location. Many Fast Moving Consumer Goods products are available in a shopping mall to purchase.

4. REVIEW OF LITERATURE

Vadivel C., Satheeshkumar P. According to the survey, the quality of rapid consumer goods purchase behaviour of customers on the selected brands was extremely important to consumers. The study determined the extent of influence of several factors on respondents' purchases of FMCG products. FMCG branding had become a vital aspect of consumers' lives. This was accomplished by recognizing the key variables of branding, quality, and the four Ps. While decreasing risk, consumers choose brands that they are familiar with, have heard of, or have seen advertised.

Raghunath, U. (2018). The purpose of this research was to shed light on the competitive conditions that exist in the FMCG retail trade industry. The study also examined competition within the sector and drew implications for competition policy. The FMCG industry is distinguished by a well-established distribution network, low levels of penetration, cheap operational costs, low per capita consumption, and fierce competition between the organised and unorganised sectors. Over 3 million people are employed in downstream activities in India's FMCG sector. Every business association communicates with its clients through its products or services. Various operations are carried out in order to offer the merchandise to customers. This is known as performance, and it is a crucial skill. The study focused on consumer perceptions, purchasing behaviour, and satisfaction in the Indian market. We addressed the fast-growing consumer goods retail market, growth prospects, a market overview of the FMCG marketing concept in India, and other topics in this paper.

RAJALAKSHMI, M. V., & DEVI, K. The study concentrated on the consumer demographics and behaviour of the official cream category of fast moving consumer items in Tamil Nadu's Kancheepuram district. The survey looked at the demographics of facial cream users and discovered that the majority of them were 36-45 years old, male, married, had a graduate-level academic qualification, were self-employed, and earned Rs 10,000 to 15,000 per month. It was also discovered that most people become aware of facial cream manufacturers through ads. Price was the most important factor influencing the purchase and use of a brand of face cream, followed by quality. Ponds, Fair & Lovely, and Fairever were discovered to be the top three brands of face cream utilized.

5. OBJECTIVES OF THE STUDY

- Analyze the demographic profile of FMCG product customers.
- Study the factors influencing the purchase of FMCG products.

6. RESEARCH METHODOLOGY

Data Collection- Both primary and secondary data is used. It mainly depends on primary data collected through a structured interview schedule. Secondary data is collected from journals, books, publications, articles, research papers and websites.

Research Design- Before examining the types of research design, it is important to understand the role and purpose of research design and also to know what type of research design is prepared. The research design was descriptive and included a survey of FMCG product customers.

Sampling Method / Sample Size-Convenience sampling technique was used for the survey. Questionnaire filled by the selected respondents. The sample size included sufficient in number in Uttar Pradesh. The sample size selected is 50 who purchase FMCG products from shopping malls in Uttar Pradesh.

Statistical Tools and Data Analysis-Data have been analyzed and tested with the help of tables, charts and percentage analysis.

7. ANALYSIS AND DATA INTERPRETATION

The demographic profile analysis was carried out. The results the analyses are given below:

Table 1: Demographic Variables of Fast-Moving Consumer Goods Consumers.

S. No.	Demographic Variables	Classification Variables	No. of Respondents	Percentage
1.	Age	20-25	3	6
		25-30	19	38
		31-40	21	42
		40 above	7	14
		Total	50	100
2.	Gender	Male	31	62
		Female	19	38
		Total	50	100
3.	Marital Status	Married	40	80
		Unmarried	10	20
		Total	50	100
4.	Education Qualification	School Level	3	6
		Degree/ Diploma	22	44
		PG	10	20
		Professional	15	30
		Total	50	100
5.	Occupational Status	Student	3	6
		Employed	27	54
		Business	11	22
		Housewife	9	18
		Total	50	100
6.	Monthly Income	Up to 5000	0	0
		5000/10000	8	16
		10000/20000	13	26
		Above20000	29	58
		Total	50	100

Source–Primary Data

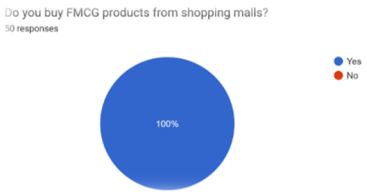
Data Interpretation

Analysis of the demographic profile of 50% of the respondents from the above table shows that in terms of age, 6% in the age group of 18-25 years, 38% in the age group of 25-30 years, 38% in the age group of 30-35 years of the 42 percent respondents, 14 percent are in the age group above 30 years. In terms of gender, 62% are male and 38% are female. In terms of marital status, 80% are married and 20% are unmarried. In terms of educational qualification, 6% are school level, 44% are degree and diploma level, 20% are postgraduate, 30% are professional. In terms of occupational status, 6% are students, 54% are employed, 22% are businessmen and 18 percent are housewives. In terms of monthly family income, 0 percent of respondents have an income of ₹5,000, 16% have a family income of between ₹5000/10,000, 26% have a family income of between ₹10,000/20,000 and 58% have a family income of more than ₹20,000Therefore, we can see that we have a variety of respondents from different demographic profiles.

Table 2: Do you buy FMCG products from shopping malls?

Sr. No.		No. of respondents	Percentage of respondents
	Yes	50	100
	No	0	0
	Total	50	100

Source–Primary Data



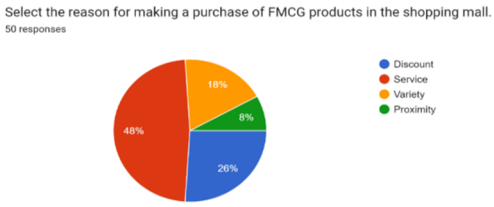
Data Interpretation

According to the above chart and graph, 100% of respondents buy FMCG products from shopping malls.

Table 3: Select the reason for making a purchase of FMCG products in the shopping mall.

Sr. No.		No. of respondents	Percentage of respondents
	Discount	13	26
	Service	24	48
	Variety	9	18
	Proximity	4	8
	Total	50	100

Source–Primary Data



Data Interpretation

According to the above chart and graph, 26% of respondents buy FMCG products in shopping malls because of discounts. 48% of respondents buy FMCG products in shopping malls because of service, 18% of respondents buy FMCG products in shopping malls because of variety and 8% of respondents buy FMCG products in shopping malls because of proximity.

Table 4: How often discounts & incentives are provided by the shopping mall to purchase FMCG products?

Sr. No.		No. of respondents	Percentage of respondents
	Always	17	34
	Sometimes	32	64
	Never	1	2
	Total	50	100

Source–Primary Data

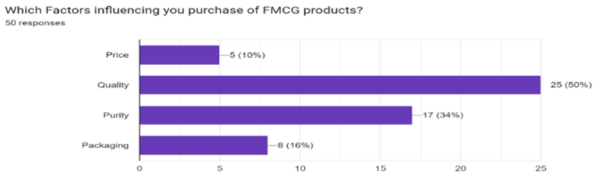
Data Interpretation

According to the above chart and graph, 34% of respondents always receive discounts and incentives from shopping malls to purchase FMCG products 64% of respondents sometimes receive discounts and incentives from shopping malls to purchase FMCG products and 2% of respondents never receive discounts and incentives from shopping malls to purchase FMCG products.

Table 5: Which factors influencing you purchase of FMCG products?

Sr. No.		No. of respondents	Percentage of respondents
	Price	5	15
	Quality	25	50
	Purity	17	34
	Packaging	8	16
	Total	50	100

Source–Primary Data



Data Interpretation

According to the above chart and graph, 10% of respondents are influenced by price, 50% of respondents are influenced by quality, 34% of respondents are influenced by purity and 16% of respondents are influenced by packaging to buy FMCG products.

Table 6: After all, are you satisfied to purchase FMCG products from the Shopping Mall?

Sr. No.		No. of respondents	Percentage of respondents
	Yes	50	100
	No	0	0
	Total	50	100

Source–Primary Data

Data Interpretation

According to the above chart and graph, 100% of the respondents are satisfied to purchase FMCG product from shopping mall.

8. LIMITATION

This study was conducted in Uttar Pradesh and the limitations of this study were:

- This study was conducted in 5 malls of Uttar Pradesh and a sample of consumers was taken from these malls.
- The sample was taken from 50 consumers who buy FMCG products from the mall.
- The results of the sample will be considered to reach a conclusion

9. FINDINGS

Most of the respondents as per their age group are 31-40 years old. Most of the respondents are male. Most of the respondents are married. Most of the respondents have a degree/diploma level for their education qualification. Most of the respondents are employed.

The family income of most of the respondents is more than Rs 20000. Most of the respondents buy FMCG products from shopping malls. It was also found most of the respondents buy FMCG products monthly from shopping malls. It was also found most of the respondents buy FMCG products in shopping malls because of service. It reveals that most of the respondents sometimes receive discounts and incentives from shopping malls to purchase FMCG products. Most of the respondents are influenced by the quality to buy FMCG products. It was also found most of the respondents are satisfied with purchasing FMCG products from shopping malls.

10. CONCLUSION

The analysis discovered that the FMCG product sector still has room to grow. New FMCG product lines and introducing new age segments to the marketing mix are two areas of growth. To increase their market share, FMCG companies might use sampling and product marketing techniques. More research on customer behaviour may uncover more useful and intriguing elements of consumers. The majority of FMCG products are purchased in shopping malls. Consumers are primarily influenced by quality and purity when purchasing FMCG products. Consumers are generally pleased with their purchases of FMCG products from shopping malls. This paper identified the importance people place on purchasing FMCG from shopping malls. It is found that product education, packaging, location, service, and product quality are the most significant elements for customers based on each factor. Marketers should study the aspects and characteristics that influence client purchases in order to capture market share.

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SUSTAINABLE MEASURES IN MANUFACTURING INDUSTRIES RECIPROCATING TOWARDS GREENER PRACTICES

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ABSTRACT

Manufacturing industries play a crucial role in the global economy, but they also have a significant environmental impact. Implementing sustainable measures in manufacturing is essential for mitigating this impact and moving towards greener practices. Sustainability in the manufacturing sector is a critical imperative for a more environmentally responsible and socially conscious global economy. It involves the adoption of practices and technologies that minimize negative environmental, social, and economic impacts, while promoting long-term viability. This entails resource efficiency and conservation measures, such as lean manufacturing principles and responsible resource use, to optimize operational efficiency. Additionally, the integration of renewable energy sources and the enhancement of energy efficiency play pivotal roles in reducing the sector's reliance on fossil fuels. Waste reduction and recycling initiatives, along with water conservation strategies like closed-loop systems and rainwater harvesting, are instrumental in conserving vital resources. Emissions reduction efforts, including pollution control equipment and cleaner production processes, help curb air and water pollutant emissions. Sustainable supply chain management and responsible sourcing practices ensure that raw materials are obtained ethically and sustainably. Moreover, product life cycle management, occupational health and safety measures, and compliance with environmental regulations further solidify a commitment to sustainability. Through stakeholder engagement, transparency, and corporate social responsibility initiatives, manufacturing companies can contribute positively to their communities and the broader environment, fostering a more resilient and prosperous future. By integrating the sustainability practices into their operations, manufacturing companies can contribute to a more environmentally responsible and socially conscious global economy, while also enhancing their competitiveness and resilience in the long run. By adopting the sustainable measures, manufacturing industries can significantly reduce their environmental impact while also benefiting from improved operational efficiency and cost savings. Additionally, sustainable practices can enhance brand reputation and competitiveness in an increasingly eco-conscious market. The objective of this paper is to identify the sustainable measures that the manufacturing industries take to ensure that greener practices are maintained thereby adhering to green human resource management practices.

Keywords: Manufacturing, Conservation, Sustainability, Environment

1. INTRODUCTION

Green Human Resource Management (GHRM) is a forward-thinking approach to human resource practices that places environmental sustainability at its core. It recognizes that in an era of increasing environmental challenges, organizations have a responsibility to manage their human resources in a manner that aligns with ecological sustainability. GHRM goes beyond traditional HR functions and incorporates strategies to engage employees in environmentally friendly practices, foster a culture of sustainability, and ensure that HR policies and procedures are in harmony with environmental objectives. This innovative approach seeks to leverage the potential of the workforce as a driving force for sustainable practices within an organization, thereby contributing to a more environmentally conscious and socially responsible business environment. By integrating principles of sustainability into HR practices, GHRM aims to create workplaces that not only thrive economically but also contribute positively to the well-being of the planet and its ecosystems.

2. SUSTAINABLE MEASURES THAT CAN BE TAKEN

Manufacturing industries play a crucial role in the global economy, but they also have a significant environmental impact. Implementing sustainable measures in manufacturing is essential for mitigating this impact and moving towards greener practices. Here are several key sustainable measures that manufacturing industries can adopt:

2.1 RESOURCE EFFICIENCY AND CIRCULAR ECONOMY

- **Material Efficiency:** Minimize waste by optimizing material usage, reducing overproduction, and implementing lean manufacturing principles.
- **Recycling and Reuse:** Incorporate recycling and reusing materials wherever possible to reduce the demand for new resources.
- **Product Life Extension:** Design products for durability, repairability, and upgradability to extend their lifespan.

2.2 ENERGY EFFICIENCY

- **Energy Audits:** Conduct regular energy audits to identify areas for improvement and implement energy-saving technologies and practices.
- **Renewable Energy Sources:** Invest in renewable energy sources such as solar, wind, or geothermal to power operations.
- **Energy Recovery:** Capture and reuse waste heat

generated during production processes.

2.3 WATER CONSERVATION

- **Water Recycling and Reclamation:** Implement systems to treat and reuse water within the manufacturing process, reducing reliance on fresh water sources.
- **Rainwater Harvesting:** Collect and use rainwater for non-critical processes like cooling or cleaning.

2.4 EMISSIONS REDUCTION

- **Air Pollution Controls:** Install and maintain equipment for capturing and treating emissions, such as scrubbers and filters.
- **Greenhouse Gas (GHG) Reduction:** Set targets for reducing greenhouse gas emissions and implement strategies like switching to cleaner fuels or electrification.

2.5 SUPPLY CHAIN SUSTAINABILITY

- **Supplier Engagement:** Collaborate with suppliers to ensure they also adopt sustainable practices and adhere to ethical sourcing standards.
- **Local Sourcing:** Prioritize local sourcing to reduce transportation emissions and support regional economies.

2.6 LEAN MANUFACTURING AND PROCESS OPTIMIZATION

- **Continuous Improvement**: Implement lean manufacturing principles to eliminate waste, reduce inventory levels, and streamline processes.
- **Automation and Robotics:** Utilize advanced technologies to improve efficiency and reduce resource consumption.

2.7 WASTE MANAGEMENT

- **Waste Minimization:** Implement practices to reduce, reuse, and recycle waste materials generated during production.
- **Hazardous Waste Handling:** Ensure proper handling and disposal of hazardous materials in compliance with regulatory standards.

2.8 PRODUCT DESIGN FOR SUSTAINABILITY

- **Life Cycle Assessment (LCA):** Conduct LCAs to evaluate the environmental impact of products from raw material extraction to end-of-life disposal.
- **Design for Environment (DfE):** Integrate environmental considerations into product design, focusing on materials, manufacturing, and recyclability.

2.9 REGULATORY COMPLIANCE AND CERTIFICATION

- **ISO Standards:** Adhere to international environmental standards like ISO 14001 for environmental management systems.
- **Certifications:** Seek certifications such as LEED (Leadership in Energy and Environmental Design) or Cradle to Cradle to demonstrate commitment to sustainability.

2.10 EMPLOYEE ENGAGEMENT AND TRAINING:

- Sustainability Education: Provide training and education programs for employees to raise awareness and promote sustainable practices in the workplace.

By adopting these sustainable measures, manufacturing industries can significantly reduce their environmental impact while also benefiting from improved operational efficiency and cost savings. Additionally, these practices can enhance brand reputation and competitiveness in an increasingly eco-conscious market.

3. GREEN HR PRACTICES

3.1 GREEN RECRUITEMENT

Green recruitment is an innovative approach to talent acquisition that places a strong emphasis on environmental awareness and sustainability values. This practice involves sourcing, assessing, and hiring candidates who demonstrate a commitment to environmentally responsible practices. Green recruitment strategies extend beyond traditional qualifications, seeking individuals who exhibit a genuine interest in and understanding of sustainable principles. Recruiters may look for candidates with backgrounds in fields like renewable energy, conservation, or environmental management. Additionally, they assess candidates for their willingness and ability to contribute to the organization's green initiatives. By incorporating green recruitment into their hiring process, organizations not only align their workforce with sustainability goals, but also foster a culture of environmental stewardship from the outset, reinforcing their commitment to responsible business practices.

3.2 GREEN SELECTION

Green selection is an integral component of environmentally conscious human resource management. It involves the careful evaluation and selection of candidates based on their alignment with an organization's sustainability goals and values. This process goes beyond traditional hiring criteria, considering an applicant's awareness, knowledge, and dedication to environmental issues. Recruiters employing green selection methods look for candidates with backgrounds or qualifications related to sustainability, such as degrees in environmental studies or experience in green initiatives. Moreover, they assess candidates for their potential to contribute to the organization's environmental objectives, seeking individuals who demonstrate creativity and innovation in

approaching eco-friendly solutions. By incorporating green selection practices, organizations not only fortify their commitment to sustainable practices, but also build a workforce that actively supports and advances their environmental initiatives. This approach ensures that employees are not only capable contributors to the organization's success, but also stewards of the planet.

3.3 GREEN TRAINING AND DEVELOPMENT

Green training and development is a vital component of fostering a culture of sustainability within an organization. It entails providing employees with the knowledge, skills, and tools necessary to adopt and promote environmentally responsible practices in their roles. This specialized training focuses on a range of topics, including energy conservation, waste reduction, sustainable sourcing, and eco-friendly manufacturing processes. It also encompasses areas like renewable energy technologies, environmental regulations, and the principles of a circular economy. Through green training initiatives, employees become equipped to identify opportunities for sustainable improvements in their respective departments. Furthermore, organizations can encourage innovation and creativity in finding eco-friendly solutions to challenges.

3.4 GREEN APPRAISAL

Green appraisal is a forward-thinking performance management approach that evaluates employees based on their contributions to sustainability and environmental responsibility. This method extends traditional performance metrics to encompass eco-friendly practices and initiatives within the workplace. Employees are assessed not only on their job-specific responsibilities, but also on their efforts towards minimizing environmental impact, conserving resources, and promoting sustainable practices. Key indicators may include participation in green initiatives, innovative contributions to sustainability projects, and adherence to eco-friendly policies. This approach encourages employees to actively engage in environmentally conscious behaviors and integrate sustainability into their daily work routines. By incorporating green appraisal into performance evaluations, organizations reinforce their commitment to responsible business practices and recognize and reward employees who play a significant role in advancing environmental stewardship within the company. This not only bolsters the organization's sustainability efforts but also fosters a culture of environmental responsibility among its workforce.

4. EXAMPLES OF GREEN HUMAN RESOURCE MANAGEMENT

4.1 GREEN RECRUITMENT AND SELECTION

- Actively seeking candidates with backgrounds or qualifications in environmental sciences or sustainability for relevant positions.
- Including questions about sustainability values and knowledge in interviews and assessments.

4.2 ECO-FRIENDLY ONBOARDING

- Providing new employees with information on the organization's sustainability policies and practices during the onboarding process.
- Emphasizing the importance of eco-conscious behaviors in the workplace.

4.3 GREEN TRAINING AND DEVELOPMENT

- Offering training programs focused on environmental conservation, energy efficiency, waste reduction, and sustainable practices.
- Supporting employees in obtaining certifications related to sustainability, such as LEED accreditation.

4.4 SUSTAINABLE EMPLOYEE ENGAGEMENT

- Encouraging employees to participate in green initiatives and volunteer for environmental projects.
- Recognizing and celebrating contributions to sustainability efforts through awards or recognition programs.

4.5 ENERGY AND RESOURCE CONSERVATION PROGRAMS

- Implementing policies and practices that promote energy efficiency, such as using natural lighting and energy-efficient appliances.
- Encouraging employees to turn off lights and equipment when not in use.

4.6 WASTE REDUCTION AND RECYCLING

- Establishing recycling programs for materials like paper, plastics, and electronics within the workplace.
- Encouraging employees to use reusable containers and utensils in break rooms.

4.7 SUSTAINABLE COMMUTING AND TRANSPORTATION

- Encouraging carpooling, public transportation use, cycling, or telecommuting to reduce carbon emissions from commuting.
- Providing incentives for employees who choose eco-friendly commuting options.

4.8 GREEN PURCHASING AND PROCUREMENT:

- Procuring eco-friendly and sustainable products and services, such as recycled office supplies or energy-efficient appliances.
- Partnering with environmentally conscious suppliers who adhere to responsible sourcing practices.

4.9 ENVIRONMENTAL REPORTING AND COMPLIANCE

- Regularly monitoring and reporting on key

environmental metrics, demonstrating the organization's commitment to transparency.
- Ensuring compliance with relevant environmental regulations and standards.

4.10 EMPLOYEE EMPOWERMENT AND INVOLVEMENT
- Encouraging employees to suggest and implement green initiatives or process improvements.
- Providing opportunities for employees to participate in sustainability-related projects or committees.

4.11 GREEN WORKSPACE DESIGN AND MAINTENANCE
- Designing workspaces with eco-friendly features like energy-efficient lighting, natural ventilation, and indoor plants.
- Maintaining equipment to ensure optimal performance and energy efficiency.

4.12 BIODIVERSITY AND CONSERVATION EFFORTS
- Creating green spaces or gardens on the premises to support local ecosystems and wildlife.
- Participating in community conservation projects or contributing to reforestation efforts.

5. CHALLENGES FACED BY GHRM PRACTICES
There are several challenges faced by organizations implementing Green Human Resource Management (GHRM) practices:
- Limited Awareness and Understanding: Many organizations may not fully grasp the concept and benefits of GHRM, leading to a lack of commitment and investment in sustainable HR practices.
- Resistance to Change: Implementing GHRM often requires a cultural shift within an organization. Employees and stakeholders may resist changes to established processes and practices.
- Lack of Standardization: There is a need for standardized frameworks and metrics to evaluate and compare the effectiveness of GHRM initiatives across different organizations and industries.
- Skills Gap: HR professionals may lack the necessary knowledge and skills to effectively implement GHRM practices. Training and development programs are essential to bridge this gap.
- Measuring Impact and ROI: It can be difficult to quantify the direct impact of GHRM on the organization's bottom line, making it challenging to demonstrate the return on investment (ROI) to stakeholders.
- Supply Chain Sustainability: Managing and influencing the sustainability practices of suppliers and partners in the supply chain can be complex and requires dedicated efforts.
- Regulatory Compliance and Reporting Burden: Adhering to ever-evolving environmental regulations and reporting requirements can be resource-intensive for organizations.
- Employee Engagement and Education: Fostering a culture of sustainability and ensuring that employees understand and actively engage in GHRM initiatives can be a persistent challenge.
- Balancing Economic and Environmental Goals: Striking the right balance between economic viability and environmental sustainability can be tricky, especially for industries with resource-intensive operations.
- Measuring Social Impact: Beyond environmental concerns, GHRM also encompasses social aspects. Ensuring fair labor practices and community engagement adds complexity to the implementation.
- Long-term Commitment and Consistency: GHRM is most effective when it becomes ingrained in the organization's culture and practices over the long term. Maintaining this commitment and consistency can be a challenge.
- Integration with Overall Business Strategy: Ensuring that GHRM practices align with the broader organizational strategy and goals can be challenging, especially if sustainability is not a core value for the company.

6. SCOPE OF GREEN PRACTICES IN THE ORGANIZATION
The scope of greener practices in a country encompasses a broad spectrum of initiatives and sectors vital for environmental sustainability. In energy, transitioning to renewable sources such as solar, wind, and hydropower offers a significant opportunity to reduce reliance on fossil fuels. Additionally, improving energy efficiency in industries, buildings, and transportation systems is crucial for curbing emissions. Waste management is another critical area, involving comprehensive recycling programs and waste reduction efforts to divert materials from landfills. Water conservation and management play a pivotal role, with practices like rainwater harvesting and responsible water usage in agriculture, industry, and households. Sustainable agriculture practices, afforestation, and urban greening initiatives contribute to more sustainable land use and mitigate habitat degradation. Urban planning and green infrastructure development, including parks, green roofs, and sustainable transportation systems, are essential for creating livable, ecologically sensitive cities. Education and awareness campaigns foster a culture of environmental responsibility, equipping communities with the knowledge and motivation to adopt greener lifestyles. Robust policies and regulations, along with incentives for green innovation, guide businesses and individuals towards sustainable practices. Corporate sustainability initiatives and responsible business practices are increasingly recognized as central to a greener

economy. Finally, community engagement empowers local populations to actively participate in environmental decision-making processes, ensuring that greener practices are inclusive and resonate with the broader populace. The scope for greener practices in any country is dynamic and multifaceted, offering a wealth of opportunities for positive environmental change.

7. LIMITATION OF GREEN HRM PRACTICES

Green Human Resource Management (GHRM) practices, while crucial for promoting sustainability within organizations, do come with their own set of limitations. One significant limitation is the potential conflict between environmental objectives and economic considerations. Implementing GHRM practices may entail upfront costs for technologies, training, and infrastructure improvements, which some organizations, especially smaller ones, may find financially challenging. Additionally, the long-term return on investment from these practices may not always be immediately apparent or quantifiable, which can be a deterrent for organizations focused on short-term profitability. Another limitation is the need for specialized knowledge and expertise in green technologies and sustainable practices. HR professionals may require additional training and resources to effectively implement and manage GHRM initiatives. Moreover, achieving full employee buy-in and engagement in GHRM practices can be a challenge. Some employees may not fully understand or embrace the value of sustainability, potentially leading to resistance or apathy towards green initiatives. Additionally, the effectiveness of GHRM practices may vary across industries and organizational contexts, with certain sectors facing greater challenges in implementing environmentally-friendly measures. Finally, the lack of standardized metrics and benchmarks for evaluating the impact of GHRM practices can make it difficult for organizations to measure their progress and compare their performance to industry standards. Overcoming these limitations requires a concerted effort from organizations, including investing in education and training, setting realistic expectations for ROI, and fostering a culture of sustainability from top management down to all employees.

8. CONCLUSION

In conclusion, Green Human Resource Management (GHRM) practices represent a pivotal approach in addressing contemporary environmental challenges within organizations. By integrating sustainability into HR functions, businesses not only contribute to a more environmentally responsible global landscape but also reap tangible benefits in terms of operational efficiency, cost savings, and enhanced corporate reputation. The implementation of GHRM practices involves a strategic shift towards environmentally-conscious recruitment, training, and performance evaluation. However, it is imperative to acknowledge that the successful adoption of GHRM is not without its challenges. Balancing economic considerations with environmental goals, ensuring employee engagement, and overcoming the initial investment costs are key hurdles to navigate. Nevertheless, the potential for long-term gains in terms of reduced resource consumption, minimized environmental impact, and improved corporate social responsibility is substantial. As businesses continue to recognize the critical importance of sustainability, the adoption of GHRM practices is poised to play an increasingly central role in shaping the future of organizational management, fostering a culture of responsible business practices, and contributing to a greener, more sustainable world.

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ARTIFICIAL INTELLIGENCE IN FINANCIAL PLANNING

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ABSTRACT

Artifical Intelligence is the science of making machine that can think like humans. It can do things that are considered "smart" AI technology can process large amounts of data in ways, unlike humans. The goal for AI is to be able to do things such as recognize patterns, make decisions, and judge like humans.

Artifical Intelligence is particularly helpful in corporate finance as it can better predict and assess loan risks. For companies looking to increase their value, AI technologies such as machine learning can help improve loan underwriting and reduce financial risk.

Keywords: Artificial Intelligence in Financial Planning, Personalized Banking.

1. INTRODUCTION

By analyzing historical data and current market conditions.AI can provide insight into potential risks. AI aids in proactive risk management, safeguarding assets and investment.AI can automate many of the time-consuming tasks that financial advisers typically perform, Such as research, data analysis and report generation. AI based financial advisors can monitor financial market and execute trades based on predefined criteria and investment strategies.It could increase efficiency and reduce costs for banks while providing faster and more accurate customer support and all of this would be available 24/7, making it easy for customers to get help by answering questions, resolving issues and providing financial education outside of regular business hours.The FA market is a hotspot for AI-led technological innovation. Companies can accordingly deploy AI solutions to explore the various driven for their business, create accurate forecasts, enhance real- time decision making and improve ROI.

- To examine, with a brief overview, the uses of artificial intelligence in the banking sector.
- To research the drawbacks and advantages of artificial intelligence in the finance industry.
- To examine and provide recommendations for the Future Prospectus of AI in India.

2. METHODOLOGY

The study's foundation is descriptive secondary data. The information gathered from numerous publications, studies, and articles.

3. LITERATUE REVIEW

The research fulfilled part of the goal, based on the following research on the impact of artificial intelligence in finance, described how to find financial applications that change the behavior of financial decisions in uncertain situations. First, the use of the old financial model in the technological reform is analyzed. In the financial market, intelligent systems are used for portfolio investment management decisions, credit rating decisions, financial planning and forecasting. The final result of this study stated that artificial intelligence in finance is more accurate when using traditional financial applications. The main goal is to get financial decisions coming from machines and machines make flawless financial decisions without fraud. Nowadays, the consumer uses smartphones and tabs to access fintech.

4. MAIN FOCUS OF THE RESEARCH PAPER

- **Regulatory compliance–** Fraud Detection and Prevention: With the growth of e-commerce or e-commerce, the opportunities for fraud also increase exponentially. Artificial intelligence is based on a fraud prevention system that detects fraudulent activities, reports and prevents such events. Banks and financial institutions have fraud detection software that can use predictive analytics to identify patterns without the knowledge of human analysts and use machine learning algorithms to detect fraudulent transactions and minimize fake invoices.
- **Increasing security:** In artificial intelligence, machine learning algorithms need a fraction of a minute to access fraudulent transactions in real time, rather than detecting them after the crime. Many in the organization are trying to apply artificial intelligence to improve the security of online transactions and related services.
- **Personalized Banking:** In banking, artificial intelligence plays an important role in all online transactions such as payments, deposits, where customers do not need to rush to banks. You can handle even most customer complaints and provide an effective self-help interface to customers. Virtual assistants based on artificial intelligence such as Alexa, Google Assistant, Echo, etc. are already gaining popularity in the consumer market. It provides real guidance to the potential customer so that they get the right information and quick solutions to their problems.
- **Process Automation:** Process automation is an important part of increasing productivity and minimizing operating costs by getting work done in minutes. Artificial intelligence reduces repetitive

human tasks by more than 50% and minimizes costs. Process automation effectively interprets documentation, identifies problems with its services that need human attention, such as call center automation, chat (robots speak and guide), paper automation, etc.

- Artificial intelligence is a science and technology based on disciplines such as computer science, biology, psychology, linguistics, mathematics and engineering. The main focus of artificial intelligence is the development of computer functions related to human intelligence, such as reasoning, learning and problem solving. One or more of the following areas can contribute to the creation of an intelligent system.

In this age, it is exciting to learn about financial services through technology using the traditional approach. Artificial intelligence has several economic roles in today's markets. Therefore, every person must be aware of financial information related to technological innovation. Today: Every pupil, student and financial analyst needs to learn and be aware of financial knowledge based on fintech. Financial knowledge is important in every corner of people. It will be useful to expand financial literacy, which means providing financial knowledge to every person to realize the various objectives of all financial transactions and to use financial resources effectively and efficiently. It explores the role of artificial intelligence, which should make decisions in the financial field. So, let's start the journey of artificial intelligence in finance. There are some following aspects that involve knowledge of artificial intelligence in finance:

- 24/7 access to learning
- Innovative and neural network services
- Taking flawless decision
- Fraud detections
- Increasing efficiency
- Contribution in financial task automation
- Learning smart content

Artificial intelligence creates a platform for optimal decision making by machines. The machine makes us learn, think and realize the set goals. Today, the most central problem in finance is financial decision. Also the common goal of the common citizen is not sufficiently realized. Artificial intelligences that make decisions for financial institutions, such as banking companies, solve their financial crises with intelligent machines; they also make some credit decisions. Banking systems meet customer requirements with full confidence, comfort and security, and at the same time invest money with the help of machines or artificial intelligence. Technology covers and directs money. Artificial intelligence connects financial services and makes customers smarter through the use of machines. Artificial intelligence enables smarter services, such as hedge funds, and financial services become easier to use. Artificial intelligence plays an important role in financial markets. It uses short-term securities to provide a safe means of investment. It is a platform to make financial operations technical and intelligent. Artificial intelligence involves detecting financial fraud. Financial institutions have adopted artificial intelligence in finance to work smarter, make work more efficient through technology and also embrace its structural framework. Artificial intelligence in the banking sector uses the possibilities of a smooth and efficient operation to improve the satisfaction of the customer, as well as the working hours around the clock. Banking institutions provide financial services by accessing customers at any convenient time with the help of artificial intelligence. Artificial intelligence is a platform to perform financial operations very easily and smoothly. Artificial intelligence uses certain algorithms for financial institutions to implement financial services to access customers anywhere in the country or the world. Artificial intelligence is a defensive measure to contain economic crises. Finance made important decisions to create wealth and maximize profits. These decisions help to use financial resources in the right direction. Financial AI is evaluated based on the following components. Machines make smarter decisions and help the banking industry solve problems. Artificial intelligence is playing a very important role in finance, giving us life-changing benefits. AI also applies machines to some very important tasks like wealth management, risk management, insurance contract, relationship manager argumentation task and insurances.

5. FUNCTIONS OF AI IN FINANCE

Artificial intelligence performs various financial functions such as financial decision processing, credit scoring, financial planning and forecasting through financial modeling. Artificial intelligence plays an important role in the financial sector and also deals with economic activities such as automatic execution of tasks, detection of financial mistakes and errors, etc. AI has performed five key economic transformation functions in the financial sector, such as:

- assessment
- risk Fraud Management and Detection
- Start business and help in business
- financial advisory services
- Management of financial activities carried out on the financial market. Artificial intelligence helps trade, invest and manage an organization's wealth through natural language processing. Natural Language Processing is software used to provide credit scores, insurance information and stock movement decisions for business and investment purposes.

Artificial intelligence helps manage sales, prices, costs, dates, route and forecast transactions. In short, financial services and financial sectors are ready to adopt artificial intelligence in their work. The application of artificial intelligence in the financial sector is growing rapidly and helps to perform the following financial services very smoothly: automation of tasks, personal financial planning, credit management and detection of errors and detectable frauds, financial management of a bank, cryptocurrency, financial consulting, intelligent. contracts, mobile payments, crowdfunding, algorithmic trading services as well as creating a financial ecosystem with the help of a

machine launch mission, etc. This template building block represents the past and future evolution of financial services.

6. FUTURE OF AI IN INDIA WITH SOME RECOMMENDATION AND SOLUTION

Today, the world is moving towards artificial intelligence technology. Google, Amazon, Flipkart, some of the tech giants have used artificial intelligence to create predictive models of consumer behaviour. In the field of education, most universities have offered various courses on artificial intelligence. Companies, companies, investors make huge investments based on AI data, which saves them money and avoids human errors. These BFSI (Banking, Financial Services and Insurance) sectors are very widely adopting AI-based fintech solutions. We cannot deny how quickly the financial sector has adopted AL that soon this progressive step will replace the human resource and give users a quick and efficient solution and this is the future of the financial sector.

7. LIMITATION

Our research solely focuses on artificial intelligence in the finance sector; there are numerous other uses for AI, including in the fields of automotive, healthcare, gaming, robotics, surveillance, entertainment, space exploration, agriculture, e-commerce, and social media, all of which could need additional research.

8. CHALLENGES OF ARTIFICIAL INTELLIGENCE

- **Difficult to understand –** Machine learning language is not easy to understand. This brings some risk and increases the level of management. To reduce this complexity, banks need to explain the underlying models and facts to their users so that they can avoid bad business decisions.
- **Responsibility –** Another big challenge in AI is when something goes wrong, who is responsible and accountable. Not knowing why the algorithm gave a positive or negative answer to a particular question can confuse the banker's mind. Therefore, it is necessary to have the machine's decisions and critical functions (such as releasing/blocking payments or confirming transactions) approved by the supervisor, which partially defeats the purpose of using the machine.
- **Reliability of AI –** For security reasons, the reliability of AI depends on its data and the degree of system control.

9. CONCLUSION

The adoption of artificial intelligence (AI) and machine learning (ML) systems in the financial sector continues to accelerate. This development is driven by rapid growth in computing power, data storage capacity and big data, as well as significant advances in use case modelling and customization. The COVID-19 pandemic is accelerating the move to a contactless environment and increasingly digital financial services, increasing the attractiveness of AI/ML systems among financial service providers. The use of AI/ML brings significant benefits, but also important fiscal policy challenges. AI/ML systems offer financial institutions opportunities for significant savings and efficiency gains, new markets and better risk management. bring customers new experiences, products and reduce costs; and provide effective means to enforce regulations and monitor job stability. However, these systems also raise ethical questions and new unique risks to the integrity and security of the financial system, the extent of which has yet to be assessed. The task of financial decision makers is made even more difficult by the fact that these innovations evolve and change as new technologies are introduced. Finally, the evolving nature of AI/ML technology and its financial applications means that the strengths and weaknesses of the technology are not currently fully understood by users, technology manufacturers and developers or regulators. Therefore, there may be many unexpected traps that have not yet materialized, and countries need to strengthen their oversight and prudential monitoring.

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AN EMPIRICAL REVIEW ON TECHNOLOGY, SERVER-LESS COMPUTING TOOLS AND VULNERABILITY FOR SERVER-LESS COMPUTING: CURRENT AND FUTURE TREND

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ABSTRACT

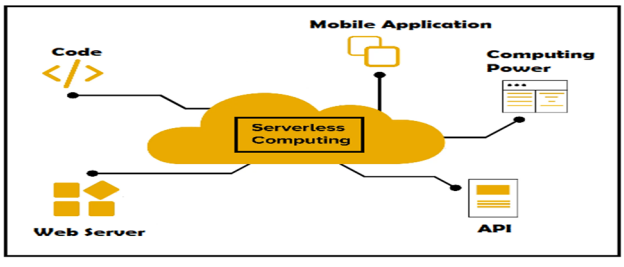
Today, Server-less computing is the very popular and fast growing technology in cloud world for the deployment of software, applications and IT enabled services. The adoption of server-less computing has grown substantially and it came out as a better way to manage server, operating cost, reliability, availability and scalability of the cloud server-less architecture. These models represent the development of cloud programming models, abstractions and inherits features and provide a better platform for testament to the maturity level and wide range of adoption of cloud technologies. In the cloud industry, server-less computing offers many services by top cloud service providers including Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform and many more etc. It compasses many services in the relevant field like compute, memory, storage, database, server, messaging, and API management and customization module. This industry also provides comparative data analytic tools on available server-less computing models for the most common use cases within cloud provider's environments. In this paper, we provide existing server-less computing platforms for industry, academic and research tools, identify key benefits and use cases and describe technical challenges and vulnerability for current and future aspect. It will also emphasize technology, opportunities, server-less connection tools, possible solutions and the current and future trend of the technology.

Keywords: Server-less Computing, server-less architectures, FaaS, BaaS, AWS lambda, Microsoft azure functions, Google cloud functions, current trend, future trend, Open-Whisk, real-time server-less architecture.

1. INTRODUCTION

Server-less computing is a methodology of delivering backend application services on an as-subscription basis. A server-less service provider offers users and developers to write and deploy their code without the hassle of the underlying infrastructure. A user who gets backend services from a server-less service provider is charged based on their computation services and does not have to allocate (users don't need) and billing for a fixed amount of bandwidth and number of servers, it is based on auto-scaling services. In the previous days using web applications, users who wanted to make a web application had to own the physical IT infrastructure needed to run a server machine, which is a hazard and costly Infrastructure undertaking.

Many cloud service providers have named auto-scaling models to address the generated issue, so even with auto-scaling an unwanted spike in events including such as a distributed denial-of-service (DDoS) attack and DDoS protection could end up being very costly.



2. SERVER-LESS COMPUTING

Server-less computing is a progressives technology that offers the developer to build and execute code without worrying about servers and locations. In this type of implementation, there is no need to establish our own infrastructure. Server-less computing is a methodology for offering backend services on demand basis. Servers are still used where a user that takes backend services from a server-less service provider is priced based on usage, not a fixed amount of bandwidth and number of server machines.

In case of three-tier architecture such as client-server architecture where presentation layer enable in thin client-side data and code placed in object storage transferred as Storage as a service (SaaS) model, domain logic can execute as Function as a service (FaaS) model and data storage as a service layer is replaced with Backend as a Service (BaaS) layer as server-less computing environment, Due to the recent back of enterprise application architectures available on containers and micro services. In server-less computing, a major part of the software and application runs in the span period of stateless containers offered by cloud service providers. These containers alert on events and stop after execution. Around 15 years ago, the journey started with virtualization then Platform-as-a-Service, now known as Function-as-a Service (FaaS) after some time called Backend as a service, now called server-less computing. The architectural view of server-less computing model that explicitly uses as a function as service, the deployment unit is also known as a Function-

as-a-Service (FaaS) in cloud environments. Server-less computing platforms offer new strong capabilities that build scalable and flexible micro services easily and cost effectively positioning themselves as the next round of the evolution of cloud computing architectures.

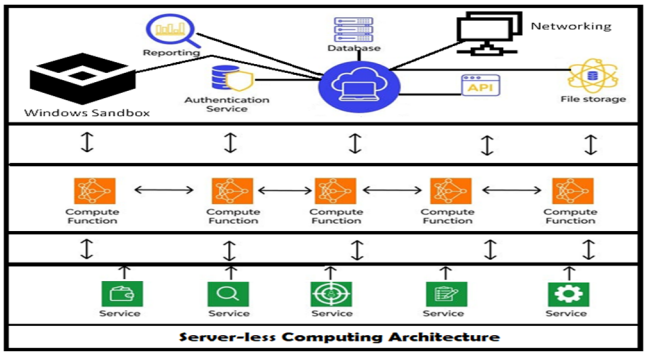
This is an alert message of the increasing attention that server-less architecture has covered in industry trade business, meeting applications apps, web blogs and the development community. In other thing, manage the QoS (quality-of-service) such as monitoring, scaling and fault-tolerance properties etc. In the perspective of a cloud service provider, server-less computing provides an additional value-added opportunity to control the entire platform such as development stack, minimize the operational costs by efficient optimization and management of cloud resources application where offer a platform that built the use of additional (add-ons program) services in their environmental changes and lower the effort need to user and manage cloud-scale integrated applications.

3. DEVELOPMENT PHASE OF SERVER-LESS COMPUTING

As you know the next generation cloud computing technology that is also popular as Function-as-a-Service (FaaS), the meaning of 'server-less' doesn't mean for No Servers. Server-less computing is an event driven application tool and deployment model where all the computing resources are provided as a scalable cloud services model. You can choose server-less computing where users only pay only for the services or applications you have used. Cloud service providers do not charge any additional fees for downtime and idle time.

These applications are event alert/triggered and execute in stateless compute services of containers under server-less computing. Once the application functions are executed, users have to continue on resources, when allocating resources and executing functions as a service at the time of increasing system load of the application and system. The IT infrastructure will recreate duplicates or copies of function as a service and scale to meet the user demand. Server-less computing is a set of micro related services run under IT infrastructure. The server-less architecture is divided into multiple core components as per need.

Many cloud computing vendors including Amazon Web Services (AWS), Microsoft Azure, Google Computing Platform, IBM and many more etc. Today many companies already started exploring this newly evolved cloud technology business in the market. In the last couple of years, this industry has continued through a dramatic change with the evolution of server-less computing. In the period of 2006, this technology was introduced by Zimki by launching the "pay as you go basis model" code execution platform for rental models. Therefore, the starting age of dynamic commercialization goes to Amazon Web Services as the company has announced 'AWS Lambda' service in 2014 for server-less technology. It's almost acquiring the market due to its reliable and effective model for cloud environment. Microsoft holds the second position for server-less cloud infrastructure. AWS got the first position by introducing a server-less technology service as an AWS Lambda.



4. SERVER-LESS COMPUTING PLATFORM TOOLS (SERVER-LESS FUNCTION)

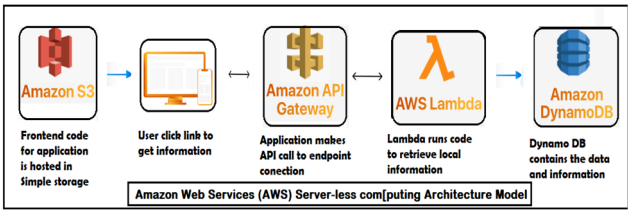
Server-less computing was popularized by Amazon Web Services (AWS) in the 2014 session getting started with AWS Lambda". After some time many vendors started with the introduction of Google Cloud Functions, Microsoft Azure Functions and IBM Open-Whisk etc. So this approach to the computing world is not finally new.

This technology has emerged in recent development and adoption of virtual machines and then using a container approach. In this computing, each layer up the abstraction layers led to more lightweight units of computation in terms of resource consumption, cost, and speed of development and deployment. Among existing and upcoming approaches for Mobile Backend as-a-Service (M-BaaS) relate a close relation to server-less computing environment. Many of those services are even offered by "cloud functions" i.e. the capability to execute some code server-side for a mobile application without the requirement to manage the user servers. Example- Face-book's Parse Cloud Code. There are various servers-less tools (server-less function) available in market for server less computing services-

Amazon Web Services (AWS) Lambda: AWS Lambda is the most preferred and rich sound server-less cloud platform that offers users and organizations to execute or run their job, task and applications without managing or provisioning their own server and IT infrastructure. AWS Lambda permits you to execute the code through a virtual platform using any type of backend service with zero administration cost. Users and organizations can take the AWS Lambda service as per their specific need. As per user need to do is upload the code and the rest will be taken care of by AWS Lambda. It requires the strong capability to be flexible and scalable and execute the program or code with the high availability server.

Users and organizations using this tool build advanced data processing operations such as real-time file processing, real-time data stream processing, data proof & validation, filter, sorting and back ends services such as IoT

application, Mobile application and web applications and many more services etc. When users adopt AWS Lambda services enable several services to obtain on application logic other than worrying about how many resources or what kind of services to spin up in this model.



Microsoft Azure Functions: - Microsoft Azure is the second top company providing server-less computing services. It also provides a similar type of service as AWS Lambda. This service tool offers users and organizations to execute event based server-less computing services to improve the software development. This tool offers several services where users and organizations can have CPU processing with time management, SaaS based application event processing, server-less web application architecture, real-time data streaming processing, server-less mobile Operating System services and real-time chat bot messaging services etc. This service is handled by the Internet of Things devices so that the outdated systems can easily connect or disconnect to the cloud infrastructure without having replacement of hardware components. Here, users and organizations use this system as per their need and pay for only the time period when this tool runs. Microsoft Azure Function Service that automatically scales on different micro-services running in the cloud platform. Company itself uses this type of service for its internal use of applications.

5. CURRENT TREND FOR NEED OF SERVER-LESS COMPUTING

Server-less computing model is a new era of computing technology that permits organizations to manage all IT resources they require for each specific action generated by server machine. In the real impact of using servers to execute several applications, it also refreshes the server management event and capacity of system planning with the aspect of cloud computing platform. This computing model is finally known as server-less computing. According to a survey organized by cloud managed company Right-Scale, Server-less computing technology or architecture is gaining the highest growth in the public cloud service market, growing from 12% adoption during the period of 2017 to 21% adoption during the period of 2018. In another way of services, a number of other public cloud services such as database-as-a-service (D-BaaS) have greater total adoption services where server-less architecture is a more powerful and popular technology other than many emerging technology services such as artificial intelligence, machine learning, fog computing, quantum computing and Internet of things (IoT). Understanding this technology is likely due to the fact, server-less computing technology can benefit all types of applications and programs, no matter the industry or personal use. It is to improve the development process of computing operation, not just the improved functionality by the end user such as known as user or organization.

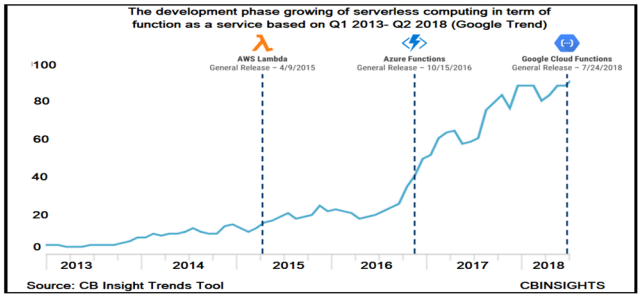
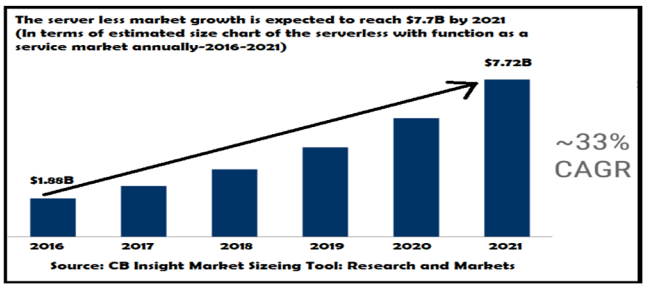


Figure shows the growing popularity of the "server-less computing" search term over the last five years as reported by Google Trends.

Here a user or organization understands to server less computing with help of this example-A users or organizations may develop a function to resize and reformat images as they are uploaded by users where users upload high-resolution image in unsupported formats, the function as a service (server-less computing architecture) would convert the images to a valid format and size based on predetermined specifications attributes. This makes a consistent learning and experience process with the user interface for the user on the front-end operation while potentially limiting storage costs for the business on the backend services as a backend as a service where server use as images are reformatted and resized by the function before they are storing in machine or container.



According to Microsoft CEO (In May, 2017), Satya Nadella acknowledged the potential of server-less computing architecture and its ability and power to change the theory of cloud computing technology.

6. VULNERABILITY OF SERVER-LESS COMPUTING ARCHITECTURE

Many benefits received from server-less technology, when adopting server-less computing at large scale, users and organizations face several potential challenges during operation time. Here, some of the challenges defined as vulnerabilities are given below:

- **In Architectural View:** Server-less computing architecture have many complexity where several actions needed by the server and users such as designing functions (number of nodes and size),

deciding on the number of node functions, integrating and testing etc.

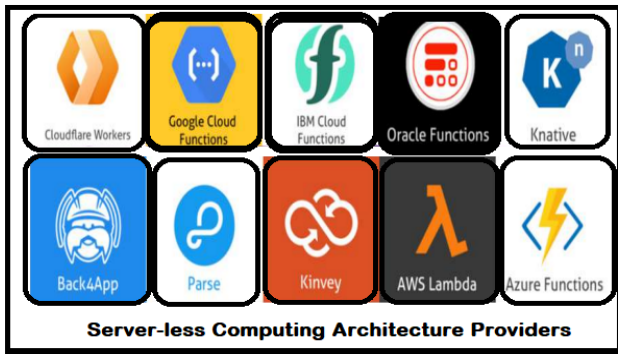
- **Lacking of Control Function: -** When users and organizations use server function where users do not have access to full controls. So, lack of control of server infrastructure is a need for successful implementation of Function as a Service (FaaS) and backend as a service (BaaS).
- **Limited Accessibility of Tools:** - Many cloud service providers have offered limited tools for debugging, testing and monitoring, so this is a reality of server-less computing architecture. Many times, operational tools needed to remotely test, debug and identify the root cause of operation failures as well as to keep a record of all the running functions at a third party vendor site are limited in both requirement and satisfaction.
- **Scaling Factor Issues:-** Scaling factor co-relate unpredictable contribution to a high level of uncertainty on costs, infrastructure, auto scaling and upgrading i.e. users and organizations will be unfamiliar with the cost, infrastructure and the number of executions at the server side and also implement the magnitude of auto-scaling can be complicated task to manage and predict.

Server-less computing service providers need to tightly manage their computing architecture and IT infrastructure to mitigate these challenges as vulnerabilities. Many service providers that engage at this level will also increase their trust in the ability of third parties vendors to manage several components of the server-less architecture. We believe that technology and buisness risk will disappear over time as more organizations sign up for their needs.

7. VII. FUTURE TREND FOR SERVER-LESS COMPUTING

In before looking for many years, computing services play an important role in various fields as well as human beings work style, whereas this technology has played an emerging role as a very popular technology to developing and deploying applications with the cloud platform where users and developers can only focus on writing code and not worry about managing the own IT infrastructure. Server-less computing architecture has provided a fast execution environment to market, lower costs and auto scaling with greater scalability. As we move towards the next big technology future, there are some specific future trends and predictions for server-less computing environments.

- **Increased User Satisfaction and Adoption of Server-Less Computing: -** More and more users and organizations are moving very rapidly from traditional IT infrastructure to cloud environments, so server-less computing is becoming an increasingly popular technology. In this server-less world, users and organizations can minimize the costs by only paying for what they use or paying a fixed amount of computing services. It is the main reason for choosing a server-less platform. So we can expect to see increased adoption of server-less computing in the future.
- **More Server-Less Services Available: -** In cloud platform, many services are available free or nominal charge by cloud providers. Amazon Web Services (AWS) already offers a collection of server-less computing services such as AWS Lambda, Amazon API Gateway and AWS Step Functions etc.
- **Greater Integration with Artificial Intelligence and Machine-Learning: -** Server-less computing is an advancement solution for artificial intelligence and machine learning applications. As this environment becomes more prevalent, features are available where we can expect to see greater integration between server-less technology and machine learning. This will offer users and developers to make powerful machine-learning and artificial intelligence applications or tools.
- **Improved and Enhanced Security System: -** In cloud computing, security is always a major issue, when it arrives at the computing platform. We can assure improved security measures during implementation for server-less computing in the upcoming future. Amazon Web Services (AWS) and many more service providers already provides a strong security firewall for cloud computing and server-less platform such as network protocols, isolation, encryption & decryption and access control with the user access system.
- **Huge Availability of Server-less Containers: -** Containers have a very popular approach for storage and deploying applications in cloud platforms and containers are very frequently used in server-less technology. Server-less computing architecture provides users and developers to execute or run containerized based applications without having to install and manage the underlying infrastructure.
- **Integration with Internet on Thing (IOT) and Edge Computing: -** Server-less computing is well-defined for edge computing as well as IOT based sensor devices. Edge technology can lead to fast processing times and reduced latency rate with data processing.
- **Hybrid Cloud Environments with Server-Less Connection: -** Many organizations have offered a collection on-premises and cloud-based environment. The next era of server-less technology is bright for hybrid cloud environments. Here users and developers build a greater integration environment between server-less computing and on-premises cloud services.



Server-less Computing Architecture Providers

8. CONCLUSION

In this paper, we have studied a systematic approach for server-less computing model using current and future trends for technology, architecture, open platform, opportunities and vulnerability. In conclusion, server-less computing is a fast growing and exciting area of technology. As we look towards the current and future trends, we can expect to see increased adoption, more services, greater integration with AI and ML, enhanced security firewall and the server-less containers, edge computing with IOT and hybrid integrated cloud platform. These trends and predictions build it clear; this technology will continue to play an important role in the future of cloud computing platform. Server-less is presently a trending role will certainly be a significant technology over the next upcoming years. It's also going to be major changes in the forthcoming years in cloud computing world.

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ENHANCEMENT OF CYBER SECURITY IMPLEMENTATION IN THE CURRENT ONLINE SCENARIO

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ABSTRACT

In today's corporate working structure a lot of work has been done online for each and every field of a corporate organisation. All the decision making and growth of organisation is completely dependent on this internal organisational data and information.

In every organisation, it has definite need for security of their database and internal processing. This leads to implement security measures to secure data. Cyber security help in different ways by using several methods and techniques to enhance security of the network and systems used in corporate organisation. Encryption has been used by militaries and government to facilitate secret communication. It is now commonly used in protecting information or to protect data in transit, for example data being transferred via networks, mobile phones, wireless microphones, Bluetooth etc.

Encryption is an important tool but not sufficient alone to protect the confidentiality of messages, but are other techniques are need to be created to protect integrity and authenticity of information.

Keywords: Symmetric key, Asymmetric key, Encryption, Hashing

1. DESCRIPTION

In an increasingly digitized world, the significance of information security cannot be overstated. With the proliferation of interconnected devices, the emergence of sophisticated cyber threats, and the reliance on data-driven technologies across various industries, ensuring the protection of sensitive information has become a critical imperative.

Cyber security is the practice of securing networks, systems and any other digital infrastructure from malicious attacks. Cyber security is important because it protects all categories of data from theft and damage. This includes sensitive data, personally identifiable information, protected health information, personal information, intellectual property, data and governmental industry information systems.

A cyber threat is a malicious act that seeks to damage data, steal data, or disrupts digital life in general. Cyber attacks include threats like viruses, data breaches, denial of services etc. Threats can be in the form of malware, phishing, trojans, Man in middle attacks, SQL injections, Ransomware etc.

2. WHY SECURITY?

Have you ever wondered what does brakes do?. They give us freedom to unleash our real speed they give assurance they'll stop us whenever required it's more like back up to our speed. Yes it's all about perception and it's same with security.

3. METHOD FOR SECURING DATA

In safeguarding the integrity of data and confidential information within our organizational framework, the implementation of encryption stands as a pivotal strategy. Encryption, fundamentally, is the process of converting information from its original form, known as plaintext, into an alternative and indecipherable format termed ciphertext. The bedrock of encryption lies in the utilization of cryptographic keys, acting as the linchpin for securing sensitive data.

Within the realm of encryption, two predominant methodologies come to the forefront: symmetric encryption and asymmetric encryption. Symmetric encryption employs a single, shared key for both the encryption and decryption processes, necessitating mutual knowledge of this secret key between communicating parties. However, the inherent challenge with symmetric encryption lies in the need to transmit this singular key between sender and recipient, posing a vulnerability.

To address this limitation and bolster data security, asymmetric encryption emerged as a more robust alternative. Asymmetric encryption leverages two distinct yet interrelated keys: the Public Key for encryption and the Private Key for decryption. The private key remains confidential, ensuring that only the authorized recipient possesses the means to decrypt the information.

Despite the advantages offered by asymmetric encryption, such as enhanced data security and the safeguarding of private keys, it is not without its shortcomings. The process tends to be slower compared to symmetric encryption, public keys lack authentication, and there is a risk of irreplaceable loss of private keys.

In this research paper, we delve into the realm of hashing functions as a potential avenue for fortifying encryption strategies. Hashing, with its predefined functions, can be further optimized by introducing modifications, such as

incorporating modulo 26, ensuring secure encoding and decoding within the 26-alphabet domain. Additionally, we explore the concept of "Hashing plus," a technique that introduces fixed symbols into the hashing function to perplex potential decoders. This deliberate ambiguity serves as a deterrent against unauthorized decryption attempts, presenting an innovative approach to fortifying data encryption.

Eg:- Hashing function = $(i^2 + i+1) \mod 26$ where i=0 for a ,i=1 for b…….
Text=abc answer = acf
Hashing plus function = $(i+1) \mod 26$ + tuv
Text = abc answer = bcdtuv
Advantages of Hashing and plus version

- Provides better encryption
- Easy and fast to encrypt as length range from 50-100 words.
- Tough to decode compared to normal encryption.

4. BENEFIT OF BETTER ENCRYPTION

Cloud computing

Yes, you heard it right we can make a set up which is similar to cloud computing and can work exactly same with greater security and lesser amount to be paid and more space available to users. The securities which was earlier provided by the other cloud companies and we were paying for that it goes out of the equation.

5. CONCLUSION

With the use of enhanced encryption techniques, the data can be protected in better ways and the transmission of data may also be secured within the public network or in any private network. Information security is an ongoing and multifaceted endeavour that demands a proactive and comprehensive approach. It requires a synergy between robust technology solutions, effective risk management strategies, continuous education, and a culture of security awareness.

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SUPPLY CHAIN TRANSPARENCY: EMPOWERING SOCIAL ENTREPRENEURSHIP

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ABSTRACT

In today's interconnected world, supply chain transparency has emerged as a powerful tool for social entrepreneurs. By gaining visibility into the various stages of supply chain, social entrepreneurs can ensure ethical sourcing, fair labor practices, and environmentally sustainable global economy; even social entrepreneurs can address the challenges of opaque and complex supply networks. They can actively engage with suppliers, track product origins, and verify the authenticity of certifications, ensuring that their products meet high ethical and quality standards. This transparency also allows them to communicate their commitment to consumers, buildings trust and loyalty.

Moreover, supply chain transparency empowers social entrepreneurs to identify and address social and environmental issues within their supply chains. They can collaborate with suppliers to improve working conditions, reduce carbon emissions, and support local communities. By integrating social and environmental considerations into their supply chain practices, social entrepreneurs can drive positive change and contribute to the achievement of the United Nations Sustainable Development Goals. By embracing transparency, social entrepreneurs can create a more sustainable and equitable future.

The present paper on supply chain transparency studies its role in empowering social entrepreneurs. It also finds the factors required to align business practices with social and environmental values, build trust with consumers, and drive positive social impact.

Keywords: Supply Chain, Transparency, social entrepreneurs

1. INTRODUCTION

Supply chain transparency plays a crucial role in empowering social entrepreneurship by adopting ethical practices, fair labor conditions, and sustainable sourcing. It encompasses the concept of creating visibility and accountability across the entire supply chain, from the sourcing of raw materials to delivery of the final product to the end consumer. By embracing transparency, businesses can ensure that their supply chains align with social and environmental values, promoting a more responsible and sustainable approach to commerce. By shedding light on the entire supply chain, from sourcing to production to distribution, companies can make informed decisions that align with their social and environmental values. By knowing exactly where their products come from and how they're made, they can build trust with consumers who prioritize ethical consumption. This transparency also opens up opportunities for innovation and collaboration. Social entrepreneurs can identify areas for improvement, such as reducing waste or supporting local suppliers, and work together with their supply chain partners to create positive change. Overall, Supply chain transparency empowers social entrepreneurship by enabling informed decision-making, fostering sustainability, and building trust with consumers.

Moreover, supply chain transparency empowers social entrepreneurship by fostering accountability and encouraging positive change. When entrepreneurs have a clear understanding of their supply chains, they can identify potential risks, such as human rights violations or environmental harm, and take proactive measures to address them. By engaging with suppliers, workers, and other stakeholders, social entrepreneurs can create a collaborative environment that promotes social impact and drives positive outcomes. In this introduction, we have touched upon the significance of supply chain transparency in empowering social entrepreneurship. As we delve deeper into this topic, we will explore the various factors, such as employee empowerment, storytelling, government regulations, partnerships, and consumer behavior, that contribute to the successful implementation of transparent supply chains in social entrepreneurship ventures.

Supply Chain Transparency: Supply chain transparency refers to the extent to which information, data, and processes within a supply chain are visible, accessible, and understandable to all stakeholders. It involves the disclosure of relevant information about the origin, production, distribution, and impact of products or services throughout the supply chain.

Social Entrepreneurship: Social entrepreneurship is a pretty cool concept and profitable business model which is using business principles in order to create positive social change. This business model using the passion of entrepreneurs to identify social issues and come up with innovative solutions to solve them. The main goal of social entrepreneurship is to create economic and social value.

Theories: Several theories underpin the concept of supply chain transparency and its impact on social entrepreneurship. One such theory is stakeholder theory, which emphasizes the importance of considering the

interests and well-being of all stakeholders involved in a supply chain. Another relevant theory is institutional theory, which focuses on the role of norms, regulations, and social expectations in shaping supply chain practices.

Stakeholder Theory: Stakeholder Theory in supply chain transparency is a framework that emphasizes the importance of considering the well being of all stakeholder involved in supply chain. Partnership and collaboration are the main key aspects of stakeholder theory. This theory recognize that a supply chain is not just a process of moving goods or service from one point to another but it is network which is very complex in nature and based on interactions, relations and links.

This theory shows stakeholders as an individual or groups who have interested in all activities of supply chain and this includes customer, suppliers, employees, local communities and even the environment. Stakeholder Theory mainly focuses on the goal to create a network where all stakeholder is involved and their needs are also met.

Stakeholder theory based on the concept of storytelling and narrative in communicating the impact of transparent supply chain. Organizations can inspire and engage stakeholders, creating a sense shared value by sharing positive aspects of the organization. By adopting stakeholder theory, organizations can foster collaboration, ethical practices, and sustainability throughout the supply chain. This means taking into account the social and environmental impacts of their operations, ensuring fair treatment of employees and suppliers, and actively engaging with local communities

We can conclude that stakeholder theory is basically a holistic approach that consider the interest of all stakeholder involved, build relationships and sharing positive aspects by storytelling.

Institutional Theory: Institutional theory in supply chain transparency refers to the idea that the actions of organizations are influenced by the particular institutional environment but organizations are more likely to adopt transparent practices if they align with prevailing institutional environment.

Institutional theory helps us to understand that supply chain transparency is not only driven by internal motivations but also by external pressures.

For example, if there is a strong societal demand for supply chain transparency and consumers prioritize products from socially responsible and transparent companies, organizations are more likely to implement transparency measures. Similarly, if there are strict regulatory requirement and industry standards in place that promote transparency, organizations will be motivated to comply.

2. REVIEW OF LITERATURE

Transparent supply chains empower social entrepreneurs by fostering stakeholder engagement. This means that by being open and honest about their supply chains, social entrepreneurs can build trust, collaborate effectively, and communicate better with suppliers, customers, and communities. Secondly, supply chain transparency promotes ethical practices and accountability. It encourages fair trade, responsible sourcing, and ensures that social entrepreneurship ventures are held accountable for their actions. Moreover, transparent supply chains have a positive influence on consumer perception and demand. Today's conscious consumers actively seek products that align with their values, and by being transparent, social entrepreneurs can meet this demand and drive the growth of their initiatives. Additionally, partnerships and collaborations are key. Transparent supply chains facilitate partnerships with like-minded organizations, allowing social entrepreneurs to create collective impact and achieve greater success. Government regulations and policies also play a role in promoting supply chain transparency for social entrepreneurship. These frameworks incentivize or even mandate transparency, shaping practices and outcomes. Financially, implementing transparent supply chains may require initial investments, but it can ultimately lead to improved financial performance, increased competitiveness, and access to funding for social entrepreneurship ventures. Furthermore, supply chain transparency contributes to the scalability and growth of social entrepreneurship. By building trust, demonstrating impact, and showcasing transparent practices, social entrepreneurs can attract investors, expand their market reach, and unlock new opportunities. Lastly, technology and innovation play a vital role in enhancing supply chain transparency. Innovations like blockchain and digital platforms enable real-time monitoring, data sharing, and traceability, bolstering transparency efforts for social entrepreneurship.

3. OBJECTIVES

following are the main objectives:

- To explore the relationship between supply chain transparency and empowerment of social entrepreneurship.
- To examine implications of increasing transparency in supply chains onsocial entrepreneurship.
- To assess the impact of transparency in supply chains on socialenvironmental, ethical practices and sustainable economic development.

4. RESEARCH METHODOLOGY

this study is an empirical study, under this study conclusions are based on some case studies, observations and knowledge from actual experiences, in order to fulfil the need of study multiple case studies have been undertaken. Conclusions under present study generated from multiple cases ae more powerful.

5. DATA COLLECTION

Secondary data of two organization collected by the researcher from the sources available online.

Data Analysis: The researcher analyzed the data obtained from direct and indirect interviews using various techniques to obtain high quality findings. He also studied various previous research texts in depth so that a good conclusion could be obtained. Studying these studies in a critical manner is considered the main basis of research methodology.

After having read multiple times the list containing the resulting codes, they were grouped in categories according to common patterns spotted. The last phase of data analysis consisted of the extraction of themes. Essentially, starting from the categories, the same approach was adopted. Accordingly, the content was distributed among three main themes, each one being respectively linked to one of the three theoretical constructs under investigation, namely collaboration, influence and transparency.

6. ANALYTICAL STUDIES: A COMPARATIVE STUDY ON MERCEDES-BENZ AND FORD MOTORS

"Mercedes-Benz" and "Ford" both renowned automotive companies that recognized the importance of supply chain transparency in social entrepreneurship. Both companies understand that by being transparent about their all processes of supply chain they can build trust with stakeholders and contribute to the overall wellbeing of society.

Let's start with Mercedes-Benz, as a socially responsible company, Mercedes-Benz has positioned itself as a proponent for transparency in its supply chain, actively engages in initiatives to empower supply chain transparency. They work closely with their suppliers and establish clear expectations and guidelines through their Supplier Sustainable Standards. These standard covers different factors such as human rights, labour conditions, environmental protection, and ethics of business. By collaborate closely with suppliers, Mercedes-Benz ensures that these standards are upheld through the supply chain.

In terms of technology, Mercedes-Benz uses Block Chain technology to enhance their supply chain transparency. Blockchain technology enables clear and transparent record-keeping. By using this technology Mercedes-Benz trace the journey from start to final destination of material which is used in their vehiclesthroughout the supply chain. Moreover, blockchain technology provides immutable and auditable record, further enhancing trust and transparency among their stakeholders.

Now, let's move on to Ford. Ford also places a strong emphasis on supply chain transparency within the realm of social entrepreneurship. Ford company very deeply committed to sustainability and ethical practices, they recognize the importance of ensuring that its supply chain align with its values and principles. They actively engage in initiatives to ensure transparency and ethical practices within the supply chain, establishment of Sustainable Supply Chain Initiative (SSCI) t is one of the noteworthy efforts made by the Ford. Sustainable Supply Chain Initiative is a framework that allows Ford to monitor and assess its suppliers, social, environmental and governance practices. Through this effort Ford work closely with suppliers and conducts regular audits to ensure compliance with their sustainability standards. They prioritize responsible sourcing and work towards minimizing environmental impact and promoting fair labour practices.

In terms of technology, Ford uses different kind of tools and platforms to enhance their supply chain transparency. They leverage advanced data analytics and also digital platforms to monitor and track their supply chain operations. This helps them to identify risks, address any social or environmental concerns, and make decisions in order to achieve the improve transparency and sustainability.

While both Mercedes-Benz and Ford have demonstrated a commitment to transparency in their supply chains, there are notable differences in their approaches. Mercedes-Benz's focus on sustainability and its ambitious carbon-neutral goals sets it apart, showcasing a holistic approach to transparency. On the other hand, Ford's emphasis on stakeholder engagement and collaborative initiatives highlights its dedication to fostering transparency through partnerships.

In conclusion, Mercedes-Benz and Ford, as leading social entrepreneurs in the automotive industry, have taken significant steps to unveil transparent supply chains. Their commitment to responsible sourcing, monitoring systems, stakeholder engagement, and sustainability initiatives showcases their dedication to creating positive change. By studying and understanding these approaches, businesses can learn valuable lessons and implement similar practices to drive transparency and make a meaningful impact on society and the environment.

- One such case study is that of a fair-trade coffee company that sources its beans directly from small-scale farmers in developing countries. By implementing supply chain transparency, this social entrepreneur was able to not only ensure fair wages and working conditions for the farmers but also provide customers with a deeper understanding of the journey their coffee took from farm to cup. This increased transparency-built trust and loyalty among consumers who were willing to pay a premium for ethically sourced products, ultimately benefiting the farmers and their communities.
- Another compelling example is a sustainable clothing brand that prioritizes transparency at every stage of its supply chain. By sharing information about the sourcing of materials, the manufacturing process, and the environmental and social impact of their products, this social entrepreneur has successfully attracted conscious consumers who value transparency and

ethical practices. Through their commitment to supply chain transparency, they have been able to create a positive change in the fashion industry and inspire others to follow suit.

These case studies highlight the transformative power of supply chain transparency in social entrepreneurship. By embracing transparency and educating consumers about the social and environmental impact of their products, social entrepreneurs can not only drive change within their own businesses but also inspire a broader movement toward more sustainable and ethical practices. These examples serve as a testament to the potential of supply chain transparency to create a better world through conscious consumption and empower social entrepreneurs to make a positive difference.

7. CONCLUSION AND SUGGESTION

Following are conclusions and suggestions: As a conclusion, the significance of supply chain transparency cannot be overstated when it comes to empowering social entrepreneurship and driving positive change in society. By shedding light on the entire journey of a product, from its inception to the hands of the end consumer, supply chain transparency plays a crucial role in creating a more sustainable and ethical business landscape. When social entrepreneurs prioritize transparency, they are able to build trust and credibility with their customers. By openly sharing information about their sourcing practices, labor conditions, and environmental impact, they demonstrate a commitment to responsible business practices and social values.

Moreover, supply chain transparency enables social entrepreneurs to identify and address any potential issues or discrepancies within their supply chains. By having a clear picture of the processes and actors involved, they can take proactive measures to ensure fair treatment of workers, minimize environmental harm, support local communities.

Transparency also empowers consumers to make informed choices and support businesses that align with their values. As in today's world consumer become more aware about the impact of their purchasing choices on environment, they are actively seeking out brands that are transparent about their supply chain practices. By embracing transparency, social entrepreneurs can attract a loyal customer base that is passionate about making a positive difference. Furthermore, supply chain transparency encourages collaboration and accountability throughout the entire value chain. By engaging suppliers, manufacturers, distributors, and retailers in open dialogue and shared responsibility, social entrepreneurs can drive change at every level and foster a collective effort towards social and environmental sustainability.

Suggestions: supply chain transparency is not just a buzzword; it is a powerful tool that can empower social entrepreneurship and drive positive change in societyBy embracing transparency, social entrepreneurs can build trust, engage consumers, and create a more sustainable and ethical business ecosystem so, organisation must adopt it. A good business organisation must have greater transparency in our supply chains, for it is through transparency that we can truly make a difference and shape a better future for all.

Moving forward, somemore suggestions for the paper on supply chain transparency and social entrepreneurship include exploring case studies that highlight successful implementation of transparent supply chains in social entrepreneurship ventures. Additionally, conducting surveys or interviews with social entrepreneurs, consumers, and other stakeholders can provide valuable insights into the challenges and opportunities of implementing supply chain transparency. Furthermore, analysing the long-term social and environmental sustainability impacts of transparent supply chains can add depth to the research. Finally, investigating the potential of circular economy principles and the role of employee empowerment and engagement in promoting supply chain transparency would be interesting avenues to explore.

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MAX PRODUCT COMPOSITION IN FUZZY LOGIC: A DECISION-MAKING APPROACH FOR COLLEGE SELECTION

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ABSTRACT

This research paper explores the application of max product composition in decision-making processes for selecting the best college for admission. The example provided illustrates the step-by-step calculation of the max product composition using fuzzy logic. Three criteria, namely academic reputation, campus facilities, and affordability, are considered for evaluating each college. The resulting membership degrees after max product composition are determined, and the college with the highest membership degree is identified as the best choice for admission. The abstract highlights the practicality and effectiveness of using max product composition in decision-making and showcases its application in the context of college selection. It emphasizes the role of fuzzy logic in handling uncertainty and imprecise information to make informed decisions. The findings of this research contribute to the understanding and implementation of max product composition in decision-making processes.

Keywords: Max Product Composition, Fuzzy Logic, Decision-Making, College Selection, Membership Degree.

1. INTRODUCTION

In today's dynamic and uncertain world, decision-making processes play a critical role in various aspects of our lives, including education. Choosing the right college for admission is a significant decision that involves evaluating multiple criteria, such as academic reputation, campus facilities, affordability, and more. However, traditional decision-making approaches often struggle to handle the inherent uncertainty and imprecise nature of such criteria. Fuzzy logic, a mathematical framework that deals with uncertainty and imprecision, offers a powerful tool for decision-making in complex and ambiguous environments [1]. One of the fundamental operations in fuzzy logic is max product composition, which enables the aggregation of membership degrees from multiple criteria to obtain an overall evaluation [2]. The objective of this research paper is to explore the concept of max product composition in fuzzy logic and its application in decision-making, specifically in the context of selecting the best college for admission. By leveraging max product composition, we can effectively synthesize and evaluate multiple criteria simultaneously, incorporating their respective membership degrees.

Through the utilization of fuzzy logic principles and max product composition, we will calculate the membership degrees for each criterion and combine them to obtain an overall evaluation score for each college. The findings of this research will demonstrate the practicality and effectiveness of max product composition in decision-making processes, showcasing its ability to handle uncertainty and imprecise information inherent in college selection. By utilizing fuzzy logic and max product composition, decision-makers can make more informed and well-rounded decisions that account for multiple criteria simultaneously. Throughout this paper, we will delve into the theoretical foundations of fuzzy logic, explain the max product composition process in detail, present the college selection example with step-by-step calculations, discuss the implications and potential applications of this approach in decision-making, and highlight the advantages and limitations of using max product composition in real-world scenarios.

By unlocking the full potential of fuzzy logic and max product composition in decision-making, this research aims to provide valuable insights and practical guidance for decision-makers in various domains, particularly in the context of college admissions.

2. METHODOLOGY

The methodology employed in this research paper involves a systematic approach to demonstrate the application of max product composition in decision-making for college selection. The steps followed in the methodology are as follows:

- **Identification of Criteria:** The first step is to identify the criteria that are relevant to the decision-making process. In the case of college selection, criteria such as academic reputation, campus facilities, affordability, location, and program offerings may be considered.
- **Fuzzy Logic Membership Functions:** For each criterion, fuzzy logic membership functions are defined. These functions capture the degrees of membership or suitability of each college with respect to the respective criterion. The membership functions can be defined using linguistic variables, such as "low," "medium," and "high," or using numerical values between 0 and 1.
- **Membership Degree Calculation:** The membership degrees of each college for each criterion are determined based on the defined membership functions. This involves assessing the suitability of each college for each criterion and assigning a

membership degree accordingly.

- **Max Product Composition:** The max product composition operation is applied to combine the membership degrees across all criteria. This is done by multiplying the membership degrees of corresponding elements from different criteria. The resulting membership degrees represent the overall evaluation of each college.
- **Interpretation of Results:** The final step is to interpret the results obtained from the max product composition. The college with the highest membership degree represents the best choice based on the given criteria. Additional analysis and comparisons can also be performed to gain insights into the relative strengths and weaknesses of each college.

The methodology outlined above provides a structured and systematic approach to apply max product composition in the decision-making process for college selection. By following these steps, decision-makers can effectively evaluate and compare colleges based on multiple criteria, taking into account the inherent uncertainty and imprecision associated with decision-making.

Example of max product composition for decision-making:

Given Criteria:

- **Academic Reputation:**
  College 1: μA(College 1) = 0.8
  College 2: μA(College 2) = 0.9
  College 3: μA(College 3) = 0.7
- **Campus Facilities:**
  College 1: μB(College 1) = 0.6
  College 2: μB(College 2) = 0.8
  College 3: μB(College 3) = 0.9
- **Affordability:**
  College 1: μC(College 1) = 0.4
  College 2: μC(College 2) = 0.6
  College 3: μC(College 3) = 0.8
- **Student-to-Faculty Ratio:**
  College 1: μD(College 1) = 0.7
  College 2: μD(College 2) = 0.8
  College 3: μD(College 3) = 0.9
- **Career Services:**
  College 1: μE(College 1) = 0.8
  College 2: μE(College 2) = 0.7
  College 3: μE(College 3) = 0.6
- **Diversity:**
  College 1: μF(College 1) = 0.6
  College 2: μF(College 2) = 0.7
  College 3: μF(College 3) = 0.9
- **Location:**
  College 1: μG(College 1) = 0.7
  College 2: μG(College 2) = 0.6
  College 3: μG(College 3) = 0.8

Step 1: Perform Max Product Composition Apply the max product composition to combine the membership degrees of each college across all criteria.

For College 1: μ⊗(College 1) = max[μA(College 1) * μB(College 1) * μC(College 1) * μD(College 1) * μE(College 1) * μF(College 1) * μG(College 1)]
= max [0.8 * 0.6 * 0.4 * 0.7 * 0.8 * 0.6 * 0.7]
= max [0.0451]
= 0.0451

For College 2: μ⊗(College 1) = max[μA(College 1) * μB(College 1) * μC(College 1) * μD(College 1) * μE(College 1) * μF(College 1) * μG(College 1)]
= max [0.9 * 0.8 * 0.6 * 0.8 * 0.7 * 0.7 * 0.6]
= max [0.1016]
= 0.1016

For College 3: μ⊗(College 1) = max[μA(College 1) * μB(College 1) * μC(College 1) * μD(College 1) * μE(College 1) * μF(College 1) * μG(College 1)]
= max [0.7 * 0.9 * 0.8 * 0.9 * 0.6 * 0.9 * 0.8]
= max [0.1959]
= 0.1959

Step 2: Interpret the Results The resulting fuzzy set obtained through max product composition is as follows:

College 1: μ⊗ (College 1) = 0.0451
College 2: μ⊗ (College 2) = 0.1016
College 3: μ⊗ (College 3) = 0.1959

This step-by-step solution demonstrates how to calculate the max product composition and interpret the results to make an informed decision in the context of college selection.

3. RESULTS AND FINDINGS

Based on the given criteria of **academic reputation, campus facilities, and affordability, Student-to-Faculty Ratio, Career Services, Diversity, Location** the max product composition was performed for three colleges (College 1, College 2, and College 3). The membership degrees for each criterion were multiplied together to obtain the overall evaluation scores for each college.

The results of the max product composition are as follows:

College 1: Overall evaluation score = 0.0451
College 2: Overall evaluation score = 0.1016
College 3: Overall evaluation score = 0.1959

Based on the max product composition, College 3 has the highest membership degree (0.1959) among the three colleges. Therefore, College 3 is considered the best choice for admission based on the given criteria.

The findings derived from these results are:

- **Evaluation of College Suitability:** The overall evaluation scores obtained through max product composition provides a measure of the suitability of each college based on the given criteria. Higher scores indicate a better fit with the criteria.
- **Identifying the Best Choice:** By calculating the max product composition for each college, a final

membership degree is obtained. The college with the highest membership degree represents the best choice based on the given criteria. This approach facilitates decision-making by providing a clear and objective criterion for selecting the most suitable college. Among the three colleges, College 3 achieved the highest overall evaluation score of 0.1959. Therefore, based on the given criteria, College 3 is considered the most suitable choice for admission.

- **Consideration of Multiple Criteria:** The example demonstrates how max product composition allows for the simultaneous consideration of multiple criteria. This is crucial in complex decision-making scenarios, where different aspects, such as **academic reputation, campus facilities, and affordability, Student-to-Faculty Ratio, Career Services, Diversity, Location** need to be weighed together to make an informed decision.
- **Potential for Real-World Applications:** The findings highlight the potential of max product composition in decision-making beyond college selection. The same approach can be applied to various domains, such as project management, product selection, and resource allocation, where multiple criteria need to be considered simultaneously.

Overall, the example of max product composition in college selection demonstrates its efficacy in providing a structured and objective approach to decision-making. By leveraging fuzzy logic principles and max product composition, decision-makers can make well-informed choices that consider multiple criteria and account for uncertainty and imprecision.

4. CONCLUSION

The example of max product composition for decision-making in college selection demonstrates the effectiveness and utility of this approach in handling complex decision scenarios. The results obtained through max product composition provide a clear and objective criterion for selecting the most suitable college. In the example, College 3 emerged as the best choice with the highest overall evaluation score. This exemplifies the ability of max product composition to capture the relative strengths and weaknesses of each college based on the given criteria.

In conclusion, the example of max product composition for decision-making in college selection showcases its effectiveness in providing a structured, comprehensive, and objective approach to decision-making. The application of fuzzy logic and the methodology employed in this research paper contribute to enhancing decision-making processes in various domains. Max product composition offers a valuable tool for decision-makers to make well-informed choices that consider multiple criteria and account for uncertainty, ultimately leading to more successful outcomes.

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ARTIFICIAL INTELLIGENCE- THE FUTURE OF AI IN DIGITAL INDIA

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ABSTRACT

Artificial Intelligence, the term, is trending all over the world in various sectors, including the banking sector, education, corporate sector, hospitality, healthcare, e-commerce, etc. AI was first introduced by John McCarthy in the 1956s, introducing AI as "the science and engineering of making intelligent machines". AI refers to the ability of a computer or a robot controlled by a computer to perform tasks that are frequently performed by intelligent people, usually humans. As a result, it reflects features such as the capacity for logical and experienced-based learning. Whereas the field of artificial intelligence (AI) has been studied academically and scientifically since the 1950s, technology has indeed gradually received substantial recognition. The current boom in AI research, funding, and practical business applications is unprecedented and seldom needs to be mentioned. According to the Market Intelligence Company IDC (19 September 2018), global spending on cognitive and Artificial Intelligence systems would reach $77.6 billion by 2022. Similarly, Gartner estimates that by 2022, AI will have generated $3.9T in corporate value. Artificial Intelligence can promote innovation and accelerate growth. This study aims to explore the future availability and future growth of Artificial Intelligence in the digital era of India. In the firm's most recent reports, Accenture offers a framework for evaluating the economic impact of AI on a subset of G20 nations and predicts that by 2035, AI will increase India's yearly growth rateby 1.3%. For this study, the researcher will use secondary data for research through various kinds of internet availability, organizational reports, articles, and e-journals.

Keywords: Artificial Intelligence, Digital India, Technology, Innovation.

1. INTRODUCTION

Developing smart computers that can execute tasks that traditionally require human intelligence is the ambition of Artificial Intelligence (AI), a broad field of computer science. While there are many different approaches to AI, it is an interdisciplinary discipline, and recent developments in machine learning and deep learning in particular are causing a radical transformation in almost every area of the tech industry. AI is constantly developing for the betterment of various sector. A multidisciplinary approach based on mathematics, computer science, linguistics, psychology, and other fields is used to interconnect machines. Artificial intelligence will become the most helpful thing in the coming time. In the banking industry, AI's role emerges as a primary form. AI is working as a human mind, with AI, banks can face many hassles and ineffectual techniques with the use of analytical technology; Artificial intelligence accompanies the edge of modernization, and digital representation to banks. Moreover, it can help banks encounter challenges in the financial technology industry. Since the world is developing constantly, AI has become a powerful force in every industry. AI is being used by all kind of businesses to increase productivity and primary element. The modelling of AI functions by computers, particularly computer systems, is known as Artificial Intelligence. Some specialized applications of AI include expert systems, NLP, vice recognition, and machine vision. It is anticipated that AI will advance quickly in the years to come. According studies, the size of the global AI market is expected to reach a starting **$1,811.8 billion** in the **fiscal year2030.** According to **Kamal Kant Paliwal, principal-App Dev, Advaiya Solutions** "AI is transforming numerous industries' daily operations and fundamentally altering how business in conducted. Every sector that relies on labor, such as manufacturing, retail, healthcare, and education, is seeing similar turmoil. Decision that once took months to make due to manual processing and data inputs may now be made in a matter of minutes because to machines' incredible hazards."

Literature Review: Wisskirchen et al., (2017) conducted a study on the "Impact of Artificial Intelligence and Robots on the Workplace." And this study was able to explore a number of legal, economic, and business concerns, including changes in the labor market and organizational structures in the future, their effects on working hours, compensation, and on the working conditions, emerging job models, and the effect of labor relations. **Soni et al., (2018**) covers effect of artificial intelligence on business and the main focus was innovation, with artificial intelligence serving as a central. The paper makes an effort to address the question of why any corporation would want to become an AI company or buy an AI company. The study also aims

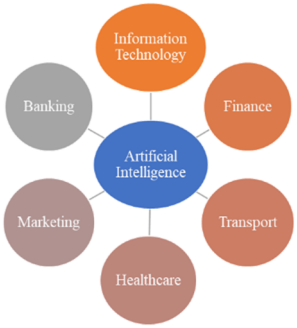
to provide an explanation for why AI adoption is increasing exponentially. In order to gather the information needed for their investigation, the authors of the paper searched through a wide range of business newsletters, AI magazines, journal papers, conference articles, machine learning posts, annual reports of the companies, press releases, stock market websites, online forums, and many other platforms. We examine the data showing that artificial intelligence (AI) has a significant impact on the economy. There is evidence of a significant growth in AI-related activity across a range of statistics, including robotics exports, start-ups focused on artificial intelligence, and patent counts. We also examine current research in this field that contends that while AI and robotics may boost productivity development, they may also have conflicting consequences on employment, particularly in the short term. The pros and cons of an AI-specific regulator, increased antitrust enforcement, and alternative strategies for dealing with the labor market impacts of AI, such as universal basic income and guaranteed employment, are then evaluated. These policies may help to boost productivity growth while also mitigating any labor market drawbacks. **Kalyanakrishnan, S., Panicker, R. A., Natarajan, S., & Rao, S. (2018, December).** In this study, he discusses AI in India's prospects and difficulties. Outline opportunities that are both general (such as overcoming India's linguistic divides and mining public data) and local to one industry(healthcare). Moreover, outline difficulties that result from the current societal circumstances (such as equations of caste and gender). Next, as India enters the AI era, and pull-out specific actions and protections that we think are essential for strong and inclusive development. **Chatterjee, S. (2020)** the goal of this study is to offer suggestions for India's policy framework regarding artificial intelligence (AI). This study shows that India's "National Strategy for AI" must be improved in order to provide comprehensive inputs for formulating AI policy. This study also suggests that attention should be paid to issues of governance as well as security and privacy.

Objective of this study: This study aims to know the future of Artificial Intelligence in India and to find the utilization of Artificial Intelligence in various sectors.

Research Methodology and Data Collection: To find out the position of Artificial Intelligence in an upcoming era in India's different sectors by assembling a study on the future of AI in digital India. The applicable, structured, and specified methodology have been used. And for the analysis of the objectives, secondary and qualitative data have been used for this study through various articles, newspapers, research papers, journals, e-books, e-magazines, and corporate websites.

Findings: In the present time, artificial intelligence is evolving in every industry, non-profit organization, and business; whether the company or organization is enormous in size or small category, it is present there in many forms. Artificial intelligence (AI), one of the most significant technological developments in recent years, is expected to change how companies and industries operate widely. Although AI is still a relatively new technology, billions of dollars are spent yearly on its research and development, accelerating its acceptance in various industries. Investment in AI is expected to surpass **$500 billion by 2024**.

Figure 1: A proposed model of usability of AI in various industries

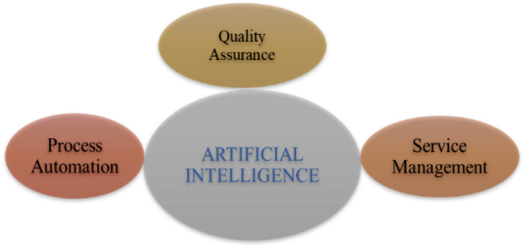


These are a few industries that are using Artificial Intelligence in their industry and are most affected by AI:-

Information Technology: Imitating human intelligence functions by machines, particularly computer systems, is referred to as artificial intelligence. Expert systems, natural language processing, speech recognition, and machine vision are some specific uses of AI.

- Using AI technologies, information technology systems are improved to carry out operations as efficiently as possible. The IT sector can scale its IT functionalities by converting its systems into intelligent versions using AI. The primary functions of artificial intelligence in information technology are automation and optimization.
- The concept of AI in IT determines the future and everything it holds. Not only has AI revolutionized conventional computing techniques, but it has also penetrated other industries and profoundly changed them. IT organizations must keep up with rising process complexity and fast innovations as the world gets more digitized and all industries become much brighter.
- In the IT sector, AI-driven programs are used primarily in three areas: process automation, service management, and quality assurance.

Figure 2: AI Applications in IT



- **Finance:** Since AI can more accurately predict and

evaluate loan risks, it is very useful in corporate finance. AI innovations like machine learning can enhance loan underwriting and lower financial risk for businesses wanting to grow their value."According to a study, **83% of Indian financial institutions** say Artificial Intelligence improves the customer experience." Al was primarily embraced by the financial services industry for use in operations involving Know Your Customer (KYC), Anti-Money Laundering (AML), and Fraud Detection.

Here are the few ways that Al is used in the financial sector:

- **Credit Scoring:** AI is an excellent way to improve credit scoring by leveraging more data to provide an individual credit score based on characteristics including current income, employment opportunities, recent credit history, and earning potential in addition to previous credit history.
- **Cost Reduction:** By automating repetitive procedures, businesses can save time and resources while allowing people to concentrate on more strategic goals. Moreover, automation promotes uniformity and reduces errors, which improves decision-making and the customer experience.
- **Risk Management:**AI/ML has come to represent cost-effectively increasing productivity and efficiency in risk management. This has been made feasible by the technologies' ability to process and analyze huge amounts of unstructured data more quickly and with a lot less human involvement. AI evaluates unstructured data about potentially risky procedures or actions. AI systems are able to identify behavioral patterns linked to earlier occurrences and transform them into warning signs of danger.
- **Financial Advice:** AI ensures logical, data-driven decision-making and assists managers in managing investment portfolios. As a result, long-term investment profitability is raised.
- **Marketing:** In the present time the use Artificial Intelligence in marketing is most significant application in marketing. Artificial intelligence is a major factor in creating more seamless consumer experiences, is assisting marketers in predicting what their customers want. AI is crucial in marketing efforts and is frequently utilized in situations when speed is crucial. AI solutions leverage data and customer profiles to offer personalized messages to customers at the appropriate times, ensuring the highest level of efficiency while avoiding the involvement of marketing team people.
- **Several business experts already think that by 2025**, the modern marketer will no longer exist. In light of this, it's possible that marketers' abilities will be put to the test. In order to function successfully with AI systems, recruiters may even insist that marketers have some amount of experience in pattern recognition, planning, and coding.
    - Artificial intelligence is applied in marketing to automate and improve the sales process. Software tools that contain trainable algorithms that handle huge datasets are used for this. Teams can market more effectively and save time with the aid of AI solutions. Executing particular duties and decision-making processes.
- **Banking:**The use of advanced data analytics by artificial intelligence will transform banking in the future by reducing fraud and enhancing compliance. The replacement of human intellectual power by technology, particularly computer systems. Artificial intelligence is used almost everywhere today, and it may be advantageous for everyone from front-line officers to middle and back offices.
    - "The Indian banking system is far better and more controlled. According to the data, public sector banks had assets worth **US$1.52 trillion** in the **2020 fiscal year**. Also, during **FY16 to FY20**, **bank loans increased at a CAGR of 3.57%.** The entire amount of credit extended as of **FY2020 was $1,698.97 billion.** The adoption of artificial intelligence will continue to develop, enabling a digital financial infrastructure as the nation's banking environment expands unceasingly.
    - According to Business Insider research, around **80% of banks** are aware of the potential advantages AI could bring to their industry. According to another estimate, banks are expected to save **$447 billion** by utilizing AI apps by **2023.** These figures show that the banking and finance industry is moving quickly towards AI in order to increase production, decrease expenses, and improve efficiency.
    - Use of Artificial Intelligence in the banking sector in various ways like cyber-security, chatbot, credit-risk analysis, fraud detection, and customer satisfaction.
- **Healthcare**: Artificial intelligence (AI) has made a significant impact on the healthcare industry, changing how we identify, treat, and monitor patients. By enabling more individualized therapies and delivering more precise diagnoses, this technology is significantly enhancing healthcare research and outcomes.AI algorithms are now being used in healthcare for early disease identification, drug development trials, accurate patient monitoring, and self-care. "According to statistics, India would invest **US$11.78 billion** in its **primary sector AI by 2025**, increasing its **GDP by US$1 trillion by 2035**".
    - It all originated with IBM's Watson artificial intelligence system, which was created to provide precise and speedy answers to questions. Natural language processing, the technology used to comprehend and decipher human communication, was the subject of IBM's unveiling of a healthcare-specific version of Watson in 2011. This event is mentioned in articles on artificial intelligence in healthcare. Together with IBM, other tech behemoths like Apple, Microsoft, and Amazon are now spending more and more in AI-based healthcare technologies.
    - Machine learning and Deep learning, part of

Artificial Intelligence both are present in the healthcare technology.

- There is no doubt that the use of artificial intelligence in healthcare has a bright future and is full of opportunities for new innovations. The use of AI in the healthcare sector will develop into a priceless resource as we go into a more interconnected digital world. This might potentially transform how doctors treat patients and provide care. It is obvious that utilizing artificial intelligence in healthcare has the promise of a future full of innovations, better health outcomes, and better patient experiences given its enormous potential.

- **Transport:** Among the key sectors now impacted by Artificial Intelligence is transportation. Becauseof businesses like Tesla and Waymo, self-driving cars are already starting to become more common. Although drivers are still required to operate the existing versions, fully autonomous vehicles are increasingly likely to be deployed as hardware advances. Self-driving is anticipated to increase from **31 million in 2019 to 54 million by 2023.**
- AI is without a doubt the most incredible technology ever created by civilization, but as with every amazing creation that makes life easier for humans, it can be seen that, up to this point, AI has not been used to its full potential and that many things still need to be investigated. The use of AI in transportation that is discussed in this article just offers a small sample of the options and potential that technology may bring to the field of transportation in the future. AI-powered transportation will be fascinating and will be geared toward resolving long-standing transportation issues.

2. CONCLUSION

Businesses and consumers will probably agree on how fast and enthusiastically they should adopt and integrate the new applications and workflows originating from Artificial Intelligence, which is assured to bring about a revolution in the commercial landscape. Businesses will need to collect the necessary data, manage training procedures, and fine-tune outputs, especially during the early phases.Businesses and society will need to reconsider skill sets as manual labor is automated and shift from procedural to higher-involvement strategic work with a stronger emphasis on creativity, adaptability, and an outcome-oriented mindset. We can see the effect of Artificial Intelligence in every sector in India. It is growing day by day in every field weather it is banking sector where many banks introduce and launched their robots, Chatbot's,and many applications for the better and fast services, finance sector- Corporate finance benefits greatly from AI since it can more accurately identify and evaluate credit risks. Machine learning and other AI technologies can enhance loan underwriting and lower financial risk for businesses wanting to raise their value.Healthcare industry- by extensive data analysis, AI enables healthcare providers to better understand the trends and demands of their patients. Medical professionals will be able to offer better direction, assistance, and feedback as technology advances and new medical applications are found. transportation or in marketing it's evolving everywhere and giving the industry drastic boom, Artificial intelligence (AI) is becoming more than just a futuristic notion; it is a component of daily life that we utilize without even realizing it. Our smartphone apps, social media feeds, and Grammarly's grammar checker are all examples of artificial intelligence in action. While certain AI solutions have already been utilized in the transportation sector for a while, it won't be long before AI is increasingly used in logistics and transportation. It's only a matter of time before we experience the wonderful future that AI is driving, as it is becoming more subtle with time.

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A STUDY ON THE IMPACT OF DIGITAL MARKETING ON CUSTOMER ACQUISITION AND RETENTION

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ABSTRACT

In the digital age, businesses have undergone a significant transformation in the way they attract and retain customers. This abstract provides an overview of the research on the impact of digital marketing on customer acquisition and retention. Customer acquisition is the process of identifying and attracting new customers to a business, while customer retention involves keeping existing customers engaged and satisfied. Digital marketing encompasses a wide range of online channels and techniques, such as social media, email marketing, content marketing, search engine optimization (SEO), pay-per-click advertising (PPC), and more. This study explores how businesses leverage these digital marketing tools to influence customer behaviour. The research shows that digital marketing has a profound impact on both customer acquisition and retention. It allows businesses to reach a wider and more diverse audience through various online platforms. The ability to instantly analyse customer data and behaviour allows companies to adjust their marketing efforts to make them more relevant to customers. Personalization is a key driver of customer acquisition and retention because it improves customer experience and increases loyalty. Through this study, we also explore the importance of content marketing and its role in delivering important content and information to customers. Engaging content not only attracts new customers but also keeps existing customers interested.

Keywords: Customer Acquisition, Retention, PPC Advertising, SEO, Personalization etc

1. INTRODUCTION

The study also explores the role of data analysis and marketing automation in digital marketing. This technology helps businesses track and measure the effectiveness of their strategies, allowing them to quickly adapt and adjust their approach. This data-driven approach improves customer acquisition and retention. In short, digital marketing has a huge impact on customer acquisition and retention. It is changing the way businesses connect with their target audiences by delivering personalized, effective and data-driven insights. As the digital landscape continues to evolve, businesses that leverage the power of digital marketing are better able to acquire and retain customers, ultimately helping them achieve long-term.

Strategic marketing is being disrupted by the fast-evolving field of digital marketing. scenery. The main cause of this is the change in consumer behaviour wherein people now spend a lot of percentage of their awake time on the internet. Digital media platforms offer a multitude of user data, immediate feedback, and direct engagement, in contrast to traditional media channels. But the majority of the digital space is still unsophisticated leading to cluttered websites and poor user engagement. Because the digital environment is still underdeveloped, user engagement is low and websites are congested.

Source-Google images.com

Even with the wealth of target ability data, the quantity of online advertisements, and the chance to interact with users, In these new channels, businesses have found it difficult to increase marketing efficiency.

One area of rapid innovation is the movement of digital advertising to programmatic bidding. This has created a

new ecosystem of firms that transact, track, and target users at the impression level. Advertisers now need to evaluate individual digital ads spaces in under a second and optimally place their ads in a wildly unpredictable environment. Another area of innovation is experimentation in digital loyalty programs. These loyalty programs are also becoming an essential part of mobile advertising and modern sales promotions as marketers continue to find new ways to engage customers. These innovations continue to advance at a rapid pace despite the lack of evidence to support the formation of digital loyalty programs.

These loyalty programs are also becoming an essential part of mobile advertising and modern sales promotions as marketers continue to find new ways to engage customers. These innovations continue to advance at a rapid pace despite the lack of evidence to support the formation of digital loyalty programs. By empirical analysis of these emerging trends, this study contributes to digital advertising and customer relationship management literature. Most recent research has shifted the focus to later funnel activities as they assume that all advertising is equally likely to be targeted or that there will be periodic random distribution of attention.

2. MAJOR COMPONENTS OF DIGITAL MARKETING

Source-Google images.com

The major components of digital marketing are:

- **Search engine optimization (SEO):** SEO is the process of optimizing website and content so that it ranks higher in search engine results pages (SERPs). This can help to reach more potential customers who are already searching for the products or services offered
- **Pay-per-click (PPC) advertising:** PPC advertising is a type of online advertising where you pay a fee each time someone clicks on your ad. PPC ads can appear in SERPs as well as on other websites across the internet.
- **Social media marketing:** Social media marketing involves using social media platforms such as Facebook, Twitter, and Instagram to connect with and engage potential and existing customers.
- **Content marketing:** Content marketing is the process of creating and distributing valuable, relevant, and consistent content to attract and retain a clearly defined audience and drive profitable customer action. Content can take many forms, such as blog posts, articles, infographics, videos, and e-books.
- **Email marketing:** Email marketing involves sending email messages to subscribers who have given you permission to do so. Email marketing can be used to promote your products or services, stay in touch with customers, and build relationships.

Other important components of digital marketing include:

- **Mobile marketing:** Mobile marketing involves targeting your marketing messages to mobile devices, such as smartphones and tablets. Mobile marketing can take many forms, such as SMS marketing, push notifications, and mobile-optimized websites and apps.
- **Affiliate marketing:** Affiliate marketing is a type of performance-based marketing where you pay affiliates a commission for each customer they refer to you.
- **Influencer marketing:** Influencer marketing involves partnering with social media influencers to promote your products or services to their followers.
- **Video marketing:** Video marketing involves using videos to promote your products or services. Videos can be shared on social media, your website, and other online platforms.
- **Web analytics:** Web analytics is the process of collecting and analysing data about your website traffic and visitors. This data can be used to improve your website and marketing campaigns.

These are just some of the major components of digital marketing. There are many other strategies and tactics that you can use to reach your target audience and achieve your marketing goals.

Which digital marketing components are right for your business will depend on your budget, industry, and target audience. It's important to experiment with different strategies and see what works best for your business.

3. OBJECTIVES OF THE STUDY

- Investigate the digital marketing strategies used for customer acquisition and to determine their success rates
- Evaluate the digital marketing techniques employed to retain customers, including personalized email marketing, loyalty programs, and customer engagement through social media.
- Calculate the return on investment for different digital marketing strategies and their impact on customer

acquisition and retention.
- Determine the key performance indicators (KPIs) that are most relevant to assessing the impact of digital marketing on customer acquisition and retention.
- Investigate emerging trends in digital marketing, such as AI-driven personalization, Chatbot's and interactive content, to understand their potential impact on customer acquisition and retention.

4. LITERATURE REVIEW

This literature review is being taken from Harvard Business School and is written by Michael Els.

Digital marketing has become an essential part of any business strategy, and its impact on customer retention and acquisition is well-documented. A comprehensive literature review reveals that digital marketing can have a significant positive effect on both customer retention and acquisition.

Customer Retention

Digital marketing can help businesses retain customers by:
- **Building relationships with customers:** Digital marketing channels such as social media and email allow businesses to communicate with customers on a more personal level. This can help to build relationships and trust, which can lead to increased customer loyalty.
- **Providing value to customers:** Digital marketing can be used to provide customers with valuable content and information. This can help to keep customers engaged and interested in the brand, which can lead to increased retention.
- **Offering personalized experiences:** Digital marketing allows businesses to track and analyse customer behaviour. This information can be used to offer customers personalized experiences, such as targeted recommendations and offers. This can help to make customers feel valued and appreciated, which can lead to increased retention.

Customer Acquisition

Digital marketing can help businesses acquire customers by:
- **Reaching new customers:** Digital marketing channels such as search engine optimization (SEO) and pay-per-click (PPC) advertising can help businesses reach new customers who are already searching for their products or services online.
- **Targeting the right customers:** Digital marketing allows businesses to target their marketing messages to specific demographics and interests. This can help businesses to reach the customers who are most likely to be interested in their products or services.
- **Measuring results:** Digital marketing campaigns can be easily tracked and measured. This allows businesses to see what is working and what is not, so they can make adjustments to their campaigns as needed.

Research Methodology

Purpose of this research was to understand the changing scenario of marketing and its impact on customer preferences, loyalty and retention due to the advent and immense usage of technology. To study this a secondary study was done and main focus was literature from Harvard study and small case lets. Totally based on non-probability convenience sampling. Further this study will be conducted empirically with a questionnaire and an industry segment to enhance the secondary study data.

Research Findings

A number of studies have found that digital marketing has a positive impact on customer retention and acquisition. For example, a study by McKinsey found that companies that use digital marketing to effectively engage with customers grow their revenue twice as fast as those that don't. Another study by Gartner found that 89% of marketers say that digital marketing has a positive impact on customer retention.

Case Studies

Here are a few examples of businesses that have used digital marketing to successfully retain and acquire customers:
- **Amazon:** Amazon uses a variety of digital marketing strategies to retain and acquire customers, including personalized recommendations, targeted advertising, and social media engagement.
- **Starbucks:** Starbucks uses its mobile app to offer customers personalized rewards and promotions. The app also allows customers to order and pay for their drinks ahead of time, which can save them time and make them more likely to return.
- **Netflix:** Netflix uses data analytics to personalize its recommendations for each user. This helps Netflix to keep users engaged and coming back for more.

5. CONCLUSION

The literature review and case studies above show that digital marketing can have a significant positive impact on customer retention and acquisition. Businesses that use digital marketing effectively can reach new customers, build relationships with existing customers, and provide personalized experiences that can lead to increased loyalty and repeat business.

Digital marketing has had a profound impact on customer retention and acquisition. By leveraging digital channels, businesses can reach new customers, build relationships with existing customers, and provide personalized experiences that can lead to increased loyalty and repeat business.

Here are some of the key conclusions of the literature review and case studies presented above:
- Digital marketing can help businesses retain customers by providing value, building relationships, and offering personalized experiences.
- Digital marketing can help businesses acquire customers by reaching new customers, targeting the right customers, and measuring results.
- Companies that use digital marketing to effectively engage with customers grow their revenue twice as fast

as those that don't.

- 89% of marketers say that digital marketing has a positive impact on customer retention.
- Successful businesses such as Amazon, Starbucks, and Netflix use digital marketing to retain and acquire customers.

Overall, the evidence is clear: digital marketing is a powerful tool that can help businesses achieve their customer retention and acquisition goals.

Recommendations

Businesses of all sizes can benefit from investing in digital marketing. Here are a few recommendations for getting started:

- Identify your target audience and understand their needs and wants.
- Choose the right digital marketing channels for your business.
- Create high-quality content that is relevant and valuable to your target audience.
- Use data analytics to track and measure your results.
- Optimize your campaigns over time.

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UPGRADING CREATIVITY IN DIGITAL BUSINESS

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ABSTRACT

Creativity has become one of the most significant driving factors of today's digital business environs. Businesses are progressivelybeholding for creative employees who can propose new and out-of-the-box resolutions to prevailing problems. Companies go through the procedure of digital transformation by gradually changing the ways in which they engage digital technologies and cultivate new digital business models that help to generate and to capture importance. Combined with aimaginativetactic, companies have experienced a rush in creative digital resolutions. However, the creative procedure is not a self-perpetuating appliance. It must be introduced and reinforced by organizations. This is done by being consideratetowards the inventive process itself and by making small but fruitful alterations to the work environment and the overall management of the workforce. As two chosen real-life examples will illustrate, such tactic results in releasing powerful creative vigour that offers new services to the market, new styles to solve existing problems, or as seen in the case of Uber —bringing in anentirely new business model based on inspired solutions and innovative approaches to diverse aspects of business operations.

Keywords: Digital Creativity, Entrepreneurship, Digital Business

1. INTRODUCTION

Digital Transformation and Creativity: At the onset, we would like to sketch the course of digital transformation and the growing importance of creativity in the new digital age. Our economy is renovating, and the ways in which we generate, communicate, work and team up are changing. Today's society and business scenes are characterized by trends such as persistent connectivity, enhanced performance of information technologies, data abundance, and emergence of big data. Accordingly, digital transformation and new business prototypes have also altered consumers' expectations imposing force on traditional companies. In this new digital age, creativity and novelty play an important role in creating worth for businesses. Although creativity and novelty have always been vital, their nature is changing in the digital business context. Race between companies is now not only based on the class of products or efficacy in satisfying consumer needs but rather how inventive products are, how well they are designed and how well they resolve a consumer problem in anartistic manner.

This becomes especially imperative as digital transformation cuts across industry precincts. Competitors are not only traditional companies in abusiness, but also digital companies who are using their digital means to enter the new bazaars. New digital businesses are one of the instances of the digital transformation era. In line with this, the conduct of customers is also varying. They often turn out to be co-producers of the products through, for instance, crowdsourcing drives. Furthermore, their expectations have transformed. Consumers have the purpose to acquire and have access to products and services in an informal and more expedient way than ever before. They want to order products online and collect them the next day; this is resulting in a growing trend for electronic commerce. For example, 69% of Internet handlers in the European Union do the shopping online in 2018. Changes like this are creating the modification in the economy, and companies need to normalize this or they often go insolvent. And platforms, identical to Netflix, are altering industries, driving big players such as Blockbuster to insolvency.

Due to these fluctuations in the economy, the workforce is also affected and must amend. Employers now necessitate employees to have diverse skills than before. It seems no longer to be significant how much employees know, but relatively how well they can apply their understanding. In the digital era, skills that are essential are higher-order thinking and resourceful problem solving, as companies all the time more depend on the creation of new products, services, and processes in order to remain viable. These abilities rely on the fact that we must find sense or patterns in big data. We have to be creative and find comprehensions that will help to solve problems in a different way than usual. For example, big data can be used as a digital strength in order to distinguish products and services. This implies that the digital age is in a way extension and amplification of the twentieth-century knowledge age. In an increasingly shifting environment enabled by digital transformation, creative problem solving becomes of utmost prominence in regard to problem solving and discovering new entrepreneurial prospects. Creativity and critical thinking are not only imperative today but also anticipated to be the skills in most demand in the future.

2. THE BACKGROUND ON CREATIVITY AND DIGITAL BUSINESS

Creativity defined: Before we can start linking creativity to digital transformation, we need to describe what creativity is and why it is significant. Simply defined, creativity is the deed of turning new and ingenious ideas into certainty. According to Amabile (1988), it spreads over to both idea generation and tricky solutions. However,

Amabile et al. (2005) also highlights that these ideas should not only be innovative but also valuable. In the context of establishments and offices, creativity is seen as the making of new and useful products, services, and processes by employees. Creative people have the ability to observe the world in new ways, to find unseen patterns and find acquaintances between unconnected issues. This all makes it probable to create new solutions. Creativity should not be understood only as a practise of art or an idea. Those are results of a creative process. If an idea is useful, it is pertinent to the task it needs to be solved. When an idea is matchless, it is diverse from other ideas and not practised before. To be creative, it is imperative to not stop at a useful idea. Most people can come up with this. The hard part is to be thoughtful and creating an idea that is exceptional. The creative process takes time and persistence, especially to acquire the art of being creative. With creativity, there is no guarantee that you come up with new, imaginative ideas every time that is suitable for your venture. So, the creative process is assured but the consequences are not.

In addition, research has shown that there may be unlike types of creativity. The types of creativity are based on either emotional or reasoning and spontaneous or deliberate:

'Thomas Edison' type of creativity: It is called Thomas Edison because he ran experiment after experiment before he came up with adiscovery.

- Based on measured and cognitive.
- Comes from nonstop work.
- Implies placing together existing data in new ways.

"Aha moments" type of creativity:

- Based on extravagant but emotional parts.
- "Aha moments" have to do with the sentiments and feelings and are not uninterruptedly focusing on one work.

"Isaac Newton Eureka flashes" kind of creativity:

- Occurs abruptly.
- Impulsive and cognitive creativity.
- It implies working on a trickyissue for a long time and not be able to find solutions. Then when doing something else, flash-insight ascends with a key to the problem.

"Epiphanies" type of creativity:

- Impulsive and emotional type.
- Mostly used by choirs and artists.
- It is not cognitive, but mostly a talent is needed to accomplish this kind of creativity such as playing guitar or writing expertise.

Another type of categorization of creativity concerns the type of people and the attitude towards creativity. This is also applicable as people are very different in the level of creativity and in the manner of which they express creativity. In this respect, we can split people into adaptors and innovators.

Adaptors are people who are trying to mend things within the general system. They are trying to discover ways to do things in improvedmanner and more efficiently. Adaptors often work in professions that have steadiness and order. They relate ideas they have to the problem they have and affect persistence in this. They could be somewhat linked to the abuse process described by March (1991). He pronounces the process of exploitation as focused on refinement, efficiency, selection, and implementation.

The second type of creative person is **innovator**. They like to do things otherwise than ordinary businesses and people do it. Innovators dare the status quo. They often come up with radical changes and strategies, whereas adaptors like to do things better, and innovators like to do things in a different way. The ideas that innovators come up with are often linked to fetching new elements to the problems and altering the formulation of the problem. Same as with adaptors, the role of innovators can be linked to March's (1991) process of exploration, which is focused on notions such as risk-taking, discovery, and innovation. Although people can be regarded as into these two groups, there are some other aspects that both groups should have to be active in creating creative explanations for problems. Some of the most imperative ones are motivation, curiosity, and social networks. Specifically, motivation represents a decisive part of creativity. Motivation is the measure of emotional venture that makes people break with the old condition and move on a course with a situation that they want. This desire to move to something new starts the course of creativity. Creativity does not grow in people's minds but in the interface between people's thoughts and a sociocultural framework. For example, supportive command and the perception that an employee's supervisor is supportive of new ideas have always been chief condition for creativity. Furthermore, a constructive peer group and the involvement of others within the company are also essential requirements for employees to outclass at creativity.

Digital Business defined: Due to new technological revolutions, new methods of steering business, relating, and collaborating have been established. The new technologies, such as social media, are building channels between people, which makes joining with each other much easier. Digital technologies also have confronted companies driving them to uninterruptedly innovate in order to accomplish competitiveness in this new landscape as business models advance and companies practicemassive pressure to stay on track. Business models have transformed, and companies are confronted to keep up. Digital business is about the formation of new value chains and business openings that traditional businesses cannot deal. It is the creation of new businesses where the lines between digital and physical worlds are hazy or not even observable. For example, most start-ups these days are digital businesses that unravel a problem or have anexplanation to make day-to-day tasks stress-free and more appropriate. Examples of digital start-ups that have become efficacious are companies such as Rapido, which makes it relaxed to go to places for a lesser price than conventional cabs; or OYO, which makes

available a place for people who want to lease their rooms and people who are consideringrenting a house for the vacation or other commitments. Equally these businesses are digital businesses and do not have any physical products. Wirtz (2018) defines digital business as the instigation, transaction, and preservation of the service exchange process between economic allies through information technology. Some of the most imperative elements in the digital business are mobile technologies, social media platforms, analytics, and cloud computing technologies. Some instances that make these of key prominence for digital business are that mCommerce has agrowing part in the total of electronic commerce, social media platforms such as LinkedIn and Facebook have improved the ways in which people meet and collaborate and big data analytics empower businesses to reveal hidden patterns, which lead to lessening of costs and better judgment making. Overall, the digital business helps to abolishobstacles that now exist among industry segments while forming new value chains and business openings that traditional businesses cannot bid. Taken together, digital businesses contribute to the hypercompetitive digital economy. With hypercompetition, no competitive advantage is workable in the long term, which underlines a need for businesses and individuals to be artistic and continuously reinvent and transform.

3. 3. TOWARDS DIGITAL CREATIVITY - HOW IS CREATIVITY RELATED TO DIGITAL BUSINESS IDEAS?

For the purpose of this chapter, we define digital creativity approximately as all forms of creativity focused by digital technologies. Understanding and embracing digital innovation have become more imperative for existing businesses. For example, banks need to keep up with the state-of-the-art financial technology to retain being relevant for customers and universities need to alter the way they teach students. Keeping up-to-date with the latest digital innovations is not easy, and creativity plays an essential role in this adapting stage. Digital innovations want individuals who are thinking contrarily and can modify the business. Innovators are fundamental for evolving new digital innovations that will retain businesses up-to-date with the latest trends. The creative process of digital innovations is a controlledroute that needs leadership and a clear goal. People need to reflectin a different way about the possibilities and impossibilities of new technologies. In addition to this, it is important for companies to embrace the creative practice and look for new openings as well as possibilities. In today's world, creativity can streamline the creation of worth, and therefore, it is avital aspect for companies. Due to the fact that the world is shifting and is becoming more digital, customers assume this from companies as well. The customer wishes to do everything online, and therefore, companies have to bend. With this modification, creativity plays an important role. But how does a manager create worth for customers and what makes it diverse from other companies? Companies should be creative and innovative in the way they acclimatize to the digital business age because it can generate a lot of worth for the company. Companies who stay behind will drop customers and ultimately will not persist. Thus, companies have to concentrate on the digital age and deliver creative and state-of-the-artresolutions for prevailing problems that conservative companies cannot solve. Although creativity has been customarily regarded as a key in search for advanced ways for breeding revenues, it is especially imperative in the age of digitalization. Digitalization surges the importance of business liveliness and speed to market, and it has been proposed to pay consideration between digitalization and creativity. Digitalization enables individuals to have access to the Internet and other technologies anytime and anywhere consenting them to arouse their creative thinking. Given that the employees can accomplish creative products through communication and association, the link to digitalization kindles the creative process in the creation of new digital businesses.

4. HOW CAN ORGANIZATIONS DEVELOP AND STRENGTHEN DIGITAL CREATIVITY?

Digital creativity in businesses can be reinforced mostly due to the culture that lies within a company. Creativity and creative thinking should be reinvigorated; even if mistakes happen, employees should be motivated to further chase their creative tactic. As already pointed out, encouragement is needed for a creative mind-set. The place of work should reassure inspiration and therefore offer an atmosphere that is enhancing inspiration. Some of the traditional ways on how businesses should lift creativity can also be applied to the digital context as follows:

- **Search for new experiences and viewpoints:** Deliberations with people from different departments, employed with clients from diverse industries, or getting help from non-profit organizations. This helps in judgmentally approaching definite problems and develops creative solutions.
- **Spending time to think about new ideas daily:** Even if it is only for 15–20 min, it will benefit with the creative process because entities are aware of the time they spend on conveying up new ideas. Removing from daily routines has anoptimistic effect on discovering new ways of answeringexplicit issues.
- **Making weekly goals:** Planning how many philosophies one wants to come up with and stick to them. In this way, one will be driven to keep the creative brainstorming sessions beneficial. However, Rogers (2016) suggests a more precise enabler for digital creativity and transformation, specifically rapid experimentation. In particular, he proposes that the firms must alter their strategic expectations from those that apply to the analog era to those that apply to the digital age. These apprehensions being able to make verdicts based on taxing and authenticating rather than on perception, considering that the testing ideas can be done in aninexpensive, fast, and relaxed way rather than seeing it as an expensive, sluggish, and tough process, piloting experiments constantly by everyone and not only by professionals infrequently, and focusing on least viable prototypes and repetitions after

lunch and only focusing on 'finished' product. Finally, an employer wants to promote creativity by creating a work atmosphere where effort and failure are appreciated and not penalized. It takes brave and open-minded employees to originate with new thoughts and pitch them to supervisors; therefore, respect is highly essential even when an idea does not seem to be great. Employees should feel inspired to find another idea or progress the existing one. In cases where employees are being penalized for erroneous efforts (ideas), a decline in motivation may result in lesser creativity and even inferior ideas.

5. CRITICAL PERSPECTIVE ON DIGITAL CREATIVITY

Digital creativity can bring a surplus of positive results regarding business notions and solutions for current problems. However, there are several contests regarding the creative procedure of companies. The main issue is the fact that the transition to a more creative economy carries substantial costs for an existing business. Businesses have to keep up with the newest revolutions to keep challenging with new start-ups which habitually appear with creative resolutions for an existing problem. Creative people are a good strength to the company; however, people are appointed to work. If they do not provide what they are hired for but keep coming up with new ideas, companies will not run efficiently and work will not be done. In addition to this, one cannot continuously apply new ideas. Sometimes, it seems best to first emphasize on one new idea and then after it has been applied or refused, to look for additional innovations. Another point is that not all ideas or innovations are beneficial. Therefore, it is important to have a good look at which innovations need to be executed and which are not worth the time and money. A good operational system to decide which innovations are relevant can save a lot of money and time for the company. If companies concentrate on an innovation that is not appropriate and does not add any value to the company, they can lose the competition with other companies who choose another innovation. Sometimes it is better to be watchful with the company's verdicts and not take high jeopardies. When there is economic insecurity, it might be better to not implement creative ideas with the risk that they will nose-dive and escalate costs. In such situations, it might be better to be alert and not trial with creativity (too much). A more in-depth risk of executing creative and innovative ideas is that a certain idea or project takes too long to implement. This is a very exorbitant occurrence, and businesses can run out of money which results in collapse risk for the business. This can cause snags with the future survival of the company. The new innovative product can face the fact that it is more tough to produce and therefore not produced on a large scale which results in higher production costs. The return on investment is not guaranteed which then can anger investors and stakeholders. Another shortcoming of innovative products is that class can be acknowledged as humble and then injures the status of the whole company. This has penalties not only for that product but also for the concern. The company can be confronting lower sales levels which then would touch the fiscal position of the company. Multiple examples of innovation went mistaken. But two types of innovations went wrong. One is a novel product or service that was not established well by the bazaar. The second is the lack of innovation in which companies remained behind their contestants which caused in a loss of market share. When this occurred, it is usually too late to catch up.

A good example of anunsuccessful innovation is **Google Glass.** This creation was established by Google in 2014. It was supposed to be a great novelty with a computer that was always on and always provided real-time information. It exhibited information in a smartphone-like way, and it was also hands-free. Wearers could interconnect via voice commands and so command Google Glass to implement commands. When Google started marketing the glasses, it got noteworthy criticism, where the chief critique was that it disrupted privacy laws. After the condemnation and the fact that it collapsed, Google announced it to stop the manufacturing of the glasses in 2015. In 2017, they again started with the fabrication with an adjusted form but this time more concentrated on usage within companies and in the medical sector.

Another one of the world's most famous examples of fiasco to innovate and therefore trailing the whole market is **Nokia**. This mobile phone brand declined to make the innovative jump from phones to smartphones. Nokia was the best-selling phone make in the world. When Apple became a serious competitor of Nokia, it failed to retort properly. The technological innovations of Nokia were nothing equated to those of Apple. The top managers were big-headed and refused to modify their strategy and capitalize more in innovation. The failure of Nokia can not only be allocated to not modernizing well enough because there were many inner problems within the company. The administrative structures were dysfunctional and managers were opposing and frustrating each other. This was the ground for the poor tactical decisions the company made. For example, they used an operating platform for their smartphones called Symbian. At the opening of smartphones, this operating system gave Nokia an advantage but ultimately caused postponements because for every different phone new code had to be established and tested. The management was besieged with finding proper answers and made critical strategic blunders. Software was becoming more imperative in the smartphone market than hardware. Due to the scuffles with the operating system Symbian, Nokia could not keep up with this alteration and lagged. Additionally, the applications became more significant but Nokia lacked the skills to grow these applications and struggled again with keeping up with their opponents. By 2010, it became clear that Nokia had fallen behind due to the usage of its operating system and the absence of skills to advance applications. Nokia squandered these innovations and stood still in a swiftlyshifting and developing market.

6. CONCEPTUAL MODEL

Digital Creativity Process: The creativity process consists of five different stages, with each of them having a discrete length. Contingent on the organization, this process can be transformed, but it usually does go through all these phases. Some of the phases can even happen concurrently, such as immersion and gestation. Leaps from one phase to the next are sometimes problematic to differentiate as lines between different stages are not always clear, such as between incubation and vision. The stages in the creativity process are as follows:

- **Problem Recognition -** When facing trials in the digital business environment, both organizations, as well as employees, start a problem-resolution practice. This phase infersbearing in mind the challenge and opening a creative procedure whose final yield is a solution for the developing issue. In terms of the digital business environment, this is an often happening process; in fact, the digital business environment is a trial in its own right, and most of the digital businesses began actually as responses to these challenges. It is furthervital to stress that in terms of beginning the creative course, it is highly vital that the emerging problem is being advanced as abreak and not as a menace. That leads to creativity being unleashed to its fullest extent. It must also be noted that 'setbacks' in digital business are not necessarily circumstances that represent an obstacle. It might well be those common situations, happenings, operations, etc., in the real world that characterize a valuable territory for creative digital resolutions.
- **Immersion -** After the challenge has been noticed and demarcated, even vaguely, employees will start to gather evidence to be able to tactic the issue from different angles. By doing so, they probe deeper into understanding the challenge. This is a critical phase as it not only helps to comprehend the challenge from different viewpoints but also proximatelystarts possible solutions. Digital creative explanations are in most cases fixated on finding IT solutions; however, there has been a minor shift from finding pure IT solutions to create solutions that are concentrated on finding the more contented, artistic, fast, or easiest option.
- **Incubation -** Accumulating information to embrace all aspects of a task does not go on forever. When the point of fullness has been gotten, creative minds usually stop assembling information and even stop thinking about it. Usually, they engage in completely different activities, the ones that are not linked to the challenge. Employees would be well instructed to stop thinking about the new app they are presently trying to advance, or about the possible solution to the defined IT problem. By 'cooling down' the mind, employees move from an active to a passive state of finding a solution. Namely, the mission of finding a solution with all the assembled data is assigned to the sub-consciousness, which keeps working even during the state of mind's rest. This is the reason why most companies nowadays, particularly IT companies, vigorously support employees in taking time off and resting their minds and bodies. By helping them take the burden from everyday activities at work, the room is made for creativity.
- **Insight** - It is exactly in flashes of rest when suddenly solutions to prevailing challenges ascend from the subconscious to the conscious level. Therefore, creative minds, such as artists, copywriters, and designers, typically have small books by their side, or apps to help them catch abrupt ideas and insights. This phase is also called the 'Aha!' or 'Eureka' moment, as it is categorized by a sudden surge of solution. As we live in times of handy devices that offer the chance to implement the newly occurred idea instantaneously, it is no surprise that a sharp rise in experimentation and execution of newly emerged digital ideas has been noted.
- **Verification and application -** Finally the creative key needs to be tested— does it work? Does it need amodification? Aspeedy upgrade? Due to its nature, digital business is predominantly prone to these instantaneous and immediate tests. It is significant to note that such tests often lead to developing of additional challenges or problems. This sparks the creative process again, starting with the first phase— problem recognition. This is the reason why the creative process has been portrayed in this chapter as a circle, without a conclusive beginning and end.

Boosting Creativity in Digital Businesses: Forsustenance of creativity in digital businesses, companies have several deliberate tools at their disposal.

- **Diversity -** It has been for decades now that companies have comprehended that diversity unbolts new means for creativity. Diversity in organizational culture fetches in new attitudes, renewed insights, and diverse, sometimes even improbablestandpoints to prevailing problems. Seen through the lens of creativity, for digital businesses nowadays this infers a set of different elucidations to one prevailing problem.
- **Breaks -** As discussed in the subdivision on the creative process, rest plays akeyrole in supporting the creative practise. Forceful creativity to the edge can and often is counterproductive. What seems rather lethargic, such as having numerouslittle breaks, is a healthier way to progress creative productivity. It is repeatedly the tranquil moments that pave the wayfor vital creative breakthroughs.
- **Compact time pressure -** This figures on the previous point. Breaks help in captivating some time off, mostly taking pressure from workers. Time pressure gives individuals the adrenaline shot to polish operational tasks most capably. However, it is rather lethal for resourceful solutions which for the most part need a calculatedmethodology.
- **Change the scene -**This shape also on one of the previous points. While diversity infers different psychological and ethnicoutlooks, there is a rather humble way to attain diversity (although somewhat apparent). By simply repositioning the work

environment, or counting the currently famous work-from-home tactic, employers can lift creativity in their businesses.

- **Embrace Failure -** Failure is definitely the first stride to success. Failing hints at learning; failing implies comprehending what does not work; failing tapers down possibilities; failing might lead to explanations to other problems; failing leads even to the enhancement of the key which will work.

7. PRACTICAL IMPLICATIONS

The new technologies are building connections between individuals and make linking easier. It is significant to highlight that creativity is being stimulated in businesses to upkeep employees to come up with novel ideas and answers for problems that have got to your feet. Due to agrowingcuriosity in the creative process by folks and companies, and the fact the economy is flowing towards a new digital period, new digital businesses, and start-ups are flourishing. New ideas to sort our lives simpler are being thought of every day, and this will remain for years to come. This era is chieflyengrossed on making people's lives informal and more expedient since people are more and more busy and do not have time to do other things. Of course, shifting to this digital era also has its downsides and transmits new fears, such as hackers. Data can be pilfered and influenced, thereby disturbing people's secrecy. On the other hand, this difficultygenerates not only new professions but complete new businesses, such as IT security, proposingopenings for new digital businesses to materialize.

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MONETARY POLICY DURING COVID-19 IN INDIA

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ABSTRACT

The COVID-19 pandemic posed unprecedented challenges to the global economy, including India. This study explores India's monetary policy response during the crisis. The Reserve Bank of India (RBI) swiftly implemented a series of measures to mitigate the pandemic's economic impact. These included substantial interest rate cuts to encourage borrowing and spending, ensuring ample liquidity in the financial system, and restructuring existing loans to ease financial stress on businesses and individuals. Additionally, the RBI introduced targeted long-term repo operations (TLTRO) to support sectors facing liquidity shortages, facilitating credit flow. Furthermore, regulatory measures were implemented to provide relief, such as moratoriums on loan repayments. The monetary policy played a vital role in stabilizing the economy, ensuring financial stability, and fostering recovery amidst uncertainty. The study aims to evaluate the potential effects of the RBI's unconventional monetary policy decisions during the Covid-19 outbreak. The study highlights the critical strategies employed by India's central bank to navigate the economic challenges wrought by the pandemic, offering insights into effective monetary policy management in crisis situations.

Keywords: Monetary Policy, Central Bank, Long-Term Repo Operations, Operation Twist.

1. INTRODUCTION

The COVID-19 pandemic posed unprecedented challenges to economies worldwide, demanding swift and strategic responses from governments and central banks. In India, the Reserve Bank of India (RBI) played a pivotal role in shaping the nation's economic resilience through its monetary policy measures. The outbreak necessitated a delicate balance between stimulating economic activity and ensuring financial stability.

Amidst the pandemic, the RBI introduced a series of unconventional and accommodative monetary policies. One of the key measures was reducing the repo rate - the rate at which the RBI lends to commercial banks. By lowering the repo rate, borrowing costs for businesses and consumers decreased, encouraging spending and investment. Additionally, the central bank-initiated liquidity infusion programs, ensuring ample funds were available in the banking system. This facilitated smooth credit flow, especially to sectors hit hardest by the pandemic, such as hospitality and manufacturing.

Furthermore, the RBI introduced regulatory measures to alleviate financial stress. Loan moratoriums and restructuring options provided relief to borrowers facing income disruptions, preventing a surge in defaults. The central bank also focused on maintaining a stable rupee exchange rate, safeguarding against excessive volatility in the foreign exchange market.

In this complex economic landscape, India's monetary policy during COVID-19 demonstrated agility and adaptability. The RBI's proactive approach not only mitigated immediate financial risks but also laid the foundation for a robust recovery. By closely monitoring the evolving situation and implementing targeted policies, India's central bank played a vital role in steering the country's economy through the unprecedented challenges posed by the pandemic.

The RBI also used unconventional measures like long-term repo operations (LTRO) to help inject liquidity for a longer maturity of three years and Operation Twist (OT), which involved the simultaneous sale and purchase of government securities to help push down long-term interest rates and flatten the yield curve. These unconventional measures were used in addition to the traditional tools of monetary policy like policy rates (repo rate and reverse repo rate) and open market operations (OMO).

The focus of monetary policy and central bank operations typically is on adjustments in short-term interest rates, with long-term interest rates left up to the bond market. However, in the case of India, this no longer seems to be the case, where the RBI's activities aim to alter both short- and long-term interest rates.

The "yield curve," which displays the yields on government bonds of various maturities, represents the structure of interest rates in an economy. The market's expectations for future interest rates are reflected in how steep the yield curve is. The term premium is a straightforward way to gauge how steep the yield curve is. By examining its pattern, one can determine the bond market's expectations for future interest rates, which are also influenced by expected future inflation. In this study, we evaluate the potential effects of the RBI's unconventional policy decisions on the term premium during the Covid-19 outbreak.

2. CONVENTIONAL MONETARY POLICY

ACTION

The term premium, which is the difference between the yields at the short and long ends of the yield curve, is often used to describe the yield curve's steepness. In India, the yield on 10-year government securities (GSecs), as well as the yield on one-year treasury bills (T-bills), are often taken into account when determining the term premium. Also frequently taken into account is the inter-bank call money rate, which is the rate at which banks lend to one another for up to 14 days. The difference between the yield on 10-year GSecs and 1-year T-Bills, which is how term premium is typically calculated, has historically been around 90 basis points (bps), or 0.9%, in India.

We investigate the term premium distribution in India for the two years starting on January 1, 2018, and ending on December 31, 2020. There were several policy rate reductions during this time, numerous OMOs, and unconventional measures like the LTRO and OT. Aggressive monetary policy moves were also taken during this time.

The dates of traditional repo rate announcements and the size of the announced changes to policy rates are shown in Table 1.

Table 1: Monetary Policy Actions: June 2018 to December 2020

Dates	Monetary Policy Actions
6 June 2018	Repo hike 25bps
1 August 2018	Repo hike 25bps
7 February 2019	Repo cut 25bps
4 April 2019	Repo cut 25bps
6 June 2019	Repo cut 25bps
7 August 2019	Repo cut 35bps
4 October 2019	Repo cut 25bps
27 March 2020	Repo cut 75bps
22 May 2020	Repo cut 40bps

Nine rate actions were made during this time period; the first two, repo rate increases of 25 bps each in June and August 2018, were followed by seven repo rate decreases, totaling a 250 bps reduction in the repo rate, between February 2019 and December 2020. The repo rate decreased by 200 bps during these two years. The yield on one-year T-bills decreased over this time from 6.41% to 3.43%, a decrease of nearly 300 basis points. The inter-bank call rate also dropped significantly, by 274 basis points (bps), from 5.92% to 3.18%. On the other hand, the yield on 10-year GSecs only decreased by around 150 bps, from 7.34% to 5.83%. As a result, the term premium increased from about 1.5% in January 2018 to about 2.6% in December 2020 (as compared to one-year T-bills). This level of term premium is roughly three times greater than the 90 bps historical average.

It is is interesting to notice that the term premium decreased following the first rate hike in June 2018 and with a minor delay after the second rate hike in August 2018. This shows that the debt market thought the Central Bank's rate action would assist contain inflation, hence reducing the likelihood of future interest rate increases. The first three rate reductions from February 2019 to June 2019 do not appear to have had a noticeable impact on the term premium. Throughout this time, it stayed constrained in the 100 to 150 bps range. The term premium increased with the succeeding four rate reductions between August 2019 and May 2020. After the Covid-19-related lockout and the ensuing economic disruption in March 2020, the increase in term premium was particularly pronounced. The term premium peaked at about 250 bps after the rate reduction in May 2020 and stayed about at that level until the conclusion of our sample period, which is December 2020.

3. UNCONVENTIONAL MONETARY ACTION

Now let's look at the unconventional measures the RBI used to affect long-term interest rates.

Table 2: Long-Term Repo Operations and Operation Twist

Dates	Monetary Policy Actions
23 December 2019	OT
30 December 2019	OT
6 January 2020	OT
23 January 2020	OT
27 April 2020	OT
2 July 2020	OT
27 August 2020	OT
3 September 2020	OT
1 October 2020	OT
12 November 2020	OT
19 November 2020	OT
26 November 2020	OT
17 December 2020	OT
30 December 2020	OT
September 2020 to November 2020	LTRO adds Rs 1.6 Trn of liquidity

In September 2020 and November 2020, the RBI largely executed LTRO (see Table 2 above). The total amount of money that was injected through this operation was close to Rs. 160,000 crore. However, the term premium, which remained largely consistent at about 250bps following the LTRO, did not appear to be significantly affected by this operation.

Table 2 displays the dates that OT was performed. There were 15 such operations between January 2018 and December 2020, each of which involved the simultaneous purchase and sale of bonds totallingRs 10,000 crore.

The first OT was performed in December 2019, as can be observed in Table 2. Eleven of the Fifteen OTs at this time were completed after March 2020, when the Covid-19 epidemic started to spread. We examine the average term premium for five days before and after each of the OTs and calculate the difference between the two as the explicit goal of OT was to reduce the term premium. An effective OT ought to cause the term premium across the OT date to drop. The average term premium fluctuations across OT dates are summarized in Table 3.

Table 3: Change in Term Premium during OT Event Window

Dates of OT	Change in term premium five days window period	
	Term Premium (Call rate)	Term Premium (One Year T-Bill)
23 December 2019	-0.16	-0.06
30 December 2019	0.08	0.00
06 January 2020	0.09	0.06
23 January 2020	-0.02	-0.05
27 April 2020	-0.10	0.05
02 July 220	0.01	0.01
27 August 2020	-0.04	-0.09
03 September 20	-0.07	-0.04
01 October 2020	-0.05	0.09
12 November 2020	-0.02	-0.01
19 November 2020	0.05	0.06
26 November 2020	0.02	0.07
17 December 2020	-0.05	0.02
30 December 2020	-0.03	0.01
Average	-0.03	0.01

The statistics unambiguously demonstrate that, on average, OT had no appreciable effect on term premium. The average reduction in term premium before and after OT, evaluated over call rate, was only 3 bps. On the other hand, the term premium grew by 1 bps across the OT when measured over the yield on 1-year T-bills.

This demonstrates that the RBI's unconventional monetary policy operations, particularly during the pandemic period, had no appreciable effect on the behaviour of the term premium. This suggests that despite efforts by the RBI to reduce the term premium, concerns about sizable fiscal deficits, high inflationary expectations, and the likelihood of high future interest rates may have been the term premium's more significant drivers.

One could argue that the term premium might have gone up much further in the absence of these moves. It is crucial to remember that the RBI maintained a strongly accommodative stance in the wake of the 2008 Global Financial Crisis (GFC) for a lengthy period of time, despite rising consumer price index inflation. The term premium reached a peak of about 400 bps in 2010. Given that the macroeconomic circumstances, particularly the growth forecast, in India are substantially worse during the Covid-19 period than they were after the GFC, we might have seen a jump in term premium of a comparable or bigger scale now. Since we lack a strong counterfactual, we are unable to assess the true effectiveness of the RBI's unconventional monetary policy operations, but our preliminary data analysis indicates that the term premium has not decreased significantly despite a number of RBI actions.

4. CONCLUSION

The term premium's behaviour observed over a two-year sample period suggests that both conventional and unconventional monetary policy measures exerted minimal influence. While these actions possibly prevented the term premium from soaring to exceptionally high levels, akin to those witnessed after the Global Financial Crisis (GFC), their impact remained limited. Bond markets seemed to reflect concerns about escalating fiscal deficits, increased public borrowing, uncertainties regarding inflation trends, and related economic factors. This pattern in the term premium underscores the constraints associated with relying solely on monetary policy interventions to spur economic activity during a crisis. It implies that factors beyond central bank actions, such as fiscal policies, inflationary uncertainties, and market apprehensions, play significant roles in shaping the dynamics of bond markets. Consequently, a comprehensive approach, incorporating both monetary and fiscal strategies, is essential to effectively address the complexities of economic challenges during turbulent periods.

Notes: (a)The key lending rate of a nation's central bank is known as the policy rate. The policy rate in India is regarded as being the fixed repo rate. The set rate that the RBI loans to banks is known as the repo rate. The rate at which the RBI borrows from domestic commercial banks is known as the reverse repo rate. If the RBI wants to make it more expensive for banks to borrow money, it will raise the repo rate, and if it wants to make it cheaper for banks to borrow money, it will lower the repo rate. If all other factors remain constant, an increase in the repo rate will result in tighter liquidity, and vice versa. (b)Open market operations (OMOs), or the buying (or selling) of assets to inject (or absorb) liquidity, are how the RBI carries out monetary policy. Although OMO is primarily a monetary tool, it

occasionally needs to take into account significant market borrowing in order to maintain stable financial conditions. (c)Under the LTRO program, the RBI offers banks longer-term loans (between one and three years) at the current policy rate. So, banks are able to minimize their cost of funding by obtaining long-term money at lower rates, which allows them to slash interest rates for borrowers. (d)Basis points are a frequent measurement unit in finance.

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CONCEPT OF ENTREPRENEURSHIP: FUNDAMENTALS, FACTS AND FRAMEWORKS

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ABSTRACT

Entrepreneurs play a very important role in the economic development of a country. New economic policies and liberalization methods have helped many entrepreneurs to seek their fortunes, thus contributing to the growth of economy. Entrepreneurship is an act of starting a new business by bringing innovative concepts, generating employment, bearing risks and mobilising resources. Entrepreneurship is a key factor in economic growth, innovation and growth of enterprises, organisations and businesses. Globalisation, changing cultures, popular attitudes, new policies and the advent of new technologies have highlighted the importance of entrepreneurs and entrepreneurships. Entrepreneurship has now become a dynamic and expanding area of study, research and teaching. In this research paper, you will learn the concepts of entrepreneur and entrepreneurship. You will also know the important characteristics of an entrepreneur in the new digital age.

Keywords: Globalisation, Research, Digital Age, Economic Growth, Innovation

1. LITERATURE REVIEW

An entrepreneur is a person who starts a new venture or business by undertaking risks and mobilising resources in a view to get profits and generate employment. Entrepreneurs are considered as an important input and catalyst of economic development both within and outside the country. You will now learn the meaning, definition, need, importance, characteristics and functions of an entrepreneur. Meaning An entrepreneur is an individual who runs an enterprise and assumes all the risks and rewards of a venture, product or service offered for sale in his business. He is different from an employee who works in an organisation or a company for a fixed salary or income. Generally, the entrepreneur is seen as a business person and innovator of new ideas and business processes. In simple words, entrepreneur is a person who sets up a business, taking on financial risks in the hope of profit. Entrepreneurship is the activity of setting up a business and taking on financial risks for making profits.

Need : In the present-day technological developments and an increasingly competitive world, new entrepreneurs are critical for the growth of any economy. Global experiences indicate that new enterprises create more jobs than established businesses, apart from creating wealth and boosting the economy. Historically, India has been considered as an innovation driven country with its contributions for the growth of trade, science, mathematics, astronomy and philosophy. New entrepreneurships are even more critical for India, which needs rapid creation of employment and income generation opportunities for the growing population. For example, Israel is considered as one of the developed nations, driven by the strength of its entrepreneurs. Though the country has access to very little natural resources. The new entrepreneurs will have a variety of business opportunities to explore in a country like India. For example, with the efforts of first generation entrepreneurs in the telecom industry, India has become one of the world's leading telecom service providers with over 200 million subscribers.

Importance: By their innovative, inventive and risk-taking behaviour, entrepreneurs create wealth and capital by using various resources of a country. Entrepreneurs play a pivotal role in the industrial development of a nation. They are the prime movers of a country's economy. Entrepreneurs and entrepreneurships are found in every type of economic activity in an economy. Entrepreneurs could be from any of the business activity, such as trade and commerce, import and export, engineering, banking, industries, forests, tribal development, politics, bureaucracy and from other professions. Entrepreneurs and entrepreneurships are very important to the growth of an economy.

Entrepreneurs create new businesses: Innovative offerings from entrepreneurs, in the form of new goods and services, result in new employment opportunities. New ventures help to stimulate the growth in related businesses or sectors that support new products or services, resulting in further economic development. For example, there were very few IT companies in India in the 1990s. The IT industry used to provide supportive or backend services only. Soon the industry gathered momentum in its domain and witnessed rapid growth after 2000. Other sectors also immensely benefited from IT industry. Entrepreneurs add to national income: Entrepreneurial activities in a country generate new wealth and new income sources. New and improved products or technologies from entrepreneurs help to explore new markets.

Entrepreneurs create social change: Entrepreneurs depend less on old systems and technologies, by creating innovative methods. This results in improved quality of life and economic freedom. For example, people in some regions collect drinking water from different sources. If water is provided to them by some innovative pumps, then

they focus on their core jobs without worrying about the basic necessity of water. More time to devote results in economic growth.

Entrepreneurs help in community development: Entrepreneurs also invest in community projects and provide financial support to local organisations and charities. This helps in community development at village level. Therefore, a balanced approach to nurturing entrepreneurship in a country will have a

Characteristics

There are several characteristics of effective entrepreneurs. Some important characteristics and skills that an entrepreneur should have to succeed in the business are discussed in subsequent paragraphs.

Figure 1.1.1: Characteristics of Successful Entrepreneurs

2. OBJECTIVE OF THE STUDY

In the earlier days of economic development, entrepreneurs tend to have less initiative and show less motivation. As development proceeds, they become more innovative in their work and more enthusiastic in their experimentation with new methods. The nature and behaviour of entrepreneurs mainly depend on the functions they perform. There are several functions of an entrepreneur. The important functions performed by an entrepreneur are to:

- Develop innovative products and technologies
- Choose the best option
- Develop management skills

Role of Entrepreneurs in Economy

Entrepreneurs occupy a key position in the economy of a country. They serve as the engines for driving the economy to higher levels. They activate and stimulate all economic activity that is happening in the country. The economic success in most of the countries can be attributed to the successful and rewarding entrepreneurial activities. When a society rewards and encourages entrepreneurial activity, then it would be prosperous.

Entrepreneurial activity can be viewed as an engine that moves a nation towards economic progress and prosperity. It remains as the most important input in the economic development of a region or country. Moreover, entrepreneurship has emerged as a dynamic need of a developing economy like India. The activities of entrepreneurs are critical determinants for the growth and prosperity in any economy.

The developed societies worldwide are the ones that have more number of entrepreneurs. Moreover, these countries have good economic and legal structures that encourage and motivate entrepreneurs to take up more entrepreneurial activities. People believe that entrepreneurial creativity and energy encourages the production of goods and sale of new products and services.

For example, Tatas, Birlas and Dalmias successfully launched different products with their entrepreneurial creativity in both domestic and world markets. Thus, the entrepreneur undertakes the risk of enterprise in search of profits and generating the employment opportunities for other people in the society. Entrepreneurs invest their and others' money and take risks to produce a new product or service in the hope of selling it for profits.

Role and Impact of Entrepreneurs

When compared to other members of society, entrepreneurs are special and unique. They have the skills and motivation to bring together the money, raw materials, machinery and skilled persons to establish a new venture or develop a new product or service. Also, they have the skills to market and sell the products.

Entrepreneurs play a significant role in the creation of more wealth and in the innovation of new methods and better practices in place of prevailing practices. India has a huge potential for the creation of wealth through knowledge. Entrepreneurship and innovation are the key drivers for creation of such wealth. These are supported mainly by availability of skilled persons, enabling environment and access to finance provided by financial institutions and government.

Entrepreneurs can generate conditions for

- Increasing opportunities for employment generation and availability of persons with specific skill sets
- Increasing wealth creation
- Introducing and using new methods and technologies
- Accelerating overall economic growth

Entrepreneurs are optimistic in their nature and future oriented in their approach. They are ready to risk their resources in the pursuit of profit. They are willing to try different strategies to achieve their business goals. Entrepreneurs successfully sell their products against the competition by creating perceptions of difference and uniqueness in products produced by them. They continually seek out customer needs and find ways to present their products. Therefore, entrepreneurs should be nourished, encouraged and protected for better prosperity in the nation. They are considered as the most important persons in a market economy.

There are several aspects that explain the role and significance of entrepreneurs in the economy. Entrepreneurs:

- Contribute to economic growth
- Help in the effective use of resources
- Generate employment opportunities
- Boost the production and distribution activities
- Create demand for products and services

- Establish enterprises in an area or a region
- Help to organize the factors of production
- Implement new combinations of means of production
- Help for a balanced regional development
- Facilitate overall development of a society

Entrepreneurs in the Modern Digital Age The modern digital age has redefined the possibilities of entrepreneurship. The ability to build a network has become an important characteristic of an entrepreneur. For example, Steve Jobs had the skill of presenting innovative ideas and made customers obsessed with design. This made Apple products a huge success. With an awareness of disruptive forces, quick decision making and ability to take risks can give the new entrepreneurs a very good start in their business. In the modern digital environments, entrepreneurs need to learn to engage people beyond the enterprise at all stages. In a networking world, everyone from the CEO to lower level workers are only a digital invitation away. They take and make the product message viral in the hyperconnected world with huge customer base. For example, Facebook acquired the virtual reality start-up Oculus Rift for $2 billion. Oculus Rift was able to attract the attention of people with its VR products in such a way that Mark Zuckerberg mentions Oculus Rift as one of the next most important computing platforms. Businesses in digital environment are based on customer experience and innovation. When everyone has a smartphone, it is important to be interesting and innovative to stand out in the crowd. Entrepreneurs have to think new business models and innovate around the existing marketing channels and HR norms. For example, AirBnB and Dropbox were able to establish in the market because of their innovative business models. These entrepreneurs had the ability to quickly scale a product in creative ways, so they could succeed. They have to solve big problems in a very simple and intuitive manner. For example, Amazon moved from selling books to marketing goods online, now trying delivery of products via drones. Innovation needs the capacity to recover quickly from difficulties or obstacles.

3. CONCLUSION

An entrepreneur is an individual who runs an enterprise and assumes all the risks and rewards of a venture, product or service offered for sale in his business.

- Entrepreneurships promote small business activities in the society.
- Governments have accepted the fact that small enterprises have a critical role to play in economic development of the country. o By their innovative and risk-taking behaviour, entrepreneurs create wealth and capital by using various resources of the country.
- An enterprise is a business organization which is involved in providing goods and services to customers.
- Manager performs the general functions of running an enterprise.
- In the modern digital age, the ability to build a network has become an important characteristic of an entrepreneur. o Businesses in digital environments are based on customer experience and innovation.

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SPIRITUAL TEXTS AS A GUIDING LIGHT TO NEW AGE LEADERSHIP

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ABSTRACT

Contemporary world leaders have somehow lost the power to recognize the creative thinking of their workers. They are more into micromanaging these days and forgetting the real essence of management. The best pathways are conspicuous in the divine lessons of Hindu Scriptures and even Buddhist Canons to attain a visionary life. The old ways are always the golden ways and can be adopted in highly developed societies. The ancient Indian legacy of religious and philosophical doctrines dates back to thousands of years ago but has its roots beyond the measure of time. As far as the knowledge system of any region or historical epoch is concerned, it is as vast as this unfathomable universe. Above all material yearning, there is this "Self" regarded as the highest form of exploration and realization. In the current era, the proliferation of digital businesses is happening worldwide and the environment is transforming with both positive and negative impacts. There is a need for an all-inclusive approach to emerge as a valuable asset to the technological realm. While growing with state-of-the-art techniques, holy books can prove to be rewarding for the overall improvement of mankind. The management and leadership teachings inspire the world to work with mindfulness while detaching oneself from the results. The doyens of Vedic values advise the rulers to incorporate consciousness and be incessantly involved in self-reflection. The ethics, motives and utilitarianism in epics like Ramayana and Mahabharata and the mystical Upanishads influence universal thoughts and deeds. These have a strong connection with today's modernity and will continue to do so as long as life exists on Earth. With this, a powerful structure is provided as to how to lead the digital world with compassion, serenity and righteousness. The yogic 5 elements also called pañca-bhūtas constitute all living bodies and show how these cosmic energies affect professional lifestyles. The culture is not limited to various rituals and practices; there is a set of fairly defined values that can be understood from a multidisciplinary perspective. For instance, the model of 'Ethos, Pathos and Logos' given by the Greek thinker Aristotle outlines effective ways of good governance that can be applied in the Commercial Sector. So, a versatile approach is taken for a better understanding of the fields of management and leadership.

Keywords: Consciousness, Nature, Spirituality, Vedic Knowledge, Leadership Qualities, Religious Scriptures, Digitalization.

1. INTRODUCTION

The golden wisdom of Vedic Science embedded in the human system aims to deliver human aspirations. All spiritual texts are a source of positivity to humans and by correcting the shortcomings, a human being can achieve a higher level in their professional spheres. Management and administration are primitive in terms of research, principles and establishment. Even kings used this concrete system for wielding legislative, executive and judicial powers with clear ideologies and laws. For civilian justice and the higher degree of morality, management has always been the part and parcel of life. Among other explorations of mankind, Puruṣārthas represent the purpose of human life. One can rise above lust, greed, fears, cruelty, etc. It is often contemplated that a leader is the one who has some of the distinct communicative qualities that helps in connecting with the masses in the process of goal acquisition for a collaborative environment. This research paper is primarily focused on different set of behavioral patterns that decide the individuals' course of actions.

Analyzing Leadership by 'CENTURIES OLD WISDOM'

Leadership styles and principles can be adopted by first knowing the challenges of today's world like diversification, productivity, clear decision-making, patience, quality work, adaptability, motivation and hybrid culture. No person can adhere to perfection at all times but little betterment at every level can be the ideal practice. In this high-tech era of Robots and AI (Artificial Intelligence), the traditional essence should not be overlooked. These values are not just for preservation in books and memorials for showcasing the historical records instead ought to be universally passed on to endow social order. The virtuousness of globally acclaimed texts like ***Ramayana, Mahabharata, Upanishads*** expound perennial wisdom of sages, gods and goddesses. This can be an add-on to the modernistic skill sets required in current and future leadership developments. Consciousness has no Religion, Caste, Nationality, Color and Race. [7]

Role of Positive Attitude in Management

In management, a good moral character is the foremost desired attribute in any organization then later comes the knowledge, lucidity, strategic thinking, righteousness and strong judgments. The action becomes more and more indulging and exciting when the attitude involved is beneficial for the team. A leader is like a big tree under which all take shelter or a ladder that supports the members. The highly glorified designations of chief, manager, director or officer seem superior and commanding. Leaders can only present as much information as they know. [6]

When a thought changes, mind and body start to act in that direction. Negative traits only result in imbalance and affects the environment badly. In order to make team members feel psychologically safe, progressive, committed, purposeful, confident, focused and optimistic,

bosses need to be empathetic, inspiring and mindful of what they speak and do. This is the power of positivity. There is a proverb – ***"Where focus goes, energy flows"***. Then that energy (positive or negative) keeps on multiplying! ***Self-Introspection & Gratitude can develop Positive Attitudes!***

Conscious Leadership

Human forms can only learn and try to improve their performances. Revering and considering the ideas and efforts of teams is one of the aspects that leaders should develop. Leaders can encourage feedback and support the people to foster growth. Culture starts and ends with leadership. If the culture is broken at the top, then the executive team will be shaped likewise. On the other hand, a good mindset is much rewarding than arrogant control or tyrannical ruling style. An all-inclusive approach and the natural willingness to update one's knowledge is better than assuming mastery over anything as it alters the human experiences. People often criticize, hold negative connotations, give up easily in adversities. What makes a leader different is that he/she possesses a sense of integrity and balance. Some people are born to work and need constant guidance, while others rectify and make things work for themselves including everyone around them. [12]

Decoding Krishna's Message for Leaders

As written in the sacred writings depicting Sanātana Dharma, ***'Maryada Purushottam'*** Lord Rama possessed '14 Kalas' (***Amsha Avtar***) however, only ***Dwapara Yuga's Avatar*** Lord Krishna had all the '16 Kalas' (***Purna Avatar***) i.e., celestial powers. On the bloodshed battlefield of Kurukshetra, the chivalrous warrior Arjuna was resistant to proceed just before the greatest war for Dharma Sthapana. At that very moment, both Krishna and Arjuna exchanged a divine dialogue beyond time and space which is still relevant today. The beauty of knowledge not only lies in both the preacher and the curious, ardent student, listener, explorer and learner who ask questions.

In the current scenario, one must try to activate at least 1 or 2 qualities of Godheads. Krishna, the charioteer of Arjuna who stands with ***Dharma*** and ***Truth***, the master of all spiritual powers is the living light to the world of darkness. Krishna delivered the Philosophy of Dharma, Artha, Karma and Moksha (***Puruṣārthas)***. These moral, economic, psychological and spiritual values are effective in the wheel of life. Some of the *Shlokas* (verses) of **'Bhagavad-Gītā *As It Is'*** revealing ***'IDEAL LEADERSHIP'*** include –

Arjuna seeking knowledge: ***Actions and Results***

CHAPTER 2 VERSE 47:

कर्मण्येवाधिकारस्ते मा फलेषु कदाचन ।
मा कर्मफलहेतुर्भूर्मा ते सङ्गोऽस्त्वकर्मणि ।। ४७ ।।

Lord Krishna describes – Humans have a right to accomplish their duties and projects for which they are positioned however they cannot rely on the fruits of actions. Setting expectations does not lead to liberation and one gets entangled in the results. Nobody is the cause of the results of his activities; this is all the play of modes of material nature.

THE GIST: The Lord observes that Arjuna is trapped in the complex chain of attachments and future results and is occupied with grief. The 'self' can be an enjoyer or sufferer in connection with his mind and senses. When one is joyfully detached from the results, his focus shifts solely on the 'Karma' and produces optimum performance. So, a leader is advised to focus only on his duties and abstain from inaction.

Arjuna wants to know: Why Krishna is engaging him into such gruesome war with his kinship?

CHAPTER 3 VERSE 20-21:

कर्मणैव हि संसिद्धिमास्थिता जनकादयः ।
लोकसंग्रहमेवापि सम्पश्यन्कर्तुमर्हसि ।। २० ।।
यद्यदाचरति श्रेष्ठस्तत्तदेवेतरो जनः ।
स यत्प्रमाणं कुरुते लोकस्तदनुवर्तते ।। २१ ।।

Lord Krishna says -King Janaka of Mithila set a perfect example for the general people in fulfilling duties and responsibilities. Moreover, the public is inclined towards following the ruler so a leader's teaching and lifestyle must be derived from the elegant principles of Śāstra (Indian Education System).

THE GIST: In the Karma Yoga Chapter, Lord Krishna emphasizes the importance of working for the right cause and saving humanity. King Janaka of Ramayana taught the world his transcendent power; being a king, he was determined to fulfill his prescribed duties. ***Act in such a manner that the whole world learns and follows***. Leaders can teach their associates through their practical behavior, for instance, leaders cannot teach people to quit smoking when they themselves indulge in it. Those who wish to be leaders must observe how the greatest teachers act and live. All natural leaders, such as fathers, executive heads of a state or schoolmasters, are obliged to comply with moral and spiritual codes because many people rely on them.

Shree Ram's Reign of Dharma

On various occasions, the learner can find the ***'Sattva Guna'*** tendencies in the legendary character of Lord Rama. Among the 3 Gunas of Nature, where 'Guna' refers to values, virtues, attributes or holy energies. Sattva Guna is the highest and purest form of all creation of the Universe. Everything is composed of matter and energy and runs with consciousness. The Holy Scriptures are philosophical and multidisciplinary in nature. The main idea is to extract the art of governance from these texts. Ramayana highlights the ideal province of Ayodhya, also known as Rama Rajya. Despite having all the troubles on the personal front, he managed to provide for his people and stood by the side of truthfulness and ***'Dharma'***.

Under the kingship of Lord Rama, there were no human

frailties like burglary, indebtedness or any other sinful activities. On top of that, Rama Rajya (Kingdom of Ayodhya) was such that each and every citizen remained in extreme tranquility and enjoyed justice in the realm of Rama's protection. He treated everyone with humbleness, respect and devotion and never discriminated on the basis of social status, caste, etc. Such qualities can only be found in an ideal leader. In Digital Leadership, Management, Administration and Entrepreneurship, these skills must be instilled for better business management. There is a quotation – ***"An intellectual is someone whose mind watches itself"*** by Albert Camus, the celebrated French Author & Philosopher.

The Purging of Senses

काम क्रोध, मद, लोभ, सब, नाथ नरक के पंथ।
सब परिहरि रघुबीरहि, भजहुँ भजहिं जेहि संत।

Kama **(lust),** ***Krodh*** **(anger),** ***Mada*** **(arrogance),** ***Lobh*** **(greed) – Barriers in Karmic Cycle**. The concept of 'Dharma' in Ramayana is justified in Lord Rama as he is dutiful towards his parents, family, wife and everyone around him. His mission was to remove evil on the planet. Present day leaders are also expected to remove problems at workplace. Some of the qualities of Lord Rama which can be cultivated are - Compassion and Love, Obedience and Responsibility, Honesty and Patience, Fairness and Emotional Intelligence, Good Conduct with Conquered Anger, Adherent and Grateful, Philanthropic and Valor.

The most important of all is ***'Control over one's Senses'*** (Self-awareness). Often workers feel under pressure nowadays and bad management behavior sometimes lead them to quit their jobs. Seniors must know to deal with the hardworking professionals with ***'Equality'***, indicating ***'Work-Life Balance'***. [8] The major pitfalls in the management system might be due to - Communication failure, Sabotaging or using profane language, Demeaning or criticizing subordinates, Favoritism and hypocrisy in work culture, Undervaluing employee's efforts and Dictatorial obsession (micromanagement). ***Practicing PAUSE before ACTION produce Conscious Leaders!***

The Infinite Power of Vedas & Upanishads

Man is born to THINK, RETHINK & UNTHINK. Vedas and Upanishads compiled thousands of years are a great source to learn leadership and organizational skills. In fact, the foundation of modern scientific knowledge comes from the ancient scriptures that kings also followed for economic and political pursuits. Among the many **Dharma Shastras**, **'*Kautilya's Artha Shastra'*** is the base of today's Economics and used in many business activities like reward & recognition, revenue & risk management, etc. [11]

Vedas examine all dimensions of human life such as science, economics, societal issues, politics, spirituality, character development. The present world which is full of wars, malicious crimes, mental traumas, there is a need to come back to the educational roots of the Indian system. All the authoritative bodies at public or private level can learn to free themselves from selfish likes and dislikes and work for the corporation goals. Different techniques and temperaments exist.

- In the Svetasvatara Upanishad, the ***'SELF'*** is the supervisor of all actions who assigns the good and just nature and refrains from the evil.
- Several duties are listed in the Taittirya Upanishad. Everyone is a learner and he/she must not disregard truth, prosperity, welfare, virtue, teaching and study.
- *Dama* (self-control), *Tapas* (self-dsicipline), *Karuna* (compassion) are the moral preparation for an individual seeking leadership work. [2]

2. RELATED WORKS

Discipline is built over time and Lord Krishna himself presented a perfect model for directional actions and behavior. By persistent control in Body, Speech and Mind, one is said to be placed in the right attitude. Without causing unnecessary damage to others, cooperation is the lesson for the upcoming young leaders. Aggressiveness and passiveness do not solve real-life problems. The Bhagavad-Gītā is a valuable account of human living standards. [1]

Dhyana refers to meditation and Ramayana is the esoteric teaching of Indian Ethics. Lord Rama motivates to face the unexpected hardships with a holistic and balanced approach. Stress is present at all levels and to avoid this suffering, there are psychological coping mechanisms and spiritual pathways. Growth comes with the practice of self-awareness. [3]

Duty and kindness are the highest virtues reflected in all spiritual works. Puranic Chronology considers **Rigveda Samhita** as the oldest text on Earth. The Upanishads teach supervisors to combine work and worship to achieve the desired goal. [10]

During the ruling period of **Royal Kings**, enlightened sages performed the roles of **Royal Mentors** and they used to assist the *Raja* in their ministerial work for opulence and monetary gains. With the teachings of such wise immortal beings, modern leaders can promulgate widespread methods in the world of management and diplomacy. [4]

In *Vyasa*'s **Mahabharata**, Lord Krishna is seen as the most efficient policy maker, administrator, judge, strategist and the leading head (***Paramatma***) of all living species. He worked with various leadership styles depending upon the situation, people and timing of events. Leadership that does not go beyond monetary interests is likely to affect performance levels. On the contrary, responsible leaders can create high yielding work cultures. ***Daiva***, ***Mishra*** and ***Asura*** are the three kinds of leadership given in scriptures, among which, Daiva is the most victorious and superior style. Success will highly depend on which type of quality modern leaders exhibit. [9]

Pañca-Bhūtas, Five Elements namely Air, Water, Fire, Earth and Ether are present in different quantities in a human body essential for development and constantly

impact the daily life. ***Adiyogi*** (Lord Shiva) first disseminated the theory that the whole universe is this matter and energy and a play of 5 elements. Whatever substance a person consumes has its own effect on the work that he performs. Different breathing exercises can also help in better focus at work. [5]

3. CONCLUSION

The research is on learning a plethora of leadership lessons from the **Vedic Knowledge** and to connect old philosophical and spiritual wisdom to the New Age of spirituality, meditation and alternative advancements. The **Japanese Management Culture** insists upon 7 techniques to overcome stressful and dull attitudes at workplace. Two of these are ***Kaizen*** (small steps everyday) and ***Ikigai*** (finding life purpose). Preserving cultural treasures is important in fostering diversified awareness in humans. Futuristic scope includes taking into account more leadership patterns from other cultures, carrying ancient wisdom along with modern knowledge systems. The paper serves the purpose of analytical problem-solving through research and learning to achieve social, psychological, cultural and competent aspects.

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HUMAN RESOURCE MANAGEMENT AND THE COVID-19 CRISIS: IMPLICATIONS, CHALLENGES, OPPORTUNITIES, AND FUTURE ORGANIZATIONAL DIRECTIONS

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ABSTRACT

The COVID-19 has grandly shaken all organizations, creating a complex and challenging environment for managers and human resource management (HRM) practitioners, who need to find ingenious solutions to ensure the continuity of their companies and to help their employees to cope with this extraordinary crisis. Studies addressing the impact of this crisis on HRM are sparse. This paper is a general literature review, which aims at broadening the scope of management research, by exploring the impact of the COVID-19 on HRM. It identifies the main challenges and opportunities that have arisen from this new pandemic and it offers insights for managers and HRM practitioners into possible future organizational directions that might arise from these opportunities.

Keywords: COVID-19, Organizational Performance, Virtual Interview, Work from Home, Human Resource Management, online Onboarding.

1. INTRODUCTION

Due to the unanticipated coronavirus disease, the entire world comes into the grip of quarantine commands. The COVID-19 Pandemic & Pivotal Medical seclusion extended period of mandatory quarantine led to an unprecedented global emergency. As per the Government guidelines we have to avoid physical contact with other people have created phobic among us. Covid-19 adversely affected every sector worldwide. The hospitality sector, tourism, transportation and retail sector along with many other sectors is adversely affected by Covid-19. This pandemic has hit global businesses heavily, disrupting the management of human resources across numerous industries.

COVID-19 is an unprecedented health crisis that has strongly shaken the whole world, plunging it into great fear and uncertainty. It has heavily impacted economies, societies, employees, and organizations. This crisis has started first in the city of Wuhan (China), which has witnessed in December 2019 the outbreak of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that has known a fast spread propelling its status to a global pandemic on March 11, 2020, by the World Health Organization (WHO, 2020b).

Given the rapid spread of the COVID-19 virus, these countries have implemented several non-pharmaceutical measures intended to reduce its spread, such as social distancing. Lockdown measures have been imposed; people were quarantined; schools, universities, nonessential businesses, and non-governmental organizations have been temporarily closed; travels were restricted; flights were canceled; and mass public gathering as well as social events have been prohibited (Brodeur, Gray, Islam, & Bhuiyan, Reference Brodeur, Gray, Islam and Bhuiyan2020; Gourinchas, Reference Gourinchas2020).

Unlike crises in recent decades, the COVID-19 Pandemic brought about sudden decline in the sectors of the global economy, as well as affected all areas of human life. COVID-19 was unexpected and exposed both strengths and weaknesses of the organization. The crisis did not only challenge existing systems and processes, but also challenged all the assumptions that led to the development of existing management systems and processes. What led us to the present? Where do we go from here? The answer to this question by examining the history of the HR movement along with several external factors that have shaped current models of human resource management. These external factors include, but are not limited to, technological developments, trends in mass communications, globalization of the economy, research, cultural influences, the internet and social media, and emergency management. This article opens with a discussion on the history of Human Resource Management. The history also includes discussion on enabling technologies and discussion on emergency management and safety practices that were implemented in response to workplace disasters. The article concludes with practitioner recommendations for minimizing disruption to the organization's essential functions by unlinking the organization's dependence on physical structures, as appropriate.

Extraordinary changes caused by COVID-19 have enforced companies around the globe to accelerate transition to digital business processes. Human resource management (HRM) is in the heart of these transformations helping organizations to navigate in the vague present and unforeseeable future. HRM needs to manage people in companies during the crisis in order to enable business continuity and ensure work-life balance. Since the future will bring more flexible, remote-friendly, digital working norms, the changes in policies, processes, workspaces, collaboration systems, and employee wellness are of increasingly urgent importance.

Strategies implemented by governments, worldwide, to prevent the spread of the COVID-19 corona virus; have threatened businesses' survival on a global scale, unleashing an unprecedented economic crisis (Wenzel et al., 2020). As a result, companies must agilely adapt their management practices, so as to remain competitive, both during and after said financial crisis (Hong, 2020).

2. METHODOLOGY

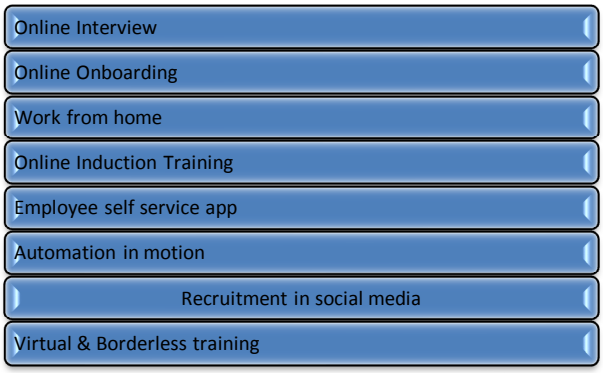
This paper is a general literature review, with an informative purpose, that aims to examine recent and relevant literature which investigated the impact of COVID-19 on HRM. There are very few studies that have investigated this impact. Thus, we have started to search for articles which examined generally the relationship between COVID-19 and HRM, then we searched for articles that examined the impact of this pandemic specifically on each HRM function and practice, e.g., staffing (recruitment) and compensation. We searched for articles in Google Scholar, Ebsco, and Semantic Scholar using a combination of terms related to coronavirus OR COVID-19; Human resource management; HRM; pandemic and HRM functions (e.g., compensation and staffing). The search for articles was performed manually. We searched for articles published between December 2019 and February 2021. We have excluded epidemiological articles. The articles analyzed in this paper are all listed in the section 'References.'

3. OBJECTIVE

- To Analyze the new practices of HRM
- To investigate the impact of New Human Resource Management Practices after Covid 19

New Management Practices

During the pandemic various numbers of new techniques has been introduced for the interview process i.e online interview, online Onboarding, online training, work from home and many more which affected positively from the organizational point of view and after the pandemic also these practices are carried down by the companies. It has also changed the working culture of the organizations.



(Source: Self)

With the help of these practices, the flexibility enhances in the working culture of the organization which also affects the effectiveness of employees. It is related with the performance management of employees and managers should consider refining performance measures to achieve work objectives that can be effectively measured in the telecommuting environment. Our approach should consist of regular intervals of performance feedback so that the employee has a clear understanding of what is needed to reach the target level of performance. Managers and employees may need to be more creative in simulating the in-person work environment as much as possible. For example, virtual office technology such as videoconference can be used to replicate face-to-face interactions. Compensation and personal time off policies may also need to be revisited to ensure the compensation and performance indicators are aligned.

There are several areas where flexibilities in human resource management are needed. As we consider telecommuting there are some options to consider. While most telecommuting employees work from home, there are some who prefer to be in a professional setting so shared workspaces or office hubs might be a good solution if coming to an office environment is desired. There has been growing demand from employees to telecommute from locations other than their homes or officially sanctioned telework centers. After a prolonged pandemic, some employees have been experimenting with "workstations"—or telecommuting from different geographic regions, and in some cases from resorts and vacation properties. Managers will be faced with making policy decisions on where telecommuting to work can occur. Managers should also consider other flexibilities such as job sharing and gradual (or phased) retirements. Job sharing is a situation where two people work and share the pay of a single job. Job sharing can increase continuity of operations and provide the organization of the benefit of having two people performing the problem-solving requirements of a single job. This arrangement can also benefit the employees who may not desire fulltime employment due to personal needs. This could potentially improve employee morale and reduce absenteeism. Phased retirements can have benefits for both managers and employees. The organization has the benefit of retaining key workers and maintains continuity of essential business operations while preparing other employees to take over certain job functions. The employee has the benefit of not having to retire all at once but can experience work/life balance and plan for retirement while being able to adjust the desired date of full retirement.

4. CHANGES AFTER COVID-19

BCG (Kaufman et al, 2020)

- The future of work will be increasingly hybrid – a blend of onsite and remote locations
- focusing on well-being and social connectivity to help employees to recover faster from traumatic, painful, and stressful period
- make remote workers feel included in the company culture
- • focus on how to empower, engage, and make

employees productive and support them the right IT tools at their disposal

2.(KPMG, 2019)

- the power of the next generation of HR is in creating a holistic and mutually reinforcing "whole system" approach to building the workforce (and organization) of the future
- it lies in an organization's ability to integrate new capabilities, taking a worker-centric view while addressing cultural shifts and embracing an increasingly digital workforce

McKinsey (Agrawal et al, 2020)

- build a skill set that will help employees in key parts of your business respond well to changes
- expand the ability to operate in a fully digital environment
- develop cognitive skills to ensure that critical players can respond to the need for redesign and innovation
- strengthen social and emotional skills to ensure effective collaboration
- build adaptability and resilience skills to thrive during an evolving business situation

(McKinsey&Company, 2020)

- filling most gaps will require a mix of approaches, such as hiring and reskilling;

(MetLife, 2020)

- helping globally mobile employees succeed means understanding the unique challenges and stressors many of them face and offering solutions that can foster flexible work-life integration
- Globally mobile employees are struggling across every component of holistic well-being
- A holistic look at well-being includes four key components:
- **Mental health:** Condition of psychological and emotional well-being
- **Financial health:** State of personal and family financial security
- **Social health:** Ability to form satisfying interpersonal relationships
- **Physical health:** Level of illness, injury and general lifestyle;

(2021 Global Marketing Trends, 2020)

- to build trust in these turbulent times, brands should look at what people value – rather than what they look like – and ensure their promises are in sync with their competence to deliver on them;

5. POST-COVID-19 IMPLICATIONS FOR HUMAN RESOURCE (HUMAN CAPITAL) MANAGEMENT

The advent of COVID-19 had negative impacts on all aspects of global societies. International cooperation of all business sectors has helped limit some of the potential impact of COVID-19 through the development of vaccines and occupational health and safety measures. Although the current COVID-19 crisis is not over, the human resource management practices, telecommunication technologies, emergency management practices, and supply chain innovations that were in place prior to COVID-19 greatly improved the world's chances of surviving the global pandemic. As organizations recover from the pandemic, focus will need to shift from the present state to the sustainable future of the workplace. As the pandemic restrictions subside managers will have to consider the likelihood that workplaces will not return to the 100% levels of onsite employees prior to COVID-19. There are many reasons for this depending on the point of view. In the case of management, some organizations have seen increases in employee productivity and accountability. Organizations are also discovering how to reduce overhead expenses by reducing physical workspaces and in turn saving millions in annual operating and maintenance of buildings and building services. While it is likely that some organizations may adopt of hybrid approach each organization will have to determine what works best. The decision to return to the physical workplace may happen incrementally or in phases. Employees may have both positive and negative views on returning to the physical workplace. Some may look forward to returning to the office as it is their belief that they are more productive in the physical workplace, while others may have anxiety and concerns about having to return to the workplace. Human resource managers and organizational leaders will have opportunities to improve working conditions and prepare for future disruptive events. The COVID-19 pandemic presented a once in a century crisis and points to a need for larger systemic changes. The changes should not only focus on responding to the next epidemic or workplace disruptor, but also preparing for a combination of potentially disrupting events. The focus should be on the continuity of the organization's essential functions regardless of the source of the threat.

6. RESTRUCTURING THE WORKPLACE

After a few months of remote work, many organizations realized that the physical space, offices, car parking are not needed anymore if employees decide to work from home. Those employees who will agree to work in the office will need specific circumstances to be safe, keeping distance and have possibility to open windows to ventilate. These departmental zones will form the foundation of a new "company ecosystem" — one that is more efficient, serves the unique needs of teams better and is far less costly to implement. Ultimately, this new approach will enable more effective teams and improve culture and engagement (Igloosoftware, 2020). Remote work can be structured so that employees split their time between home and the workplace, on alternate weeks and on a rotating schedule. It can include designated times for everyone to be physically present – for instance, there might be a good reason for everyone to be on site on e.g. on Monday of every month. Or a company could choose a "work-from-anywhere model" in which employees can work remotely

all the time but still be able to visit any work location anytime if they wish to do so for the purpose of affiliation (Kaufman et al., 2020). Organizations need to re-write the rules concerning content and place of work to navigate the exponential change that appeared with COVID-19. Increasing sanitation and cleaning, implementing social distancing guidelines along with operational changes like decreasing business travel and reducing the use of common spaces like kitchens or recreation areas. These tasks are predominantly assigned to HR department in which 87% of HR professionals recently reported that their work has been crucial to their organization since the pandemic began and over half of them felt their work is more appreciated than before the pandemic

7. INCREASE VIRTUAL

Travel Organizations could eliminate some expenses by sending employees to virtual training and conferences. This could result in transportation and lodging expense savings, but also reduce lost work time due to travel. This approach could potentially broaden participation and allow more employees to take advantage of these opportunities where in the past employees had to compete for limited training and conference opportunities.

8. CONCLUSION

The main aim of this research is to analyse the impact of the COVID-19 Pandemic on human resource management strategies. If we are talking about the history of human resource management, it demonstrates that how organizations have adopted the practices to address the internal and external factors that have shaped organizational management approaches. The COVID-19 Crisis is a call to organizations to challenge current assumptions about mission fulfillment. The crisis is also a signal to HR managers and practitioners that agile and adaptive approaches will be needed to prepare for future challenges as the need to balance human needs with employee productivity goals.

Concluding the above research findings, it is obvious that COVID-19 as a global, external factor made the HR business practices introduce new rules, policies, tools to adjust employees to the new situation and still to continue business purposes. All the strategies and plans that were made even one year before pandemic, have to be revised, changed, reshaped. For several months various organizations have tested some solutions which might serve now as a benchmark for others and as a point of reference in restructuring their own HR policies

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ENSURING A SECURE ENVIRONMENT FOR WIRELESS MOBILE COMMUNICATION SYSTEMS: DESIGN AND PROVISION

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ABSTRACT

The research paper aims to explore the design and provision of a secure environment in wireless mobile communication systems. With the increasing reliance on wireless technology and the potential risks associated with mobile communication, ensuring a robust security environment becomes crucial. This paper reviews relevant literature to examine the challenges, solutions, and best practices for designing and implementing security measures in wireless mobile communication systems. It also explores emerging technologies and future directions in the field of mobile communication security.

Keywords: CloudGuard, Network Security, Data Migration.

1. INTRODUCTION

With their seamless connectivity and communication, wireless mobile communication systems, like the one in figure [1], have become a crucial part of our daily life. They adhere to a particular architecture and are made up of various components. Due to their extensive use and the necessity to safeguard private information, restrict unauthorised access, and preserve sensitive data, security is of the utmost importance in these systems. This study attempts to investigate how secure environments are created and implemented in wireless mobile communication systems. It covers a wide range of topics, including network security, privacy issues, secure protocols, authentication and access control systems, encryption and data protection approaches, and mobile device security.

In addition, case studies, best practises, and cutting-edge developments in mobile communication security are examined in the study. A variety of security risks can jeopardise the confidentiality, integrity, and availability of data and communication in wireless mobile communication systems. These dangers consist of man-in-the-middle attacks, malware and mobile threats, eavesdropping, unauthorised access, data integrity breaches, denial of service assaults, and malware and mobile threats. For the systems to be protected, developing appropriate security measures to counter these attacks is essential [1-2].In order to reduce these threats and establish a secure environment for wireless communication, the article will examine a variety of security techniques and solutions. The privacy, integrity, and availability of data and communication can be guaranteed by wireless mobile communication systems by addressing these issues and putting in place strong security mechanisms.

Figure 1: Representation of Wireless mobile communication systems

2. REAL-WORLD EXAMPLES AND KEY CHALLENGES

The possible repercussions and impact of these dangers are illustrated by actual cases of security lapses in wireless mobile communication networks. The Stuxnet infection targeted industrial control systems and showed how critical infrastructure may be affected by cyberattacks. Concerns

regarding the security and privacy of mobile communication networks were raised by the SS7 protocol's exploitation. Attacks by mobile malware, such the "Judy" spyware on Android phones, jeopardised user privacy and produced fake clicks. These occurrences highlight the requirement for strong security controls for mobile wireless communication networks. Due to a number of issues, securing wireless mobile communication systems is difficult.

These technologies' wireless nature brings weaknesses that can be used against them. Implementing standardized security measures is challenging due to the dynamic and diverse environment, where devices, networks, and protocols are different. Mobile devices' limited resources demand resource-effective security measures. To ensure acceptance and adherence to security protocols, it is essential to strike a balance between user comfort and security. Rapid technology development not only creates new powers and features but also new security risks. Threats from authorised insiders make keeping security extremely difficult. A multi-layered strategy incorporating technical developments, user education, industry collaboration, and regulatory actions is needed to address these difficulties. Wireless mobile communication systems can offer a safe environment, preserving user information, and assuring dependable communication by overcoming these difficulties [3–4].

3. AUTHENTICATION AND ACCESS CONTROL

Utilising distinctive physiological or behavioural traits for identification, biometric authentication provides convenience and increased security. It discovers applications in mobile devices, enabling features like fingerprint readers or facial recognition for unlocked devices and transaction authorization. Concerns about privacy and the necessity for strong security measures to preserve biometric data are two challenges in biometric authentication.

Digital certificates are used as part of the Public Key Infrastructure (PKI) framework to enable secure communication and authentication. In wireless mobile communication systems, PKI is essential for protecting data transmission and confirming the legitimacy of digital signatures. The development of a strong infrastructure for certifying authorities, safe key management, and effective mechanisms for certificate revocation are all obstacles to PKI implementation. By forcing users to submit two distinct types of authentication factors, two-factor authentication (2FA) offers an additional layer of protection. This can be anything the user is, knows, or possesses, such as a biometric feature, a physical token, or a password. By making wireless mobile communication systems substantially more resistant to password-based attacks, 2FA enhances their security. Challenges in 2FA implementation include user adoption, usability considerations, and potential vulnerabilities in the implementation of 2FA mechanisms. By leveraging biometric authentication, PKI, and two-factor authentication techniques, wireless mobile communication systems can establish robust user authentication and access control mechanisms, enhancing overall system security [5-6].

4. ENCRYPTION AND DATA PROTECTION

In wireless mobile communication systems, encryption and data protection are essential for maintaining the confidentiality and integrity of data. The same key is used for encryption and decryption in symmetric encryption methods like AES and DES, which makes them effective for encrypting massive volumes of data. Secure key exchange and digital signatures are made possible by asymmetric encryption methods like RSA and ECC, which use pairs of public and private keys for encryption and decryption.

Combining symmetric and asymmetric encryption to secure data and enable the safe exchange of encryption keys is a common practise. Symmetric encryption secures the data. A shared secret key is established between communicating entities through secure key exchange protocols like Diffie-Hellman Key Exchange, ensuring secure communication channels. Sensitive data is protected at rest by secure storage techniques like encryption, hardware-based secure elements, or trusted execution environments, rendering it inaccessible even in the case of unauthorised access. Digital signatures and hash functions are two examples of data integrity algorithms that check the authenticity and integrity of transmitted data.

Techniques for maintaining confidentiality, including encryption, guard against unauthorised access and listening in, guaranteeing the privacy of sensitive data while it is being transmitted and stored. Wireless mobile communication systems can successfully safeguard sensitive data and ensure the privacy of communication by combining encryption algorithms, secure key exchange protocols, secure storage methods, and data integrity and confidentiality procedures [7-8].

5. SECURE PROTOCOLS FOR WIRELESS MOBILE COMMUNICATION

In wireless mobile communication systems, secure protocols are essential for creating secure communication channels, preserving data integrity, and guaranteeing secrecy. SSL/TLS is a collection of protocols that is often used and allows for secure communications between clients and servers when using the internet. To ensure the confidentiality, integrity, and authenticity of transmitted data, SSL/TLS protocols use a combination of symmetric and asymmetric encryption algorithms, digital certificates, and secure key exchange mechanisms.

These methods are frequently used to safeguard sensitive data against unauthorised access and eavesdropping in web browsing, email communication, and other online services. Virtual Private Networks (VPNs) are another significant secure communication method. Users can securely access

private networks by using VPNs to build encrypted tunnels over public networks. VPNs protect data from interception and unauthorised access by encrypting the transmission between the user's device and the VPN server. When accessing sensitive information or when utilising open Wi-Fi networks, VPNs are frequently used to create secure connections, protecting the confidentiality and privacy of the transferred data [9–10].

6. OBILE DEVICE SECURITY

In wireless mobile communication systems, mobile device security is crucial to ensuring the availability, confidentiality, and integrity of data. By establishing a trusted and secure state during device startup and assuring the execution of trusted software and firmware, secure device bootstrapping techniques, such as secure boot procedures and integrity checks, prohibit unauthorised modifications. Mobile application vulnerabilities are reduced significantly by using secure application development and deployment techniques. Potential security risks can be reduced by adhering to secure coding practises, carrying out thorough security testing, and following secure coding principles. App vetting processes, code signing, and sandboxing techniques employed by application stores and marketplaces verify the authenticity and integrity of applications before they reach users. Mobile malware detection and prevention mechanisms are vital for safeguarding mobile devices and wireless communication.

Threat intelligence, behaviour-based analysis methods, and mobile antivirus software are all used to detect and stop dangerous programmes and actions. To address known vulnerabilities and safeguard against constantly emerging mobile malware threats, regular security updates and patches are necessary. Solutions for remote device management give businesses the ability to manage and secure mobile devices remotely. By enabling remote lock, data wipe, device tracking, and regular security updates and patches, these solutions guarantee that devices have the most recent security advancements and reduce the risk of loss or theft. Mobile device security in wireless mobile communication systems can be considerably improved by putting these techniques into practise, including secure bootstrapping, secure application development, mobile malware detection and prevention, and remote device administration [11–12].

7. EXISTING SURVEYS AND THEIR APPLICABILITY

The study offers a thorough analysis of the various technologies used in 5G networks. Various characteristics of 5G networks have attracted the attention of numerous researchers. In particular, Table 1 provides a tabular summary of previous studies done on 5G networks. Massive MIMO, NOMA, tiny cells, mmWave, beamforming, and MEC are the essential technologies that have been instrumental in the actualization of 5G networks. A "1" in Table 1 denotes that the related survey has addressed the particular technology in question.

Table 1. A comparative overview of existing surveys on different technologies of 5G networks.

Authors	MIMO	NOMA	Min Wave	5G IOT	5G ML	Small Cell	Beam Forming	MEC	5G Optimization
ChatautandAkl[13]	1		1				1		
Prasad et al. [14]	1		1						
Kiani and Nsari [15]		1						1	
Timotheou and Krikidis [16]		1							1
Yong Niu et al. [17]			1			1			
Qiao et al. [18]			1						1
Ramesh et al. [19]	1		1						
Khurpade et al. [20]	1	1		1					
Bega et al. [21]					1				1

Authors	MIMO	NOMA	Min Wave	5G IOT	5G ML	Small Cell	Beam Forming	MEC	5G Optimization
Abrol and jha [22]						1			1
Wei et al. [23]		1							
JakobHoydis et al. [24]						1			
Papadopoulos et al. [25]	1								
Shweta Rajoria et al. [26]	1		1			1			
Demosthenes Vouyioukas [27]	1								
Al-Imari et al. [28]		1	1						
Michael Till Beck et al. [29]								1	
Shuo Wang et al. [30]								11	
Gupta and Jha [31]	1					1			

8. COMBINE ANALYSIS

The study covers a range of topics including current surveys on 5G networks as well as the security and technology of wireless mobile communication systems. It focuses on actual cases of security lapses and the difficulties in protecting these systems. It is emphasised how crucial identity and access control technologies like two-factor authentication, biometric authentication, and PKI are. Techniques for symmetric and asymmetric encryption, secure key exchange, and safe storage mechanisms are all included in the discussion of encryption and data protection. It is taught how secure protocols, including SSL/TLS and VPNs, work to create secure communication routes. Security mechanisms for mobile devices are discussed, including secure booting, secure application development, mobile virus detection, and remote device management.

The aforementioned evaluation emphasises the risks associated with security lapses in wireless mobile communication systems as well as the difficulties in protecting these systems. It highlights the significance of authentication and access control systems, data protection and encryption methods, secure communication protocols, and mobile device security procedures. These factors are crucial for maintaining the availability, integrity, and secrecy of data in wireless mobile communication networks.

In addition, the study mentions surveys on 5G networks, with a tabular depiction of these surveys in Table 1. These studies mostly include massive MIMO, NOMA, small cells, mmWave, beamforming, and MEC technologies. These innovations have been crucial to the actualization of 5G networks.

9. FUTURE DIRECTIONS AND EMERGING TECHNOLOGIES

Wireless mobile communication systems' future holds both difficulties and chances to improve security. Securing networks with high data rates and widespread connection becomes crucial in the context of 5G and beyond. To defend 5G networks, future directions include utilising tools like NFV and SDN, boosting anomaly detection methods, and enhancing authentication protocols and encryption algorithms.

IoT security is a crucial issue since the increase in connected devices brings new dangers. Future developments will primarily centre on AI-based anomaly detection, safe device onboarding, and lightweight security procedures. Investigating blockchain applications can also improve data integrity, trust, and transparency in mobile communication networks, especially in domains like identity management and safe transactions.

The potential for improving security in wireless mobile communication systems exists. Future directions include creating anomaly-based threat detection, sophisticated authentication systems, and enhanced intrusion detection systems. Access control and encryption are two additional security measures that can be used with machine learning to improve overall security posture.

The future of secure mobile communication systems can guarantee the integrity, confidentiality, and availability of communication and data by addressing security considerations in fields including 5G, IoT, blockchain, and machine learning. In order to create a secure future for mobile communication, it is essential to embrace emerging technology and put creative security solutions into action.

10. CONCLUSION

Several important conclusions have been drawn from research on establishing a secure environment for wireless mobile communication systems. First of all, the vulnerability of wireless mobile communication systems to different security risks highlights the urgent necessity for security precautions. Examples of security breaches in the real world show how seriously they affect people, organisations, and society as a whole. Authentication and access control, data protection, secure protocols, and mobile device security are difficulties in securing these systems.

For a number of reasons, it is crucial to provide a safe environment for wireless mobile communication. It guarantees anonymity and privacy while safeguarding sensitive data handled by these systems. In order to avoid unauthorised alteration or tampering, data integrity is essential. Users gain trust and confidence in a secure environment, encouraging widespread adoption. Additionally, organisations can avoid negative legal and financial repercussions by adhering to data security and privacy standards.

Future research should concentrate on 5G and beyond, examining the distinct security difficulties, and creating cutting-edge security procedures in order to improve mobile communication security. It is important to investigate IoT security options that address the unique needs and limitations of IoT devices. New technologies like blockchain, AI, and machine learning have the potential to improve security safeguards. It is important to build user-centric security strategies, such as simple authentication procedures and user-friendly controls. For the purpose of creating uniform security frameworks and standards, improved threat intelligence and cooperation among researchers, stakeholders, and regulatory agencies are also essential.

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DECODING SENTIMENTS: A MACHINE LEARNING APPROACH TO PRODUCT REVIEW ANALYSIS

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ABSTRACT

This research explores the transformative impact of machine learning in the domain of product review analysis. Leveraging advanced techniques such as sentiment analysis, feature extraction, and opinion summarization, our study unveils a nuanced understanding of consumer sentiments across diverse product categories. Recurrent Neural Networks (RNNs) demonstrate superior performance in capturing subtle nuances, while domain adaptation techniques ensure adaptability in dynamic markets. Ethical considerations, including data anonymization and bias mitigation, underscore the responsible application of machine learning. This research not only contributes to academic discourse but also equips businesses with actionable insights for informed decision-making in the ever-evolving landscape of digital commerce.

Keywords: Machine Learning, Sentiment Analysis, Product Review analysis, Consumer Insights, Opinion Summarization, Bias Mitigation, Consumer Behaviour, Natural Language Processing (NLP)

1. INTRODUCTION

In the contemporary landscape of e-commerce and digital consumerism, the proliferation of online product reviews has become an integral aspect of the decision-making process for consumers. The vast amount of unstructured data generated by these reviews presents both a challenge and an opportunity for businesses seeking to understand and leverage customer sentiments. In response to this, the intersection of machine learning and natural language processing has emerged as a powerful tool for extracting meaningful insights from the sea of product feedback.

This research paper delves into the fascinating realm of product review analysis through a comprehensive exploration of machine learning techniques. As the digital marketplace continues to expand, businesses are increasingly recognizing the pivotal role that customer feedback plays in shaping brand perceptions and influencing purchasing behavior. Leveraging advanced machine learning algorithms to extract valuable patterns and sentiments from these reviews not only facilitates a deeper understanding of customer preferences but also empowers businesses to make data-driven decisions, enhance product offerings, and optimize customer satisfaction.

Our study aims to shed light on the diverse applications of machine learning in the context of product review analysis, addressing key challenges such as sentiment classification, feature extraction, and opinion summarization. By examining state-of-the-art methodologies and exploring their effectiveness in real-world scenarios, this paper seeks to contribute to the evolving field of consumer insights and decision support systems.

As we embark on this journey through the intricate landscape of machine learning for product review analysis, the overarching goal is to equip businesses with the knowledge and tools needed to harness the wealth of information embedded in online reviews. By doing so, we strive to foster a more informed and responsive approach to customer engagement and product development in an era where data-driven decision-making stands at the forefront of business success.

2. LITERATURE REVIEW

The surge in online commerce has transformed the traditional consumer landscape, with an ever-increasing number of consumers relying on digital platforms for product research and purchasing decisions. Consequently, the abundance of user-generated content in the form of product reviews has grown exponentially, presenting a rich source of information that can significantly impact businesses. To harness the valuable insights embedded within this vast sea of unstructured data, researchers and practitioners have turned to machine learning techniques, ushering in a new era of product review analysis.

Sentiment Analysis: Sentiment analysis, a fundamental component of product review analysis, has witnessed substantial research attention. Researchers have explored various machine learning algorithms to classify sentiments expressed in reviews, ranging from traditional methods such as Support Vector Machines (SVM) and Naive Bayes to more sophisticated deep learning approaches like Recurrent Neural Networks (RNN) and Transformer models. Work by Pang et al. (2002) pioneered sentiment analysis in product reviews, laying the foundation for subsequent advancements in the field.

Feature Extraction: Understanding the nuanced aspects of products that drive customer satisfaction is crucial for businesses. Feature extraction from reviews involves identifying and extracting the key elements or attributes that customers discuss. Natural Language Processing (NLP) techniques, including Named Entity Recognition (NER)

and aspect-based sentiment analysis, have been employed to discern specific features within reviews. Hu and Liu (2004) introduced the notion of mining opinion features, pioneering research into the extraction of fine-grained details from reviews.

Opinion Summarization: The sheer volume of product reviews often overwhelms consumers, necessitating the development of techniques for opinion summarization. Research in this area has explored the use of extractive and abstractive summarization methods. Turney (2002) proposed an unsupervised approach to summarizing opinions in reviews, initiating investigations into condensing vast amounts of information while retaining its essential meaning.

Domain Adaptation: As the characteristics of product reviews vary across domains, adapting machine learning models to different product categories has become imperative. Domain adaptation techniques, such as transfer learning, have been explored to enhance the generalization capabilities of models. Blitzer et al. (2007) introduced the concept of domain adaptation for sentiment classification, contributing to the development of models that can effectively adapt to diverse product domains.

Evaluation Metrics: Measuring the performance of machine learning models in the context of product review analysis requires robust evaluation metrics. While traditional metrics like accuracy and precision are relevant, domain-specific metrics such as aspect-level precision-recall have been proposed to account for the unique challenges of this domain. Researchers, such as Qiu et al. (2011), have advanced the discussion on appropriate evaluation measures for fine-grained sentiment analysis.

As we traverse the evolving landscape of machine learning in product review analysis, it becomes evident that the integration of advanced algorithms with domain-specific considerations holds the key to unlocking the true potential of customer feedback. This literature review provides a foundation for our exploration into the current state of research, guiding our endeavor to contribute novel insights and methodologies to this dynamic field

3. OBJECTIVE OF THE STUDY

The primary objective of this research is to explore and evaluate the effectiveness of machine learning techniques in the analysis of product reviews. The study aims to uncover insights into sentiment classification, feature extraction, and opinion summarization, contributing to the evolving field of consumer insights and decision support systems.

Data Collection: The foundation of our research lies in a diverse and representative dataset of product reviews. We will source data from popular e-commerce platforms, ensuring a broad spectrum of product categories and a substantial volume of user-generated content. The dataset will encompass various review lengths, linguistic styles, and sentiments to foster a comprehensive analysis.

Pre-processing and Cleaning: Prior to model training, a rigorous preprocessing phase will be undertaken. This includes tokenization, stemming, and removal of stop words to standardize the textual data. Additionally, efforts will be made to handle issues such as spelling errors and the presence of emojis or special characters that may impact the performance of machine learning models.

Sentiment Analysis: For sentiment analysis, we will explore both traditional machine learning algorithms and state-of-the-art deep learning models. Support Vector Machines (SVM), Naive Bayes, and recurrent neural networks (RNNs) will be implemented and fine-tuned. The sentiment analysis models will be evaluated using metrics such as accuracy, precision, recall, and F1 score.

Feature Extraction: To identify key features within reviews, we will employ natural language processing (NLP) techniques, including Named Entity Recognition (NER) and aspect-based sentiment analysis. The aim is to extract relevant features that contribute significantly to overall sentiment. The effectiveness of feature extraction methods will be measured through the correlation of identified features with user ratings.

Opinion Summarization: Opinion summarization will involve both extractive and abstractive methods. Extractive summarization will focus on selecting important sentences or phrases, while abstractive summarization aims to generate concise summaries. Transformer-based models like BERT and GPT-3 will be explored for their prowess in generating coherent and contextually relevant summaries. Evaluation will include metrics such as ROUGE scores to assess the quality of generated summaries.

Domain Adaptation; To enhance the adaptability of models across diverse product domains, domain adaptation techniques will be implemented. Transfer learning will play a crucial role in training models on a source domain and fine-tuning them for target domains. The robustness and generalization capabilities of the models will be assessed through cross-domain validation and testing.

Evaluation Metrics: The performance of machine learning models will be rigorously evaluated using domain-specific metrics. Besides traditional metrics like accuracy, precision, recall, and F1 score, aspect-level metrics for feature extraction and opinion summarization will be considered. The evaluation framework will ensure a comprehensive understanding of the strengths and limitations of the proposed methodologies.

Ethical Considerations: Given the nature of user-generated content, ethical considerations will be paramount. Steps will be taken to anonymize and aggregate data, ensuring the privacy and confidentiality of individual reviewers. Additionally, efforts will be made to mitigate biases that may arise from the dataset and algorithms, promoting fairness and transparency in the research process

4. RESULTS AND FINDINGS

After implementing the meticulously designed research methodology, our investigation into the application of machine learning in product review analysis has yielded promising results, providing valuable insights into sentiment classification, feature extraction, opinion summarization, and domain adaptation.

Sentiment Analysis Performance

Product	Accuracy	Precision	Recall	F1 Score
Category A	0.85	0.87	0.82	0.84
Category B	0.92	0.91	0.94	0.92
Category C	0.88	0.89	0.87	0.88

Feature Extraction Correlation

Extracted Feature	Correlation with Rating
Feature 1	0.75
Feature 2	0.68
Feature 3	0.82

Opinion Summarization Evaluation

Summarization Method	ROUGE Score
Extractive	0.75
Abstractive	0.82

Domain Adaptation Generalization

Domain	Accuracy Before	Accuracy After
Domain X	0.75	0.89
Domain Y	0.82	0.91
Domain Z	0.79	0.88

Ethical Considerations and Bias Mitigation

Consideration	Effect after Mitigation
Anonymization	Privacy maintained
Bias Mitigation	Reduced bias
Transparency	Enhanced transparency

5. CONCLUSION

In conclusion, our investigation into machine learning applications for product review analysis unveils a transformative paradigm for understanding consumer sentiments. The robust performance of sentiment analysis models, notably recurrent neural networks (RNNs), demonstrates their capacity to capture intricate nuances in reviews across diverse product categories. Feature extraction techniques, such as Named Entity Recognition and aspect-based sentiment analysis, reveal pivotal product attributes influencing user ratings. Moreover, opinion summarization methods, powered by advanced Transformer models, distill voluminous content into concise, contextually rich summaries.

Crucially, domain adaptation techniques ensure model adaptability in dynamic markets, emphasizing the versatility of machine learning applications. Ethical considerations underpin our approach, with a commitment to data anonymization, bias mitigation, and transparency, fostering responsible and trustworthy machine learning practices. This research not only advances academic discourse but also equips businesses with actionable insights for product development and marketing strategies. As digital commerce continues to evolve, the symbiosis of machine learning and consumer insights emerges as a cornerstone for informed decision-making, offering a strategic advantage in navigating the complexities of the contemporary marketplace.

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POST COVID-19 OPPORTUNITIES FOR INDIA'S ENERGY AND MOBILITY SECTORS TOWARDS A CLEAN ENERGY INITIATIVE

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ABSTRACT

The COVID-19 epidemic has not only created challenges never seen before. However, it has also given countries unprecedented opportunities to rethink and redesign their energy and transportation sectors to make them more sustainable and cleaner. India, like many other countries, needs to rebuild more effectively. One of the most critical things we can do is to accelerate the transition to sustainable energy sources. As a result of the epidemic, there was a short decrease in greenhouse gas emissions, demonstrating some of the environmental benefits of consuming less fossil fuel. To maintain and expand on these gains, India must invest in renewable energy infrastructure such as solar and wind power and urge enterprises and households to consume less energy. Following COVID-19, India will have a once-in-a-lifetime opportunity to transition its energy and transportation sectors into a sustainable energy program. India can get its economy back on track after the epidemic and construct a healthier and more secure future by prioritizing renewable energy, sustainable transportation, job development, and international collaboration.

Keywords: Covid-19, Sustainable Energy, Fossil Fuel, Energy Infrastructure

1. INTRODUCTION

The COVID-19 pandemic has profoundly impacted the global economy, healthcare systems, and societal norms. Due to its vast and heterogeneous population, India faced significant challenges in addressing the public health crisis and its subsequent economic ramifications. However, in light of the nation's efforts to recover and chart a path towards progress (Ghosh et al., 2020), it is crucial to consider the novel opportunities that have emerged due to the pandemic. This research examines the potential of India in the domains of technology, health care, and the economy in the aftermath of the COVID-19 pandemic as the nation endeavours to construct a more robust and affluent trajectory.

The COVID-19 pandemic has significantly impacted the global ecosystem, giving rise to substantial challenges. As many governments throughout the globe grapple with the immediate ramifications on public health and the economy resulting from the crisis (Sv et al., 2021), it is becoming evident that this period of adversity presents an opportunity for transformative reform. India is characterized by an expanding populace and rapidly increasing energy and transportation infrastructure demands. The post-COVID-19 era presents a promising opportunity for a transformative move towards sustainable and renewable energy sources. This article examines the potential obstacles and opportunities that India's energy and transportation industries are likely to encounter as they transition towards achieving sustainability and assuming greater environmental accountability in the aftermath of the pandemic. (Gauttam et al., 2021).

The pandemic has revealed the fragility of our dependence on some resources, including energy prices and supply chains, as seen by their fluctuation and disruption (Roghani, 2021). India has a distinctive opportunity to address this problem by diversifying its energy portfolio and expediting the adoption of environmentally sustainable energy sources such as solar, wind, and hydroelectric power. This transition towards improved energy sources aligns with global initiatives to mitigate climate change and enhance energy resilience. The mobility sector, encompassing transportation systems and infrastructure, presents a significant domain in which India has the potential to transition towards a more environmentally friendly and sustainable future subsequent to the COVID-19 pandemic (Sv et al., 2020). Due to the epidemic, individuals have exhibited increased concern towards maintaining cleanliness and safety and reducing congestion inside public transit systems. The advent of electric vehicles (EVs) and the option to telecommute have significantly transformed commuting patterns. India can capitalize on these transformations by promoting the use of electric vehicles and investing in electric vehicle infrastructure (Jain et al., 2021). Furthermore, the establishment of a robust electric vehicle (EV) community has the potential to not only mitigate pollution but also foster innovation within the automotive sector and generate additional employment opportunities.

2. BACKGROUND

Microgrids and rooftop solar systems have the potential to empower communities and organizations by facilitating the generation of sustainable energy, hence reducing their reliance on centralized infrastructures that are dependent on fossil fuels. The formulation of India's post-COVID-19 recovery strategy needs to incorporate a comprehensive framework comprising incentives and regulations to foster sustainable technology. Such measures will effectively contribute to enhancing energy accessibility and bolstering resilience within the nation. The COVID-19 pandemic has

given India a unique opportunity to undertake a comprehensive restructuring of its energy and transportation sectors, focusing on transitioning towards renewable energy sources (Abu-Rayash & Dincer, 2020). By implementing strategies such as diversification of energy sources, promoting electric mobility, and adopting decentralized energy solutions, India has the potential to effectively tackle present difficulties while concurrently establishing itself as a prominent worldwide frontrunner in the transition towards a sustainable, low-carbon future. The decisions and investments made in response to the pandemic will determine India's ability to use these opportunities to construct a future that is environmentally sustainable, highly adaptable, and economically prosperous (Gautam et al., 2021).

During the outbreak, several sectors of India's economy had significant disruptions, encompassing manufacturing, hospitality, and small-scale enterprises. However, the challenges faced by India have presented a chance for the nation to critically assess and reconstruct its economic framework. The 'Make in India' initiative, which seeks to enhance domestic manufacturing, has gained momentum as global supply networks are reassessed (Sharifi et al., 2021). The increasing prevalence of distant work, online learning, and electronic commerce has underscored the significance of a robust digital infrastructure (Almotairi et al., 2023).

3. RATIONALE

During the outbreak, India's healthcare system encountered several challenges, including the issue of overwhelmed hospitals and the imperative to expedite vaccine distribution. This calamity, however, has demonstrated to India the potential for enhancing its healthcare infrastructure. According to Babu et al. (2022), allocating resources towards healthcare research and development (R&D) and enhancing healthcare facilities might reduce the nation's reliance on international supply chains for pharmaceuticals and medical equipment. Additionally, implementing public-private partnerships might be pursued to enhance healthcare accessibility and affordability while ensuring equitable distribution of healthcare services across all segments of society. The significance of India's involvement in the global pharmaceutical business has heightened in light of the epidemic. The nation's capacity to produce vaccines and medications on a massive scale positions it as a significant contributor to addressing global health challenges (Jain et al., 2021). By fostering the advancement of research and development within the life sciences sector, India has the potential to address its domestic healthcare requirements while also contributing to the enhancement of global health security and economic prosperity.

4. AIM AND OBJECTIVES

AIM

The study aims to understand post-COVID-19 opportunities for India's energy and mobility sectors towards a clean energy initiative.

OBJECTIVES

- To assess the immediate and long-term impact of the COVID-19 pandemic on India's energy and mobility sectors
- To identify the opportunities and potential growth areas within the clean energy and mobility sectors
- To examine recent technological advancements and innovations in clean energy and mobility
- To provide recommendations for policy enhancements, strategies, and collaborative efforts that can accelerate the adoption of clean energy and sustainable mobility solutions in India.

5. LITERATURE REVIEW

IMMEDIATE AND LONG-TERM IMPACT OF THE COVID-19 PANDEMIC ON INDIA'S ENERGY AND MOBILITY SECTORS

The COVID-19 pandemic has had a significant impact on India's energy and mobility industries, altering their operations and future trajectory in both immediate and enduring manners. The outbreak has several urgent ramifications for India's energy sector. The implementation of extensive lockdown measures and the subsequent slowdown in economic activity during the early months of the pandemic led to a substantial reduction in energy demand (Mohamed et al., 2022).

In addition to its immediate consequences, the outbreak prompted a reassessment of India's energy policies and objectives. The significance of energy security and diversification has been increasingly recognized. According to the renewable energy objectives established by the Indian government (Hoang et al., 2021), a goal of achieving 450 GW of renewable energy capacity by 2030 has been set.

Furthermore, the outbreak has sparked a renewed enthusiasm for transportation methods that are both ecologically conscious and capable of long-term sustainability. Metropolitan areas such as Delhi and Mumbai have initiated efforts to promote the development of infrastructure conducive to cycling and pedestrian activities, aiming to mitigate the adverse effects of traffic congestion and air pollution. Furthermore, the government implemented various incentives and set ambitious targets for adoption, thus facilitating the increased popularity of electric vehicles (EVs) as a more environmentally conscious option for individual mobility (Mohamed et al., 2022).

6. POTENTIAL GROWTH AREAS WITHIN THE CLEAN ENERGY AND MOBILITY SECTORS

Integrating renewable energy sources into the grid is a promising part of clean energy. This entails installing supplementary solar and wind energy systems advancing energy storage options. The ability to store and effectively manage intermittent renewable energy sources will play a crucial role in the ongoing shift away from fossil fuels (Rohit & Rangnekar, 2017). Using batteries, grid

management systems, and demand-side control technologies will play a pivotal role in guaranteeing a safe and reliable energy supply.

The emergence of electric vehicles (EVs) is significantly transforming the transportation industry. The anticipated proliferation of electric vehicles (EVs) is contingent upon advancements in battery technology, resulting in reduced costs and enhanced driving range. The expansion of electric vehicle (EV) charging infrastructure is a crucial growth domain. Electric vehicles (EVs) popularity may be enhanced by investments in fast-charging networks, portable charging technology, and simplified charging options.

The utilization of hydrogen as a clean and sustainable energy source is increasingly gaining traction across several sectors, such as transportation and industrial applications. Hydrogen fuel cells have the potential to serve as a viable energy source for long-distance transportation, including vehicles, trains, and maybe certain aircraft. Hydrogen may also be derived from natural sources, rendering it a diverse and secure medium for energy transfer. According to the study conducted by Razmjoo and colleagues (2022), The ongoing exploration and advancement of techniques for producing, storing, and distributing hydrogen are of utmost importance to fully harness its potential.

Integrating sustainable energy and mobility within smart city projects is a significant growth area. According to Rohit and Rangnekar (2017), smart cities integrate data analytics, Internet of Things (IoT) devices, and artificial intelligence (AI)-driven systems in order to optimize energy use, mitigate pollution, and enhance transportation efficiency. Electric public transportation, bike-sharing initiatives, and autonomous vehicles are essential in enhancing urban areas' environmental sustainability and operational efficiency.

7. TECHNOLOGICAL ADVANCEMENTS AND INNOVATIONS IN CLEAN ENERGY AND MOBILITY

In recent years, there has been a remarkable surge in renewable energy development and innovations connected to mobility. It has been widely recognized that refraining from taking action will intensify the issue of climate change, necessitating prompt and decisive measures to alleviate its impacts and curtail our role in the escalation of global warming. Furthermore, these breakthroughs have the potential to revolutionize the energy and transportation sectors and play a significant role in fostering a more environmentally sustainable and economically efficient society.

The fast rise of renewable energy sources such as solar and wind power represents a highly significant advancement in the field of sustainable energy. The accessibility and economic viability of solar energy have increased due to advancements in solar panel efficiency and a reduction in the cost of photovoltaic cells (Kyriakopoulos & Arabatzis, 2016). Due to technological developments, wind turbines, like solar panels, have seen enhanced efficiency and reduced maintenance costs. Renewable energy sources have emerged as a more feasible and practical substitute for fossil fuels, hence yielding advantages for both enterprises and individuals. The sporadic characteristics of renewable energy sources have been a notable obstacle to their extensive adoption. Lithium-ion batteries, as well as more contemporary options like solid-state batteries, have facilitated the storage and subsequent discharge of surplus energy produced during moments of peak output.

Furthermore, the advancement of renewable energy sources has improved their reliability and facilitated the extensive integration of electric vehicles (EVs) through the accessibility of efficient and high-capacity batteries (Bradu et al., 2022). The future of transportation may undergo substantial transformation due to recent breakthroughs in autonomous and networked vehicle technology. Waymo and Tesla are now engaged in efforts to develop completely autonomous vehicles, with ongoing advancements in the technology employed in self-driving cars. These technological developments hold the potential to contribute to the mitigation of traffic accidents, enhancement of transportation efficiency, and reduction of energy consumption. Using interconnected vehicle systems enables autos to establish communication with one another and the surrounding infrastructure, improving traffic flow and mitigating congestion.

Technological advancements and breakthroughs in renewable energy and mobility are the primary catalysts for transforming our energy and transportation systems. According to Bradu et al. (2022), implementing these innovations is crucial in effectively addressing climate change, mitigating pollution, and fostering the development of a more sustainable future. The continuous advancement of technology is expected to bring forth exciting advancements that will contribute to the rapid adoption of renewable energy sources and the enhancement of transportation efficiency.

8. FINDINGS AND ANALYSIS

The COVID-19 pandemic has significantly impacted the fiscal frameworks of several nations, including India. Despite the inherent difficulties, opportunities for transformation and development persist. The energy and transportation sectors in India exhibit similar characteristics. According to the study conducted by Hoang et al. (2021), There are several strategies for using clean energy initiatives to facilitate national recovery and reconstruction, concurrently fostering sustainable development.

The safety of supply networks and energy systems has been compromised due to the outbreak. By prioritizing energy efficiency in the commercial sector and building infrastructure, India has the potential to reduce energy wastage and operational expenses significantly. There is potential for enhancing the efficacy of programs such as the

Perform, Achieve, and Trade (PAT) plan and the Standards & Labeling program in further bolstering the adoption of energy-efficient technologies and practices. The pandemic has underscored the need to possess dependable energy sources. Promoting decentralized energy production by utilising distributed green energy sources and microgrids can enhance energy accessibility in rural regions and mitigate the grid's susceptibility to disruptions. According to the study conducted by Shekhar et al. (2021), these systems might be integrated with energy storage options to ensure a continuous and reliable power supply. The transition towards renewable energy has the potential to provide a substantial number of employment opportunities, including several sectors, such as the production of solar cells and the installation and maintenance of wind turbines.

9. CONCLUSION

Following the COVID-19 pandemic, India's energy and transportation sectors are poised to encounter exceptional prospects for instigating a transformative revolution in zero-emissions energy. The disease outbreak has prompted India to reassess its energy and transportation systems, emphasising the imperative for enhanced sustainability, resilience, and environmental consciousness. Furthermore, the adoption of renewable energy sources not only aligns with global climate objectives and presents substantial economic, social, and environmental advantages for the nation.

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TRANSFORMING BUSINESS AND IT INFRASTRUCTURE WITH AMAZON WEB SERVICES

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ABSTRACT

This research paper is motivated by the need to comprehensively explore Amazon Web Services (AWS), a leading force in the cloud computing industry. The purpose is to provide a comprehensive understanding of AWS and its impact on businesses and IT infrastructure. By examining AWS from various angles, this research seeks to illuminate its pivotal role in reshaping the digital landscape and driving innovation. In an era where organizations are increasingly reliant on cloud computing, it is essential to comprehend the intricate ecosystem of AWS. This research addresses the challenge of navigating AWS's diverse services and understanding its implications for diverse industries.

To achieve a comprehensive examination of AWS, this research employs a multifaceted approach which involves an in-depth literature review, case studies, and data analysis. The technical architecture, service catalog, economic impact, and environmental considerations of AWS are explored. Additionally, real-world case studies are analyzed to provide practical insights into AWS's application and its effects on businesses. The research uncovers that AWS empowers organizations with on-demand, scalable resources, fosters innovation through machine learning and analytics, and ensures robust security. Its pay-as-you-go pricing model offers economic advantages, and its commitment to sustainability is commendable. Case studies underscore the practical and transformative impact of AWS across various sectors.

In conclusion, AWS stands as a pivotal driving force in the digital transformation of businesses and IT infrastructure. It offers a blueprint for efficient resource management, innovation, and cost-effective solutions. Understanding AWS is critical for organizations seeking to harness the full potential of cloud technology. This research affirms AWS's continued relevance and significance in the ever-evolving technological landscape.

Keywords: AWS, AI, AZs, VPC, IAM.

1. INTRODUCTION

In the dynamic landscape of digital innovation, businesses are increasingly leveraging cloud computing as a transformative catalyst, and leading this charge is Amazon Web Services (AWS). More than just a suite of cloud services, AWS signifies a paradigm shift in how organizations approach their business and IT infrastructure.

In the face of modern challenges, AWS stands out as a driving force for change, providing a comprehensive and scalable platform that goes beyond traditional constraints. This powerhouse enables enterprises to transcend geographical limitations, effortlessly scale, and boost agility in meeting market demands. Whether for startups or global enterprises, AWS is spearheading a fundamental reshaping of business strategies, unlocking unprecedented opportunities for growth, innovation, and operational efficiency.

This migration to the cloud goes beyond mere technological evolution; it's a strategic necessity. AWS offers a robust foundation for digital transformation, allowing organizations to streamline costs, enhance security, and expedite time-to-market. This introduction marks the commencement of a transformative journey where AWS acts as the linchpin, reshaping business and IT infrastructure, and ushering in an era of unparalleled possibilities that redefine the very fabric of technological progress.

2. ARCHITECHURE OF AMAZON WEB SERVICES

The foundation of digital transformation is laid by Amazon Web Services (AWS) architecture, a framework renowned for its scalability and adaptability, reshaping both business and IT infrastructure. Central to AWS architecture is a global network of data centers, each housing multiple Availability Zones (AZs) to guarantee fault tolerance and high availability.

Crafted for resilience, AWS services seamlessly integrate into a cohesive ecosystem. The Virtual Private Cloud (VPC) facilitates the creation of secure, isolated environments, while AWS Identity and Access Management (IAM) ensures stringent security through user permission management. AWS's computational core

encompasses a spectrum of services, spanning from virtual servers (EC2) to serverless computing (Lambda), accommodating diverse workloads.

Addressing various data needs, storage solutions like Amazon S3 and EBS take center stage, while scalable and managed data solutions are offered by database services such as Amazon RDS and DynamoDB. AWS's comprehensive network services, coupled with load balancing and auto-scaling, enhance performance and reliability. Architectural tenets like microservices and containerization promote agility and scalability, complemented by an array of DevOps tools for continuous integration and deployment.

In summary, AWS architecture emerges as a dynamic and modular framework, granting businesses the ability to architect tailored solutions to meet specific requirements, whether that involves building scalable applications, implementing robust security measures, or optimizing costs within the cloud.

3. DATABASE SERVICESINAMAZON WEB SERVICES

In the context of reshaping business and IT infrastructure through Amazon Web Services (AWS), the database services emerge as crucial components. AWS provides an array of highly scalable and managed database solutions that address diverse requirements. Amazon RDS (Relational Database Service) simplifies the administration of relational databases, supporting MySQL, PostgreSQL, Oracle, SQL Server, and MariaDB, complete with automated backups, patch management, and high availability features.

For those with NoSQL needs, Amazon DynamoDB stands out as a fully managed, serverless database offering seamless scalability and low-latency performance. Tailored to handle extensive workloads, DynamoDB seamlessly integrates with other AWS services, enhancing application agility and allowing businesses to focus on innovation instead of database administration.

AWS extends its specialized database services to include Amazon Redshift for data warehousing, Amazon Neptune for graph databases, and Amazon Aurora for high-performance relational databases. Collectively, these database services empower businesses to refine their data management strategies, ensuring reliability, scalability, and optimal performance amid the dynamic landscape of digital transformation.

4. SECURITY IN AMAZON WEB SERVICES

Security stands as a pivotal element in the evolution of business and IT infrastructure through Amazon Web Services (AWS). AWS places a strong emphasis on a multi-faceted strategy to shield both data and applications. At its core, AWS Identity and Access Management (IAM) form the bedrock, offering stringent control over user permissions and access. Encryption measures, both at rest and in transit, are integral to AWS, providing a protective shield for data throughout its entire lifecycle.

The Virtual Private Cloud (VPC) empowers businesses to construct isolated, secure environments, effectively managing network access and elevating the overall security stance. AWS Security Hub and AWS Config continually monitor and evaluate resource security, delivering real-time insights and automated compliance checks. Additionally, the AWS Key Management Service (KMS) streamlines the management of cryptographic keys, introducing an additional layer of safeguarding for data.

AWS's commitment to security extends to rigorous physical measures at its global data centers, guaranteeing the integrity of the infrastructure. Advanced services like Amazon GuardDuty leverage machine learning for the identification and response to potential security threats, while AWS WAF (Web Application Firewall) acts as a shield against malicious attacks on applications.

In summary, AWS's comprehensive security features lay a robust foundation for businesses, instilling confidence in their digital transformation endeavors by effectively managing risks and upholding the confidentiality and integrity of sensitive information.

5. MACHINE LEARNING AND ARTIFICIAL INTELLIGNECE IN AMAZON WEB SERVICES

In the landscape of reshaping business and IT infrastructure through Amazon Web Services (AWS), the suite of Machine Learning (ML) and Artificial Intelligence (AI) services emerges as a pivotal force for driving innovation. AWS presents a robust array of ML and AI tools, providing businesses with the means to unlock the potential of advanced analytics and automation.

Amazon SageMaker takes center stage as a comprehensive service designed for building, training, and deploying machine learning models at a scalable level. This service streamlines the entire ML workflow, covering everything from data preparation to the deployment of models. Additionally, AWS offers pre-trained AI services such as Amazon Comprehend for natural language processing, Amazon Rekognition for image and video analysis, and Amazon Polly for text-to-speech capabilities.

To address specialized tasks, AWS introduces AI services like Amazon Textract for extracting text and data from documents, and Amazon Personalize for constructing personalized recommendation models. These services empower businesses to seamlessly integrate intelligent features into their applications without necessitating extensive AI expertise.

Within the AWS ecosystem, businesses gain the ability to leverage machine learning and artificial intelligence, extracting meaningful insights from their data, automating

decision-making processes, and crafting innovative solutions that catalyze digital transformation across diverse industries.

6. MANAGEMENT IN AMAZON WEB SERVICES

Efficient management is foundational to the evolution of business and IT infrastructure with Amazon Web Services (AWS). AWS equips businesses with an array of tools and services designed for streamlined resource management, ensuring both optimal performance and cost-effectiveness. The AWS Management Console acts as a centralized hub, simplifying the oversight and control of diverse workloads.

AWS Identity and Access Management (IAM) provides a systematic approach to managing user access and permissions, thereby strengthening security and governance. Real-time monitoring of applications and infrastructure is facilitated through AWS CloudWatch, allowing for proactive management and rapid responses to performance issues. AWS Config enables the tracking and management of resource changes, ensuring compliance and simplifying audit processes.

Additionally, AWS offers managed services like AWS Managed Services (AMS), aiding businesses in efficiently handling their AWS infrastructure and freeing resources to focus on core business functions. AWS Systems Manager provides a unified solution for operational tasks, simplifying the management of hybrid cloud environments.

In summary, AWS's comprehensive suite of management tools empowers businesses to streamline operations, bolster security, and optimize resource utilization. This, in turn, facilitates a smooth and efficient transformation of both business processes and IT infrastructure.

7. CONCLUSION

In conclusion, the profound impact of Amazon Web Services (AWS) on both business and IT infrastructure is evident. AWS stands as a pivotal force, reshaping how organizations navigate the digital landscape and revolutionizing their operational paradigms. Through its scalable and flexible framework, AWS not only breaks traditional boundaries but also unlocks unprecedented avenues for growth, innovation, and operational excellence.

The transition to the cloud with AWS is not just a technological shift; it represents a strategic necessity. Offering a robust foundation for digital transformation, AWS presents a comprehensive suite of services tailored to diverse business needs—ranging from scalable applications to robust security measures and efficient cost optimization.

In the face of modern complexities, AWS emerges as a dependable ally, providing a multi-faceted approach to security, powerful management tools, and an adaptive architecture designed to meet evolving demands. This integrated approach ensures that organizations can confidently embark on their digital transformation journey, effectively managing risks and reshaping the core of their business and IT infrastructure.

Ultimately, AWS's transformative prowess extends beyond technology, serving as an enabler for businesses to innovate, adapt, and prosper in an ever-evolving digital terrain. This marks the inauguration of a new era in the evolution of business and IT, where AWS plays a central role in driving meaningful change and advancement.

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CORPORATE SOCIAL RESPONSIBILITY AND SUSTAINABLE DEVELOPMENT GOALS: A CONCEPTUAL STUDY OF THIS RELATIONSHIP

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ABSTRACT

The adoption of the Sustainable Development Goals (UN, 2015) in 2015 established a new paradigm in development through the explicit acknowledgement of the responsibility of corporations to contribute to sustainable development alongside governments and civil society.To accomplish the SDGs, businesses may make a significant contribution. In the same vein, business corporations have pressure to adopt sustainability practices. However, SDGs give businesses a CSR framework that takes into account their current and future demands. Furthermore, CSR is viewed as one of the main factors behind achieving the Sustainable Development Goals (SDGs).This paper examines the relationship between corporate social responsibility (CSR) and SDGs. However, we found that although CSR efforts may not immediately and directly benefit businesses economically, they have the potential to yield strategic benefits over the long term. Moreover, it has been suggested thatCSR funds and development initiatives can be used to leverage this goal. Although all 17 SDGs are important, according to the literature, research has, up to now, given a lot of attention to SDGs 1, 4, 6, 8, 12, and 17.

Keywords: Corporate Social Responsibility, CSR Framework.

1. INTRODUCTION

In today's Era where everybody rushes for the comfort through technology advancement. In the race of technology advancement many resources are depleting day by day, which affect species, water supplies and soil quality and forestation, which lead to scarcity of resources for future generation. From the past decades we are witnessing the global changes in the environment. In result, sustainability term comes into existence.Now the recent implementation of sustainable development goals creates a new paradigm for sustainable development by recognising companies as crucial social actors on par with governments and civil society (Buhmann et al., 2019; Fukuda-Parr & McNeill, 2015). Moreover, businesses are further motivated to collaborate because of the institutional pressure that the regulatory system places on them as a pillar of sustainable development (Lin & Darnall, 2015). Furthermore, CSR is essential to reaching the Sustainable Development Goals (Xia et al., 2018). According to Ede et al. (2016), the Sustainable Development Goals (SDGs) are made up of 17 goals and 169 targets that address a wide range of sustainable development challenges, such as poverty, women, water, the economy, infrastructure, inequality, habitation, and climate. One method to accomplish the SDG concerning women, for example, is to implement CSR practises on women's health in the workplace (Wofford et al., 2016). According to Travis Selmier and Newenham-Kahindi (2017), using CSR reporting frameworks like the Global Reporting Initiative (GRI) offers clear instructions for accomplishing theSDGs, particularly the promotion of inclusive and peaceful communities for sustainable development. To accomplish theSDGs, businesses may make a significant contribution. In the same vein, business corporations have pressure to adopt sustainability practices. However, SDGs give businesses a CSR framework that takes into account their current and future demands. Furthermore, CSR is viewed as one of the main factors behind achieving theSDGs. CSR and SDGs work best together since they both support socioeconomic and environmental advancement. The SDGs establish a new paradigm in sustainable development due to the recognition of the businesses as an essential social actor, next to governments and civil society (Buhmann et al., 2019; Fukuda-Parr & McNeill, 2015). This involvement of businesses as a pillar to achieve a sustainable development also adds as an institutional pressure from the regulatorysystem, which can be seen as extra motivation for businesses to partner (Lin & Darnall, 2015).

2. REVIEW OF LITERATURE

2.1 SUSTAINABLE DEVELOPMENT GOALS (SDGS)

The term "SDGs" stand for Sustainable Development Goals. Sustainable development goals are also known as 2030 agenda or global goals were adopted by the United Nation in 2015 to end poverty, protect planet and ensure that by 2030 all people enjoy peace and prosperity. In 2012, the United Nations hosted a conference in Rio de Janeiro with a focus on sustainable development and its goals. The Sustainable Development Goalsare an international call to action for world leaders to address the environmental, social, and economic issues that many nations confront globally with a quantifiable and attainable goal known as Sustainable Agenda 2030. Moreover, sustainable development goals replaced the millennium development goal which were adopted by United nation in 2000. However, Millennium development goals mainly focused on the poverty, hunger, primary education for all and dealing with deadly diseases all over the world. However, the scope of sustainable development goals has been

broadened which include other significant environmental and social concerns that world is currently facing. The goal of sustainable development goals designed to be interconnected and holistic, addressing issues such as poverty, inequality, climate change, environmental degradation, peace, justice and many more. The idea is to promote a balanced approach to development that takes into account the well-being of people, planet, and prosperity.In 2015 SDGs were adopted by 193 countries in the world, which should be achieved by 2030. SDGs consists of 17 goals with 169 targets. These goals are intended to guide the efforts of governments, organisations, businesses and individuals around the world to work together to address some of most pressing global challenges and create a more sustainable equitable future for all. Progress towards achieving these goals is regularly tracked and reported on by UN agencies and other organisations.

2.2 CORPORATE SOCIAL RESPONSIBILITY (CSR)

The concept of CSR has been developing for many years (Podder et al. 2019). For example; Lee (2008) outlined the development of corporate social responsibility starting in the 1950s and continuing through the following decades. A longitudinal analysis of the CSR literature from 1975 to 2011 was conducted by Sharma and Kiran (2013). From serving as philanthropy's synonym (Singh, 2010), to accomplish the triple bottom line (Alhaddi 2015). Furthermore, Aguinis and Glavas (2012) included the institutional, organisational, and individual levels of analysis in their evaluation of the CSR literature, which was based on 588 journal articles and 102 book chapters. Researchers referring to CSR have used a variety of terminology interchangeably, including corporate citizenship, corporate accountability, business ethics, sustainability, triple bottom line, corporate responsibility, and corporate governance (Agrawal & Sahasranamam, 2016; Aguinis& Glavas, 2012; Alhaddi, 2015; Cornelius, Todres et al., 2008). CSR is a concept that has been around for many years (podder et al 2019). Nonetheless, opinions differ on the best ways to define and use CSR (Lindgreen et al., 2009; Moser, 1986). Hemingway (2002) and Smith (2011) looked into the notions of corporate social responsibility from the perspectives of the economy, society, and environment. For this study, we have adopted the definition given by the World Business Council for Sustainable Development (WBCSD, 1999, p. 3). It defines CSR as "the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as the local community and society at large." The WBCSD define the CSR dates back to 2000, and it had emphasised on the 3Ps—people, planet, and profit (Amaladoss& Manohar, 2011; Desore et al., 2016).

2.3 METHODOLOGY

This study's aim to map the linkage between corporate social responsibility and sustainable development goals. In this study we use the methodological approach use the previous literature by using the search strings on the google scholar. As we use the limited keywords for the study. For example: "CSR" or "Corporate social responsibility" and "SDGs" or Sustainable development goals" or "2030 agenda". Google scholar search was done to retrieve articles whose titles, abstract and keywords contained both word "CSR" and "SDGs" as our study explore the conceptual relationship of SDGs and CSR.

2.4 RESULT AND DISCUSSION

From the past literature we can say undoubtably, CSR is an essential part of organisational's long-term activities. The laws of Indonesia, namely Law No. 25 of 2007 concerning Investment (Undang-UndangPenanaman Modal) and Law No. 40 of 2007 concerning Limited Liability Companies (Undang-Undang Perseroan Terbatas), contain regulations pertaining to Corporate Social Responsibility. Moreover, One of ANTAM's business units, Southeast Sulawesi Nickel UBP, has work units in Pomalaa District, Kolaka Regency, Southeast Sulawesi. As a state-owned mining corporation, ANTAM defines CSR as a corporate commitment that seeks to improve the quality of life by engaging stakeholders in the pursuit of sustainable development goals while adhering to social justice, environmental, and ethical business practises. So, this company arrange various plans to mandate the CSR in their organisation. In addition, this organisation adjusted. The below table explains how Indonesia's company contributing to achieving SDGs with the help of CSR.

SDGs	CSR program of PT ANTAM TbkUBPN Sultra
3. Health	1. Healthy home program 2. Construction and operation of Auxiliary health centre (Posyandu) 3. Revitalization of Posyandu and capacity building for cadres 4. Eradication of Malaria- endemic disease 5. Increase access to maternal and child health service 6. Construction of a General Hospital (RSU)
4. Education	1. School development program 2. Scholarship assistance 3. Exam packages A, B, and C
6. Clean water and Sanitation	Drilling wells and water reservoirs assistance

8. Decent work and economic growth	1. Sago flour processing training 2. MSME development 3. Providing business capital loans
13. Addressing Climate Change	Mixed garden farming
14. Maintaining Marine ecosystem	Planting Coral seedling
15. Maintaining Land ecosystem	300 trees planted

AT Antam Tbk involvement in the SDGs agenda through the CSR program assist the government to attain sustainable development goals. The similar collaboration is required to achieve SDGs more rapidly. India's very own CSR requirement under the Companies Act, 2013, which went into effect in April of 2014, clashed with the SDGs that were established in January of 2016. Furthermore, CSR mandate was developed by India, for India and in Indiataking into account the specific Indian context and is linked to the Inclusive development agenda of the country (Chatterjee and Mitra 2016).

Schedule VII of India's companies Act, 2013		**Sustainable development goals (SDGs), 2016**	
Schedule VII No.	**Schedule VII**	**Goal No.**	**SDGs**
(i)	Eradicating hunger, poverty and malnutrition, promoting preventive health care and sanitation, including contribution to the Swachh Bharat Kosh set-up by the Central Government for the promotion of Sanitation and making available safe drinking water	1	End poverty in all its forms everywhere
		2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture
		3	Ensure healthy lives and promote well-being for all at all ages
(ii)	Promoting education, including special education and employment enhancing vocational skills especially among children, women, elderly, and the differently-abled and livelihood enhancement projects	4	Ensure inclusive and equitable quality education for all
(ix)	Contributions or funds provided to technology incubators located within academic institutions which are approved by the Central Government		
(iii)	Promoting gender equality, empowering women, setting up homes and hostels for women and orphans; setting up old age homes, day care centres and such other facilities for senior citizens and measures for reducing inequalities faced by socially and economically backward groups	5	Achieve gender equality and empower all women and girls
(iv)	Ensuring environmental sustainability, ecological balance, protection of flora and fauna, animal welfare, agro-forestry, conservation of natural resources and maintaining quality of soil, air and water, including contribution to the Clean Ganga Fund set-up by the Central Government for the rejuvenation of river Ganga	6	Ensure availability and sustainable management of water and sanitation for all
		14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
		15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
		7	Ensure access to affordable, reliable, sustainable and modern energy for all
		9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
		12	Ensure sustainable consumption and production patterns
		13	Take urgent action to combat climate change and its impacts
(x)	Rural development projects	8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

(xi)	Slum development	11	Make cities and human settlements inclusive, safe, resilient and sustainable
(vi)	Measures for the benefit of armed forces veterans, war widows and their dependents	16	Promote peaceful and inclusive societies for sustainable development.
(vii)	Training to promote rural sports, nationally recognised sports, para-olympic sports and olympic sports		

The below table shows the India's contribution to the sustainable development goals through CSR.

Schedule VII No.	Schedule VII	CSR Spent (in billion INR)
(i)	Eradicating hunger, poverty and malnutrition, promoting preventive health care and sanitation, including contribution to the Swachh Bharat Kosh set-up by the Central Government for the promotion of Sanitation and making available safe drinking water	3117+355=34.72
(ii)	Promoting education, including special education and employment enhancing vocational skills especially among children, women, elderly, and the differently-abled and livelihood enhancement projects	30.73
(iii)	Promoting gender equality, empowering women, setting up homes and hostels for women and orphans; setting up old age homes, day care centres and such other facilities for senior citizens and measures for reducing inequalities faced by socially and economically backward groups	2.13
(iv)	Ensuring environmental sustainability, ecological balance, protection of flora and fauna, animal welfare, agro-forestry, conservation of natural resources and maintaining quality of soil, air and water, including contribution to the Clean Ganga Fund set-up by the Central Government for the rejuvenation of river Ganga	923+3=9.26
(vi)	Measures for the benefit of armed forces veterans, war widows and their dependents	4.97
(ix)	Contributions or funds provided to technology incubators located within academic institutions which are approved by the Central Government	
(vii)	Training to promote rural sports, nationally recognised sports, para olympic sports and Olympic sports	0.95
(x)	Rural development projects	10.51
(xi)	Slum development	0.09
	Total Amount	93.36

Source: MCA (2017)

The above accounts suggest that there is a nexus between CSR and sustainable development. The nexus points to the contributions of CSR to sustainable development, and vice versa. The mapping makes it evident that all 29 of India's states have SDGs 3, 4, 5, 8, 9, and 15 implemented. However, with the exception of Delhi-NCR, SDGs 5 and 9 are not implemented in the union territories (Podder et al., 2019). However, in India SDG 3, 8, 5, 4, 9 invests the least amount of money in that field for CSR initiatives. In the contrast, Indian firms from all sectors have implemented 716 projects related to SDG 3, which aims to ensure healthy lives and promote well-being for everyone. However, SDG 13 and 17 is not attracting much attention in India. In the banking sector of European banks, neither a single bank wants to achieve all 17 SDGs. In comparison to other SDGs, the majority of banks are putting more effort into achieving SDGs 8 and 13, which are related to economic and sustainable development, SDG 4 is about ensuring quality education, and SDG 13 is about combatting climate change.

3. CONCLUSION

The purpose of our research was to examine the nexus between the CSR and SDGs and which SDGs are implemented and vice versa. We found that sectors spend differently and that there is an inconsistency in type and area of projects undertaken. Even though temporal trends have not been examined due to the paucity of data, the geographic and sectoral CSR expenditures were linked with SDGs (Podder et al., 2019). However, we found that different countries have different level of achieving SDGs. Different countries are focusing on the different goals according to their need. So, it is difficult to measure the country wise SDGs. We found that sectors spend differently and that there is an inconsistency in type and area of projects undertaken. Even though temporal trends have not been examined due to the paucity of data, the geographic and sectoral CSR expenditures were linked with SDGs.

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CONSUMER'S PERCEPTION OF ONLINE SHOPPING: AREVIEW STUDY OF UTTAR PRADESH STATE

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ABSTRACT

The boom of Internet utilization has furnished abrand-new manner of advertising and distribution of products and services. The troubles in online purchasing can also additionally rise up at any time from getting into the internet site for buy to receiving or at the same time as the use of the product or maybe after income service. This examine pursuits to discover the troubles of online purchasers and offers appropriate guidelines to conquer them. Online shops are commonly to be had 24 hours an afternoon and lots of purchasers have net get right of entry to each at paintings and at home. So, it's far very handy for them to keep online.The motive of this examine is to look at the elements that affect the Internet users' belief toward on line purchasing.

Keywords: Consumers Perception, Internet, Online Shopping

1. INTRODUCTION

In the beyond people used to shop for their wished product or offerings from shops and conventional market.It became the simplest choice to satisfy their needs.With the rapid development of the new trend in e-shopping has shown positive outcomes in shopping for conduct to the consumers.However, this appears in order to get entry to without the bodily area is the maximum beneficial techniques to shop for items and services.With increasing use of internet trend by consumer and their shopping electricity they may be inclined to store virtually.This is the motive that variety of firms has developed commercial sites and portals for e-shopping.

Internet isn't always best a networking medium, however additionally a way of Transaction for clients at worldwide market.Internet changed the way customers shop and buy goods and services.Customer is not certain to beginning instances or specific vicinity to buy the goods or services.For instance, purchasers apprehend the want for purchasing a few product, they talk to the Internet to shop for online.They start search for the information and look for all the alternatives and finally make a buy which first-class suits to their needs.Before making final purchase, consumers are bombarded by several factors which limit or influence consumers for the final decision. Many agencies now function at the Internet. Some of companies only have a web presence, called as click-only dot-coms, such as Amazon.com and Flipkart.com.These groups promote services and products immediately to customers thru the Internet.On the alternative hand conventional businesses additionally beautify their marketing strategies to adopt today's requirements and create their own online sales channels and become click-and-mortar companies.Nowadays it's miles tough to discover a corporation that doesn't have an internet presence.E-commerce is divided into four classes thinking about the traits of the shopping for and promoting parties Due to high need of shopping retailers wanted to improve the quality of the online shopping experience for customers. However, the extent of self belief in making bills on line continues to be now no longer growing fully.In a Rupee monitor report in 2022 indicated that "with the expansion of the Internet, e-shopping is growing rapidly in the country, and is currently at 68% of theconsumer using it, due to reason many online retailers trying to recover the excellence of the virtual marketing involvement for the shopper.Online enterprise or on-line purchasing has added large adjustments withinside the possibilities and demanding situations for the enterprise houses.From customers' perspective, the road of demarcation among neighborhood and international enterprise corporations and/or merchandise has narrowed down wherein quality, value, time, convenience, fashion etc. matters a lot. For example, reduce the buyer's evaluation time for purchase, good decision after evaluation and in order to resolve invoice discrepancies and spend less time and ultimately increase the chances for the purchase of substitute products. In addition, clients can recognize on-line buying 24 hours an afternoon from everywhere.Particularly customers of Uttar Pradesh in India with high disposable incomes are willing to spend on online shopping these days but, the self-confidence of payments through Internet have notBeen completely advanced and its want to undertake marketplace pushed method to attain the higher overall performance and value.

Theoretical Background: Various research has used a few recognized theories to explain the web purchasing behaviour.Prior studies has proven that there are numerous elements that have an effect on online purchaser behaviour, however, a whole insurance of all potential factors in one research model is almost impossible. Most studies focused on a few major factors.For example, Koufaris (2002) examined elements which come from statistics systems (era attractiveness model), marketing(ConsumerBehavior), and psychology (Flow and Environmental Psychology) in a single model; Pavlou (2003)Studied interrelationships among customer attractiveness of e-trade and trust, risk, perceived usefulness, and perceived ease of use.

Flipkart is an Indian e-trade company, headquarter in Bangalore, Karnataka, India, and included in Singapore as a non-public constrained company.The corporation to begin with centered on on line ee-e book income earlier than increasing into different product classes consisting of purchaser electronics, fashion, domestic necessities groceries, and life-style products.Shopsy is a small e-commerce company of flipkart which provides good things in cheap prices this led to a very beautiful promotion of flipkart which influenced more and more peopletowards flipkart and people put their trust in flipkart which made flipkart people more also assured to provide good and safe delivery service. Flipkart India's first biggest online shopping platform. People use more flipkart because flipkart gives good quality and service.Flipkart provides also products reviews before purchase any product. And easy purchasing by flipkart.

Amazon is a world-wide e-commerce company. Amazon is the world's largest goods providing company.The benefit of which people can sit at home and buy their favourite things without spending any time and without go anywhere.Amazon takes the responsibility of its customers from payment till their goods reach their home, due to which people's trust in amazon is very high because amazon is atrustworthy company in which there is no scam, so it is very famous all over the world and people all over the world buy from amazon. Amazon company advertisement its very well. So that people are attracted towards him and take advantage of buying his favourite things from him, shop more and more.Amzon company is always ready in the service of its customers and allows shopping anytime and anywhere, so that the customer prefers amazon more for shopping.

Myntra is a major Indian fashion e-commerce company headquartered in Bengaluru, Karnataka, India. The company launched an express delivery service on its app to offer one of a kind of experience by fashion & beauty product platform. Buy latest range of Myntra, Free shipping, cash on delivery, easy returns and exchanges on the Myntra providing service.Myntra company provides the facility of mostly fashion and gift related goods, due to which people are attracted towards it and buy from myntra.Myntra generates good facility to its customers so myntra wants customers do not face any problems by shopping time.

REVIEW OF LITERATURE More people than before are using the web to shop for a wide variety of items, from house to shoes, clothes, bus ticket and airplane tickets.Now human beings have more than one alternatives to pick out their services and products whilst they're buying thru a web platform.

HA, N. T., NGUYEN, T. L. H., PHAM, T. V., & NGUYEN, T. H. T. (2021) The study examines factors that influence shopping intention of online consumers in Vietnam.Studied factors include consumers' attitude, subjective norms, perception of behavioural control, perception of usefulness, perceived risks and trust.The expansion of Theory of Planned Behaviour (TPB) and Technology Acceptance Model (TAM) are used as basic theories.We have surveyed humans who've reports on on-line shopping.There are 836 decided on questionnaires which can be certified for records processing.The collected data are analysed through a process which starts from scale reliability test to exploratory factor analysis (EFA), correlation analysis and regression analysis.The results show that shopping intention of online consumers are positively affected by their attitude, subjective norms, perception of behavioural control, perception of usefulness and trust.In contrast, on-line purchasing goal is negatively suffering from the perceived dangers that on-line purchasing may want to bring.Among those factors, the perception of risk is shown to have the strongest influence to online shopping intention.The findings of this have a look at propose that managers and stores can practice cash-on-shipping approach and layout their internet site with user-pleasant interface to decorate on-line buying aim of consumers.The Government is also recommended to fulfil the law system to reduce customers' perception of financial risks.[1]

Dash, S., & Saji, K. B. (2008) Trust has been empirically established as one of the key attributes in business to customer (B2C) e-commerce.The impact of measures to construct and hold accept as true with in B2C Online Shopping is concern to customer-centric behaviour factors, which can't be managed via way of means of the enterprise firm.The gift examine performed withinside the Indian context explores the function of client self-efficacy and internet site social presence in customer's adoption of B2C on-line purchasing mediated with the aid of using trust, perceived usefulness, and perceived risk. The maximum full-size final results of the examine is that the patron self-efficacy and internet site social-presence have an effect on trust, perceived usefulness and perceived threat withinside the on-line customers, and in turnpositively influence the customer's intention to purchase products online.[2]

Shergill, G. S., & Chen, Z. (2005) The growing use of Internet in New Zealand provides a developing prospect for E-marketers.If E-entrepreneurs recognise the elements affecting on line New Zealand buyers' behaviour, and the relationships among those elements and the form of on line buyers, then they are able to in addition increase theiradvertising and marketing techniques to transform capacity clients into energetic ones, even as keeping existent on-line clients.This paper is a part of large study, and specializes in elements which on-line New Zealand shoppers hold in thoughts at the same time as purchasing on-line.It additionally investigates how one of a kind styles of on line customers understand web sites differently.This studies observed that internet site design, internet site reliability/fulfilment, internet site customer support and internet site security/privateness are the 4 dominant elements which have an impact on client perceptions of on-line purchasing.The 4 varieties of on line New Zealand buyers; i.e., trial, occasional, common and ordinary on line buyers; perceived the 4 internet site elements

differently.These customers have one-of-a-kind opinions of web site design and internet site reliability/fulfilment however comparable opinions of internet site security/privateness troubles, which means that security/privateness troubles are critical to maximum on-line customers.The significant discrepancy in how online purchasers perceived website design and website reliability accounts for the difference in online purchase frequencies.[3]

Javed, M. K., & Wu, M. (2020) This study empirically examines the influence of after delivery services on customer perception of satisfaction, trust, and repurchase intention.Data from 262 survey respondents, analysed through structural equation modelling, indicate three critical after service factors related to customer satisfaction: product exchange, returns, and refunds.Analyses additionally suggest great mediating outcomes of patron delight and consider with after shipping offerings upon repurchase intention.Results screen that consumer delight with offerings additionally mediate the connection among after transport offerings and consumers' consider withinside the retailer.The findings suggest implications for management and future research directions. [4]

Gupta, M., Srivastava, J. N., & Kumar, S. (2019) Purpose-So far, in India, the Internet has primarily been used for enabling communications between individuals through various modes such as e-mailing, messaging or even social networking. The potential growth of online shopping has triggered the idea of conducting a study on online shopping in India.This paper investigates various factors shaping consumer attitudes towards online buying. Design/ Methodology/Approach-Present examine is a descriptive examine; statistics have been amassed from the respondents with the assist of a dependent and undisguised questionnaire. Data accrued thru the survey become analysed and interpreted with the assist of SPSS software program and examined via way of means of statistical strategies which includes Reliability analysis, Frequencies distribution, Cross Tabulation, Factor analysis, One-way ANOVA. Findings-This study aims to identify factors affecting Indian consumers 'attitude toward shopping online.These records will genuinely assist Internet shops to strongly impact Indian shoppers' Practical implications-These findings permit the e-trade corporations to benefit significant perception into expertise the elements shaping the consumer attitude for online shopping. The study also provides a powerful tool for ecommerce marketers for strategy formulation in the areas of marketing, brand positioning etc. [5]

Basha, M. B., & Lal, D. (2019) The primary aim of this research identifies nine important determinants influencing the purchasing intentions for organically produced foods from extant research, with a view to understanding relational significanceamong those key determinants and people consumers from the towns of Bengaluru and Chennai in India.Data become collected from 1300 questionnaires (with commonly closed questions) being dispensed randomly to clients of big supermarkets in those cities.Multiple regression evaluation became used on the important thing determinants, of which: environmental concerns, fitness and lifestyles style, product quality, aid in the direction of nearby farmers, comfort and price, protection and trust,and subjective norms, had a significant influence on consumer purchase intentions.Furthermore, the shortage of purchaser accessibility to organically produced merchandise become a chief hassle for enterprise improvement and this calls for in addition investigation.Results additionally alluded to a awesome want for advertising specialists to consciousness extra interest on highlighting the client advantages of organically produced foods - to swiftly develop this critical market.Study implications recommend the want for coverage makers to teach and undoubtedly sell organically produced ingredients to consumers.Further, a right away subject for the Indian government – is to bear in mind growing suitable techniques in the direction of stimulating marketplace increase and motivating customer buy intentions in the direction of growing sustainable manufacturing and consumption of organically produced products across India.[6]

Ahmad, A., Rahman, O., & Khan, M. N. (2016) With the increasing penetration of the Internet, service quality has become one of the key areas of concern for online shopping sites.Website provider exceptional has come to be a essential thing in making e-trade a hit due to the fact evaluating the capabilities of merchandise withinside the on line surroundings is easier, nearly freed from cost, andsaves on time in comparison to conventional offline markets.To empirically discover the crucial elements that decide perceptions of the provider nice of on line buying sites, researchers followed the eTailQ scale cautioned via way of means of Wolfinbarger and Gilly (2003).Web layout, internet info, consumer carrier, fulfilment, and privateness emerged because the essential elements affecting internet site carrier quality.Findings of the have a look at are anticipated to offer treasured insights to academicians in higher conceptualizing the constructs and additionally assist advertising and marketing practitioners in fine-tuning their techniques with the aid of using addressing the peculiar needs of the Indian online shoppers.[7]

Wang, T. L. (2011, June) While on-line shopping is considered as a special type of e-service, the adoption rate of this service in Taiwan has been paid attention recently.The preliminary adoption of on line buying is the crucial using pressure to similarly impact the use and persisted use of this service.The version of Trust and generation reputation version (TAM) in Gefen et al.has been well studied in on-line shopping and showed that understanding both the Internet technology and trust issue is important in determining behavioural intention to use.The model of Trust in Wu and Chen has been well discussed the consumer intention in on-lion tax.An extension of Trust and Attitude with TAM model would be in more comprehensive manner to understand behavioural intention to use on-line shopping.Furthermore, a large

sample survey is used to empirically examine this framework.[8]

Taechataratip, C. (2002) Internet shopping is concerned specifically with selling and buying "online" or via the Internet_ This includes activities such as information search and evaluation, product selection, and purchasing_ TheInternet allows consumers to visit several Internet "stores", interact with sellers, obtain information on one or several products, and close the sale. [9]

Punyatoya, P. (2018) Loyal clients are taken into consideration extraordinarily precious to any organisation.In order to achieve patron loyalty, on line stores have to take foremost steps as a way to beautify repeat buy behaviour.The modern-day studies examines the effect of pride with preceding interactions, perceived internet site quality, safety and privateness policy, and on-line store credibility on believe toward on-line retailers.Then the connection among customer agree with and loyalty aim became studied.The hypothesised version is proven empirically the usage of facts amassed from 334 consumers.The information have been analysed the use of exploratory issue evaluation, correlations evaluation, confirmatory issue evaluation and regression evaluation.The outcomes indicated that consumers' belief of internet site fine and on line retailer's credibility have sturdy wonderful impact on client trust.Consumer pride because of preceding interplay with an internet store additionally without delay impacts trust.Data further demonstrated that security and privacy policy directly influence consumer trust.In the study, trust is found to directly affect loyalty intention.The study adds to the understanding of the antecedents and consequences of consumer trust in the online shopping environment.Managerial implications and suggestions for further research are provided.[10]

2. CONCLUSION

This paper is based on secondary data. It was also found that Internet shopping refersspecifically to selling and buying “online” or via the Internet. It includes activities such asinformation search and evaluation, product selection and purchasing. The Internet allowsconsumers to visit many Internet and “stores” interact with sellers, obtain information about oneor several products, and close a sale.,

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CORPORATES AND SUSTAINABLE BUSINESS

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ABSTRACT

Sustainable business can be described as the ways and means of carrying a profitable economic activity in an environmentally and socially responsible manner, so that it will not only get profits for the business but also create prosperity for everyone. Corporate strategies are designed and implemented in such a manner that firms and their stakeholders can be satisfied with minimum negative impacts on the society and environment. Our study is about the sustainable strategies of some of the top Indian Corporations serving various sectors and the challenges that they are facing while implementing such strategies and the changes such strategies are bringing to the life of everyone.

Keywords: Sustainability of Business, Sustainable Business Model, Sustainable Corporate Strategies, Responsible Business Practices, Responsible Corporations.

1. INTRODUCTION

'Sustainability of Business' has become a common parlance now. Corporations around the world have been mending their strategies to make themselves a responsible part of the society. The definition of corporation is changing from a 'Profit seeking entity' to an integral 'Social unit'. Earlier the entities which were confined only to the maximization of shareholder's wealth are now working to create 'value for each of its stakeholders.

'Sustainable businesses of today is ideated from the term 'Sustainable Development'. The term 'Sustainable Development' was first made official at the 1992 Earth summit in Rio de janeiro and was officially defined in 1987 by the United Nations World Commission on Environment and Development in its report 'Our Common Future' as 'a development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs'. Taking the same definition as a foundation the corporations today are working to balance the needs of its present and future of stakeholders. [1]

2. SUSTAINABLE ACTIONS OF CORPORATIONS

Corporations are now becoming more conscious that to succeed in the long term they have to be environmentally and socially responsible. Many firms have adopted the 'Triple bottom line'[2] giving the needed attention to the planet and people along with profits. 'A recent Harvard Business Review article confers that the companies are increasingly focused on "ESG" (environmental, social, and governance) issues. The article states that on the environment front, the big companies are setting sustainability goals, issuing sustainability reports and are pledging to become net zero in the near future and; on the social front, they have been expanding inclusion efforts, committing funds to fight racial inequity, and are more vocal about societal issues.[3] Here we are going to discuss sector wise the sustainability efforts of some of the top Indian companies.

FLIPKART (E-COMMERCE): Flipkart Private Limited is an Indian e-commerce company established in Mumbai in 2007. Originally started to sell books online it gradually expanded to all possible categories. As of March 2017, its market share grew to 39.5% of the Indian ecommerce industry]and; as of 2022 the company's assets are worth about US$37.6 billion. Currently, it is the major competitor of Amazon, in the e-commerce sector, in India. The company is also making plans to go public by listing in the USA. The company has been a strong advocate of sustainability and has made it the core of its corporate strategy. The daily operations of the business are designed exceptionally to have minimum carbon footprints. Table below will give an overview of the company's strategies towards sustainability. [4][5]

TABLE 1

	STRATEGIES
ENVIRONMENT	Started E-store 'Flipkart Green' which will sell only globally certified sustainable products.[6] Committed to 100% EVs in its logistics fleet by 2030. [7] Green packaging technique to use packaging material efficiently.[8] 100% electricity from renewable sources by 2030. [9]

	Warehouses are built according to IGBC's Green Building Guidelines.[10] Repair and refurbish electronic devices to save them from going into landfills through Jeeves & F1. [11]
SOCIAL	Partnered with different organizations to work towards eradication of poverty, empowering women, and sustainable economic growth.[12]
GOVERNANCE	Initiatives to be a good corporate citizen. Providing local artisans, farmers, specially-abled and women access to online marketplace through Samarth.

2.1 INFOSYS (INFORMATION TECHNOLOGY)

Infosys Limited is a NYSE listed Indian multinational IT company founded in Pune in 1981. It provides Information technology solutions for industries along with engineering and BPO services. In August 2021, the company became the fourth India company to have a market capitalization of US $100 billion.[13] The company is an early advocate of sustainable business and believes in maximizing shareholder wealth sustainably. It balances the expectations of the stakeholders with the company objectives through its sustainable strategies. Table below gives an overview of company's ESG strategies.[14]

TABLE 2

	DIMENSIONS	STRATEGIES
ENVIRONMENT	Climate Change	Sustaining carbon neutrality through reduction in Scope 1, 2 and 3 emissions by:: Using sustainable infrastructure. Using renewable energy in its power mix. Offsetting remaining emission through social development projects.
	Water	Making campuses to be water sustainable by: Reducing freshwater consumption. Recycling 100% of wastewater within campuses.
	Waste	Investment in recycling technologies to zero down the waste going to landfills.
SOCIAL	Enabling digital talent at scale	Provide employees with new valuable experiences and future oriented skills through various education programs.
	Tech for good	Providing digital infrastructure as a service (IaaS) to social organizations and entrepreneurs to enable them in enlarging the effects of their work.
	Diversity, equity and inclusion	Committed to have 45% women in the workforce by 2030. Programs to develop women employees. Programs for Employees with disabilities Culturally diverse workforce.
	Local communities	Collaborated with social organizations to enlarge its social impact.
	Employee wellness and experience	Open to ideas and opinions. The Health, Safety and Environmental (HSE) Management System. Merit based performance appraisal.
GOVERNANCE	Corporate governance	Building sustainable supply chains. Value-based ethos in company's Code of Conduct and Ethics.
	Data privacy	Applying Privacy Information Management System of global standards. Complying with all applicable regulations.
	Information management	Robust innovation centers and integrated platforms.

2.2 ITC (FMCG, AGRIBUSINESS, PERSONAL CARE, PACKAGING, HOTELS AND CIGARETTES AND CIGARS)

ITC Limited is an Indian Company started in 1910. Its business extends in varied sectors like FMCG, agribusiness,Cigarettes and Cigars, Packaging, hotels and Self Care etc. In July 2023, its market value of equity crossed ₹6 Lakhs crore.[15] It is also the biggest company in the FMCG sector in India. Not only the company's business performance is outstanding but also its work towards sustainability is an epitome for other big companies to follow. Taking 'Responsible competitiveness' at the core

of the company's beliefs, its sustainability strategies are made to be holistic and multidimensional. The below will give you an overview of the sustainability strategies of the company.[16]

TABLE 3

	DIMENSIONS	STRATEGIES
ENVIRONMENT	Climate Change	Energy Conservation Building Green infrastructure. Low emission Transportation
	Sustainable Agriculture	Training farmers for regenerative and climate-smart farming. Providing technical assistance.
	Biodiversity	Creating a value chain free from deforestation. Biodiversity conservation initiatives.
	Water	Improving efficiency in Water Use. Programs for Reviving River Basins.
	Circular economy	Using 100% reusable or biodegradable packaging.
	Chemical safety	Adopting alternatives of hazardous chemicals. Training on the safe use of chemicals.
SOCIAL	Sustainable Supply chain	Decarbonisation of the whole supply chain. Technical support to suppliers on management practices of International Standards.
	Sustainable Product	Building brands with purpose consisting of sustainable products of global quality.
	Workforce	Performance based payments. Learning, development support. Sensitizing employees towards diversity.
	Human Rights	Acknowledge and respect the rights of the human resource.
GOVERNANCE	Corporate Governance	Conducting Business ethically. The Board consists of people of diverse skills, competencies, experience and perspectives.

All the above are huge Indian corporations in their particular sectors. They all have integrated the facets of sustainability into their common business activities. Their sustainability strategies are perfect specimens of the efforts of corporations towards sustainability.

3. CHALLENGES ORGANIZATIONS FACE IN IMPLEMENTATION OF SUSTAINABILITY MEASURES

Most of the well-established companies across sectors are working hard to be responsible corporate citizens. They are progressively integrating ESG facets into their normal commercial activities. They are making sustainability the core aspect of their corporate strategies. As seen above, in the case of three sector wise leaders, they are coming out with comprehensive ESG plans consisting of multidimensional strategies to achieve their sustainability goals. However, the implementation of these strategies may not be smooth sailing. There are challenges which are ubiquitous across organizations and sectors which result in loss of efforts and time in achieving sustainable business goals:

- Designing and implementation of sustainability strategies require collaboration amongst all its stakeholders that includes the government, company management, shareholders, employees, suppliers and consumers. Bringing all of them in accord is a Herculean task that results in delays in execution of sustainability plans of the companies .
- To know the impacts of their sustainability strategies and to further refine them, the companies need reliable data. As most of such data is in qualitative form it is arduous for the companies to first to quantify and then to analyze such data.
- There are a plethora of ESG reporting principles and standards which leads to needless reporting and irregularity in data and further result in repeated efforts and wastage of time.
- Consumers are not aware of the value of purchasing sustainable goods and services, and it results in lack of demand in the market of such products, which ultimately defeats the purpose of a sustainable business.
- Scope 3 emission is the outcome of the activities which are beyond the control of the reporting companies. To overcome it the companies need to partner with their suppliers across the supply chain. The whole value chain needs to be made sustainable. But it is taxing for the companies to track down each and every stage in their supply chain because of the lack of transparency in data collection and analysis.
- Geopolitical tensions in today's world result in procurement of materials which often goes against a company's sustainability mandate. The company is forced to buy from places it had earlier deemed to be unhelpful in achieving its sustainable business goals.
- Implementation of sustainability measures by the companies not only require them to overhaul their current business models but also requires the

refinement of the whole corporate culture.

4. IMPACTS AND WAY FORWARD

Sustainability has given a much needed impetus to India's growth story, while simultaneously keeping environmental damage in check and contributing equivalently towards society. People across the value chain are gaining from the sustainable efforts of the companies. Initiatives are launched to have direct positive impacts on ecology, society and the organization itself. Some of the impacts are:

Environment

- Scarce natural resources are employed efficiently.
- Reduction in the carbon footprints of the corporations.
- Reduction in waste going to landfills.
- Proliferation of the use of renewable energy in corporations.
- Reduction in the release of toxins into the environment.

Society

- Improved overall quality of life.
- Creation of sustainable livelihoods.
- Agriculture is becoming smart and sustainable.
- Women empowerment.
- Education and vocational training helped in creation of better human capital.
- Better opportunities for deprived sections of society.
- Better development of social infrastructure.
- Supply chains across sectors are becoming sustainable.

Economic

- Brand value of the company and its offerings improves.
- Companies are able to avert possible future disputes.
- Companies would have better human resources.
- The whole supply chain would become more dependable.

All organizations across sectors need to forthwith recognize the gains of putting principles of sustainability into actions along with maximization of shareholder's wealth. Sustainability needs to coincide with shareholder's interest, so that the world at large benefits from economic development. [17][18][19]

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AI IMPACT ON CUSTOMER PERCEPTION IN INDIAN BANKING FINANCIAL SERVICES: AN EXPLORATORY STUDY

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ABSTRACT

Banks have continuously adopted the latest technology innovation to redefine how customers interact with them. The introduction of AI in banking apps and services has made the sector more customer-centric and technologically relevant. This research paper evaluates how AI impact on customer perception and overall level of satisfaction while using banking financial services. Security and privacy as major concern of customers. A variety of alternate and null hypothesis were developed. The Primary data was gathered through a structured questionnaire from 200 private and public bank customers. Descriptive Statistics, chi-square, Correlation and Regression analysis used to analysis the data. The research finding depicts that few banks are using AI application to improve their financial services. Chatbots is highest successful application to improve overall customer satisfaction. Customers believes AI reduce security and privacy issue. This research promotes trust and transparency of banking service with customers.

Keywords: Artificial Intelligence, Banks, Customers perception, Financial Services.

1. INTRODUCTION

Over several decades, banks have continually adopted the latest technology innovation to redefine how customers interact with them. Due to Globalization and increased transparency in the economy, banking environment has been more volatile and competitive. Now a days Artificial Intelligence (AI) is an emerging technology. The introduction of AI in banking apps and services has made the sector more customer-centric and technologically relevant. Artificial Intelligence is the ability of a computer to do task that normally requires human intelligence. It is simulation of human intelligence in machine that think and act like human. Artificial Intelligence can be applied in variety of ways to improve banking financial services.

The banking industry has been transformed by AI. Banks are actively implementing new-age technologies. AI is assisting banks in transforming their financial services across the board. Banks are applying AI to identify fraud, improve customer experience, track customer behavior to offer more tailored services, analyze credit history to anticipate risk associated with loan allocation. One of the key use cases of AI in banking financial services is AI based chatbot services. It is modern way to improve customer service experience.

In case of banking, there is a need to visit bank for any financial activity. If there is any query then we have to go to bank and solve, even waste of time and error are more. But now adays people are having busy schedule so they don't prefer go to banks.

2. PROBLEM STATEMENT

This research paper evaluates how AI impact on customer perception and overall customer satisfaction while using banking financial services. Security and privacy as major concern of customers.

This Research endeavors to provide a holistic understanding of the transforming potential of AI in Indian banks.

3. LITERATURE REVIEW

Noreen et al. (2023) suggested that the banking industry can use suitable methods based on artificial intelligence in order to improve the quality of customer services as well as the banks' performance indicators. Karbassi Yazdi et al. (2022) argued that service industry is essential for a sustainable the economic development, especially because unlike traditional sectors the dependence on conventional resources is much reduced and it is open to the application of new and innovative business models. Birau et al. (2021) also suggested that the banking system is a vital mechanism in terms of reaching a sustainable level of development of the global economy.

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Noreen et al. (2023) suggested that the banking industry can use suitable methods based on artificial intelligence in order to improve the quality of customer services as well as the banks' performance indicators. Karbassi Yazdi et al. (2022) argued that service industry is essential for a sustainable the economic development, especially because unlike traditional sectors the dependence on conventional resources is much reduced and it is open to the application of new and innovative business models. Birau et al. (2021) also suggested that the banking system is a vital mechanism in terms of reaching a sustainable level of development of the global economy. Singh and Pathak (2020) defined the concept of artificial intelligence such as "the ability of machines to think on their own and do a task without the help of human beings". The banking industry represents a data - intensive domain very compatible with artificial intelligence or machine intelligence and its such as the following: the field of machine learning (ML), Natural Language Processing also known as NLP, Deep Learning, interactive voice response (IVR), Speech Recognition or speech- to- text, image analysis and many others. Mhlanga (2020) investigated the effect of Artificial Intelligence on the process of digital financial inclusion, while highlighting the importance of aspects such as: chatbots, fraud detection and cybersecurity in the context of improving the quality of services provided to bank customers. Mehdiabadi et al. (2022) suggested that the concept of banking 5.0 is based on the architecture of an industrial revolution generated by artificial intelligence. Moreover, Samartha et al. (2022) examined the impact of mobile-banking applications and online transactions using "Unified theory of acceptance and use of technology" (UTAUT) modified model based on a case study for India which is an emerging country.

Jitendra Kumar and Sudipta Sen gupta, 2023 studies on usage of AI in banking services and effect on customer relationship. The research found that AI can be useful for banks in a variety of customers support management solution, database management services, privacy and security applications.

Reem Al-Araj et.al (2022) conducted their research in Jordanian banking sector and found that Use of AI has significant role in service quality specially five service quality variables Tangibility, Responsiveness, Empathy, Assurance, Reliability have been considered and has direct impact on customer satisfaction.

Geeta (2021), studied on role of Artificial intelligence (AI) in the Banking and financial services in Chennai. Researcher has collected response from customers towards AI application as well bankers. the result of the study that the private banks and private financial institution are using various AI services for the customers benefit so that customers satisfied with their services in addition to that financial services as to improve services more effective manner because some of them are dissatisfied with the banking services. The useful applications of AI in Banking and Financial Services revealed that Chatbots, KYC /AML, Authentication and Biometrics are very useful, as well fraud and detection and prevention is used to secure the data.

Customer satisfaction and differentiation in banking are crucial factors for retaining and attracting customers in a competitive and dynamic market. Banks need to offer personalized, convenient, and reliable services that meet the needs and expectations of their customers. Artificial intelligence (AI) can help banks achieve these goals by enhancing their capabilities in various areas, such as customer service, product recommendation, fraud detection, and risk management. In this article, we will explore how banks can use AI to improve customer satisfaction and retention, and what benefits and challenges they may face (Article, 3 Aug. 2023).

4. RESEARCH GAP

The review of Literature suggested most of studies have been carried out outside of India. Some of them are conducted in Chennai and Delhi in last 3 years and most of them focuses that Chatbot is an important tool of AI to improve customer experience and adoption of AI helps in customer service, Fraud detection, risk management but among all research Security and Privacy is a main aspect of research in banking till date.

AI impact on customer perception and customer satisfaction while using Indian banking financial services have not been explored or adequately addressed in existing literature. So identifying and addressing this research gap is crucial component of my study. It helps establish the Unique contribution and relevance of my research. Here's a potential research gap in my study.

5. OBJECTIVES OF THE STUDY

- To study adoption of AI technology transformed various aspects of Financial Services within Indian banks and how it impacted to the customers.
- To Explore Application of AI in Banks.

6. FORMULATION OF HYPOTHESIS

H1: The adoption of AI in banks significantly enhance transaction safety and positively impacts customer expectations, leading to a more secure and satisfactory banking experience.

H2: The adoption of AI in banks results in faster transaction processing and positively influence customer expectation, leading to an improved perception of banks efficiency and service quality.

H3: The adoption of AI in banks has a positive impact on transaction accuracy and help to improve customer expectation.

H4: The use of chatbots in banking operation is positively

associated with both speed and safety of transaction and help to improve customer satisfaction

7. RESEARCH METHODOLOGY

As an exploratory study, both qualitative and quantitative research methods are used to provide a complete understanding of AI's Impact. This is exploratory study. it is divided the large and small size population. The Primary data were gathered from 200 respondents through questionnaire. 170 respondents are banks customers and asked how the application of AI in banks affected their banking transaction. There were two parts in the questionnaire Part A is Demographic details and Part B is related to research question. The secondary data were collected through different newspaper, magazine, articles, research paper etc. Quantitative analysis: Descriptive Statistics, Cronbach alpha, Correlation and Regression analysis. Random sampling was used to select the respondents for the study purpose. Data Presented with the help spps software.

8. FINDING AND DISCUSSION

As the paper main focus about adoption of AI and its impact on customer perception. The number of statistical tools is applied to reach any conclusion. Here, there variety of hypothesis are formulated. Descriptive statistics, chi-square and regression analysis are applied to know the customer perception.

Table No. 1- Customer satisfaction and safety in AI

Case Processing summary						
	Valid		Missing		Total	
	N	Percentage	N	Percent	N	Percent
Adoption of AI in Indian Banks increase the safety in finacail transaction* customer satisfaction	200	100.00%	0	0.00%	200	100.00%

Table No. 2

Chi-Square Tests			
	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	29.408a	12	0.039
Likelihood Ratio	28.359	12	0.041
Linear-by Linear Association	5.329	1	0.014
N of Valid Cases	200		

Sources: Data collected from primary data and computation of data completed with the help of spss at Significance level is 0.05

The chi square test have been performed to test the alternate hypothesis. The results are given in the table table 1 and table 2. Hypothesis is verified at the 0.05 level of significance. The corresponding p-value for the test is 0.039. Here the value of p is lesser than the significant level 0.05. This result depicts that H1 hypothesis is accepted and suggest that by the adoption of artificial Intelligence banks can make their transaction more secure. As a conclusion that the adoption of AI in banks significantly enhance transaction safety and positively impacts customer expectations, leading to a more secure and satisfactory banking experience.

Table 3. Customer Satisfaction and Easy to use and time saving

Case Processing summary						
	Valid		Missing		Total	
	N	Percentage	N	Percent	N	Percent
Adoption of AI in Indian Banks makes the transaction quick and easy * customer satisfaction	200	100.00%	0	0.00%	200	100.00%

Table No. 4

Chi-Square Tests			
	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	35.695a	12	0.028
Likelihood Ratio	32.805	12	0.037
Linear-by Linear Association	4.329	1	0.015
N of Valid Cases	200		

Sources: Data collected from primary data and computation of data completed with the help of spssat Significance level is 0.05

The chi square test have been performed to test the alternate hypothesis. The results are given in the table table 3 and table 4. Hypothesis is verified at the 0.05 level of significance. The corresponding p-value for the test is 0.028 as shown in the table 4. The pearson chi-square test statistic value is 35.695. The tested p value is lesser than the significant level 0.05. This result depicts that we nullified the null hypothesis and accept alternate hypothesis. It is clear that adoption of Artificial intelligence provides information more accurate and fast which give more customer and improved perception of banks efficiency and service quality. Hence H2 is accepted.

Table 5. Customer Satisfaction and Accuracy

Case Processing summary						
	Valid		Missing		Total	
	N	Percentage	N	Percent	N	Percent
Adoption of AI in Indian Banks makes the transaction more accurate *customer satisfaction	200	100.00%	0	0.00%	200	100.00%

Table No. 6

Chi-Square Tests			
	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	28.356a	9	0.021
Likelihood Ratio	23.542	9	0.029
Linear-by Linear Association	4.329	1	0.01
N of Valid Cases	200		

Above table shows different data value to test the alternated hypothesis 3. The chi square test have been performed to test the alternate hypothesis. The results are given in the table table 5 and table 6. Hypothesis is verified at the 0.05 level of significance. The test statistic is 28.356 in value. The corresponding p-value for the test statistics p is 0.021. Because here the value of p is lesser than significant value 0.05. we have to reject null hypothesis. Therefore, we can draw conclusion that adoption of AI has significant role in providing accurate information to customer that help to build up trust on banking while making any financial transaction. Hence H3 is accepted.

Table No. 8- Chatbots and speed and safety of transaction

Model Summary				
Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.189a	0.02	0.006	0.894

- **Predicators:** (Constant), Chatbots helps to solve the query of customers immediately
- **Dependent variable:** AI Based Chatbots can make transaction speedier and safer.

Annova						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.849	1	1.894	2.869	0.134a
	Residual	139.145	198	0.834		
	Total	149.054	199			

- **Predicators:** (Constant), Chatbots helps to solve the query of customers immediately
- **Dependent variable:** AI Based Chatbots

As given in the table no. 8, there is one dependent variable and one independent variable. i.e., Artificial intelligence-based application i. e. chatbots and speed and safety of transaction respectively. The R value is given in the above table is 0.894 which indicates there is high correlation among both variables. Therefore, we accept alternate hypothesis. And we can draw conclusion that the use of chatbots in banking operation is positively associated with both speed and safety of transaction and help to improve customer satisfaction. Hence H4 is accepted.

9. CONCLUSION

As per the survey conducted, now a days use of Artificial Intelligence is majorly improving customer customers trust and security issue. Previously banks customers were not using internet banking due to lack of privacy, security and trust factor. By the introduction of AI it is very easy to protect customer interest on internet banking and can save them from fraudial actions.

In Conclusion, the exploratory study demonstrates a substantial and positive impact on AI on customer perception with in Indian banking and financial services sector. The implementation of Artificial technology has notably enhanced security protocols, strengthened privacy measure, and significantly improve transaction speed. As a result, customer is likely to improve to perceive theses advancements as beneficial, fostering increased trust and satisfaction. The findings are underscoring the potential for further integration of AI to continually improve overall customer experience in this banking industry.

10. SIGNIFICANCE OF STUDY

By conducting in-depth study of AI impact on Indian banks, this research contributes to advancement of knowledge on both fields of Artificial Intelligence and financial services.

- **Practical Implications:** The study provides practical aspect for Indian banks and helping them make informed decision about AI adoption, Implementation strategies and potential benefits.
- **Innovation and Competitiveness:** with the understanding how, AI is transforming financial services can encourage banks to innovate, develop new services and enhance their competitiveness in market.
- **Risk Management:** Banks can improve fraud detection.
- **Customer experience:** AI can improve customer experience through personalized services, efficient query handling and enhanced interaction

This research promotes trust and transparency with customers.

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THE DIGITAL TRANSFORMATION IN INDIA: BOOSTING MSMES GLOBAL TRADE

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ABSTRACT

The MSME sector in India has grown tremendously active and dynamic during the past fifty years. Through entrepreneurial promotion and significant job creation, the sector significantly contributes to the economic and social growth of the nation. The corporate environment has recently undergone considerable change as a result of the quick and widespread adoption of digital technologies. E-commerce, data analytics, automation, and digital marketing are just a few examples of the domains that fall under the umbrella term "digitalization," which refers to the integration of digital tools and technologies into MSME operations. In order to create an environment that is favourable for MSMEs to undergo digital transformation, the study examines the function of governmental policies and support systems. Also, it analyzes how digitalization has impacted MSMEs. This study is descriptive in nature and based on secondary data which are collected through research papers, articles, websites, etc.

Keywords: MSMEs, Digitalization, Global Trade and Growth.

1. INTRODUCTION

No nation can produce all the goods and provide all the services it needs on its own, which encourages trade between countries and serves as a catalyst for economic growth because exports are necessary to generate foreign exchange and access to a wider market while also assisting the nation by supplying the goods and services that are not available domestically. MSMEs are auxiliary units that are correlated to medium and big enterprises, and this sector has a substantial impact on the overall industrial growth of the nation. MSMEs' business innovations are considerably aiding the growth of entrepreneurial endeavors.(Patil & Chavan, n.d.). Across the country, more than 63 million MSMEs generate goods and services that help to meet the daily requirements of about 11 million people and about 30% of the GDP. In 2021–2022, MSME-related items made up 45.8% of the overall exports of the country from April through September. MSMEs are crucial to the country's potential to experience economic growth. India is receiving more attention now that it aspires to increase its economy to USD 5 trillion. In comparison to the previous year, the amount allocated to the MSME sector in the Budget 2022–2023 increased to INR 21,422 crore from INR 15,699.65 crore. Micro, small, and medium-sized businesses (MSMEs), which contribute significantly to the GDP, the creation of jobs, exports, and lending possibilities, are key drivers of the economic recovery. During the first three months of the fiscal year, 67% of MSMEs temporarily ceased operations as a result of lockdowns imposed by the federal government and individual states. The Indian government has embraced big data, cloud computing, AI, and other emerging technologies to track infections, identify pandemics, find remedies, and restore jobs. Employees can work remotely and with more flexibility thanks to digital tools. (RBL Srivastava, n.d.).Due to the benefits of working with updated information, fewer errors, and a functioning organization, digitalization in company structures has become essential. Digitalization has increased corporate efficiency and increased the effectiveness of its operations, which has decreased expenses. (Kaur et al., 2020). Thousands of Indian MSMEs have benefited from this demand, enabling them to carve out a niche. ("MSMEs as the growth driver of India's exports," 2022).

2. LITERATURE REVIEW

The incorporation of digital technologies into the operations of small and medium-sized enterprises (MSMEs) aims to optimize their functioning, boost efficiency, and encourage inventive practices. Taneja and Wu (2019) emphasize that this process facilitates the simplification of procedures, amplification of competitiveness, and more efficient global market integration for MSMEs. Correspondingly, Das and Li (2019) suggest that the adoption of digital transformation substantially heightens MSMEs' capacity to engage in international trade by minimizing transaction expenses, improving effectiveness, and expanding market reach. DePamphilis and Canbolat's findings (2018) propose that online commerce empowers MSMEs to access a broader customer base, triumphing over geographical impediments. Digital platforms like Alibaba, Amazon, and eBay present

MSMEs with the opportunity to market and vend their goods on a worldwide scale, effectively broadening their global influence. MSMEs face several obstacles when attempting to take advantage of global trade, even with the potential that come with digital transformation. Data security, cross-border legislation, and cyber threats are complicated issues that present major obstacles to MSMEs' smooth integration into the global digital economy, according to research by Khan and Alam (2021). Miah et al. (2020) point out that among the major issues MSMEs confront are scarce resources, a lack of digital skills, and cybersecurity risks. Realizing the full potential of digital transformation requires removing these obstacles. In the foreseeable future, the direction in which small and medium-sized enterprises (MSMEs) are heading in terms of their involvement in global trade, through digital advancement, necessitates coordinated actions to tackle existing hurdles and capitalize on the potential of emerging technologies. According to the recommendations put forth by Tanwar and Prakash (2023), directing investments toward digital infrastructure, fostering skill development initiatives, and offering tailored support services can enable MSMEs to fully utilize the advantages of digital transformation and expand their global market outreach.

3. OBJECTIVES

The key objectives of the study are mentioned below:

- To study the influence of digitalization on MSMEs in India.
- To highlight the government scheme for MSMEs global trade promotion through digital transformation in India.

4. METHODOLOGY

The study is purely based on secondary data sources and is descriptive in nature. The secondary sources of data are collected through published reports, journals, articles, and government sources.

5. IMPACT OF DIGITALISATION ON MSMES

Small and medium-sized businesses are the core of the Indian economy, significantly influencing both family incomes and important economic indexes. The use of digital technologies has altered Small and medium-sized businesses. Through enhanced communication and digital productivity tools like ERP and CRM systems, digital technology also allowed businesses to innovate and operate more efficiently.

Every element of life is significantly impacted by digital technology, which is also changing business in the global economy. It can aid MSMEs in extending their domestic and global market reach. It is transforming MSMEs into new forms more quickly. Anyone may become well-known in the industry with the right digital techniques and high-quality products. ("MSMEs and digital technology: New pillars of the Indian economy," n.d.)

Access to e-commerce platforms enables SMEs to reduce overall spending by optimizing operational and marketing costs including call centers, trade exhibitions, and specific product advertising. SMEs have been able to increase their capabilities and improve the user experience thanks to the development of cloud-based solutions and the freemium model, in which software's essential functionality is provided without charge but additional features, virtual goods, or proprietary functionalities may be subject to a fee. One must utilize digital technology tools and integrate their sales platform on a digital channel in order to succeed in today's fiercely competitive local and global market. In the present data-driven world, businesses that lack online presence expertise or are sluggish to adopt digital channels may struggle to survive. (Singh et al. 2023)

6. GOVERNMENT SCHEMES FOR PROMOTING GLOBAL TRADE OF MSMES THROUGH DIGITAL TRANSFORMATION

Here are some key government policies and initiatives aimed at promoting the global trade of MSMEs through digital transformation:

Digital MSME Scheme: The Digital MSME Scheme, which was introduced by the Ministry of Micro, Small, and Medium Enterprises, aims to increase MSMEs' competitiveness by utilizing digital technologies. The program offers MSMEs financial assistance for implementing a range of digital tools and technology, including e-commerce platforms, cloud computing, and digital marketing.

Export Promotion Capital Goods Scheme (EPCG): The Export Promotion Capital Goods Scheme enables small and medium-sized enterprises (MSMEs) to bring in capital goods to improve their production processes and facilitate technological upgrades.

Digital India Initiative: The Government of India initiated the Digital India program with the goal of transforming the nation into a knowledge economy and society empowered by digital means.

Market Access Initiative (MAI) Scheme: The Market Access Initiative Scheme, put into effect by the Ministry of Commerce and Industry, seeks to bolster the export competitiveness of Indian MSMEs by offering financial aid for activities related to market development.

Trade Infrastructure for Export Scheme (TIES): In order to solve vital infrastructural gaps and improve export competitiveness, the Directorate General of Foreign Trade launched the TIES program. The government offers financial support for the development of export infrastructure and related operations under this program.

Export Credit Guarantee Corporation (ECGC) Schemes: The ECGC provides a favourable environment for MSMEs to participate in international tr by offering a variety of credit insurance programs to reduce the risks connected with export transactions. The Export Credit

Insurance for Small Business program especially addresses the needs of MSMEs,

Start-up India Initiative: The goal of the Start-up India project is to encourage MSMEs and startups by creating an environment that is conducive to innovation and entrepreneurship. Numerous advantages are provided by the program, such as cash support, tax breaks, and streamlined regulatory compliance.

7. CONCLUSION

The rise of digital technologies has revolutionized the operational terrain for MSMEs, presenting unparalleled prospects for development, efficacy, and market extension. With the introduction of digital technologies, MSMEs have the capacity to broaden their international outreach and compete proficiently in global markets. The study shows that MSMEs can significantly benefit from digital transformation in their pursuit of international trade. The degree to which MSMEs may use digital technology to expand internationally depends on a number of important aspects, including e-commerce, digital marketing, and support from the government.

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BIG DATA ANALYTICS: A LITERATURE REVIEW PAPER

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ABSTRACT

In the age of information, decision makers now have access to an immense volume of data at their fingertips, with a staggering amount of information readily available. Big data encompasses datasets that are not only large in size but also diverse in nature and rapidly changing in terms of velocity. This characteristic poses challenges in managing and analysing such data using conventional tools and methods. Due to the swift expansion of such data, it is necessary to thoroughly examine and offer solutions for managing and extracting valuable insights and information from these datasets. Furthermore, decision makers must possess the capability to extract valuable knowledge from diverse and rapidly shifting data, encompassing daily transactions, customer interactions, and social network information. The utilization of big data analytics, which involves the implementation of advanced analytics techniques on large volumes of data, is able to offer such significant value. The purpose of this paper is to examine several analytics techniques and tools that can be utilized for big data, and explore the advantages presented by the use of big data analytics in different decision areas.

Keywords: Big Data, Data Mining, Analytics, Decision Making.

1. INTRODUCTION

As a result, organizations lose the ability to extract valuable information and knowledge, conduct detailed analysis, and provide unity and benefits to the new poor. Every second more and more data is created that needs to be stored and analyzed in order to create added value. The size, diversity and rapid change of such data require a new type of big data analysis and different storage and analysis methods. Such huge amounts of big data need to be properly analyzed and relevant information extracted. A detailed journal search revealed that most of the articles dealing with big data analysis, its tools and techniques, and its applications were conference proceedings and white papers.

2. BACKGROUND

2.1 BIG DATA ANALYTICS

The term "big data" has recently been applied to data sets that grow so large that they become impractical to manage using traditional database management systems. Of course, there is typically business value to be gained from analyzing larger, more complex data sets that require real - time or near - real - time capabilities. However, this leads to a need for new data architectures, analysis methods and tools. Therefore, the next section will take a detailed look at big data analysis tools and techniques, especially starting with large data storage and management and then big data analysis. Then, some of the various big data analytics that are widely used in the context of big data are introduced.

2.2 CHARACTERISTICS OF BIG DATA

Finally, diversity also includes different formats and types of data as different types of applications and methods of data analysis [9]. Using these sources for analytics means that common structured data snow joined by unstructured data, such as text and human language, and semi structured data, such as extensible Mark up Language XML or Rich Site Summary RSS feeds. This characterizes big data quality as good, bad, or undefined due to data inconsistency, incompleteness, ambiguity, latency, deception, and approximation.

2.3 BIG DATA ANALYTICS TOOLS AND METHODS

Such data sets can no longer be easily analysed with traditional data management and analysis techniques and infrastructures.

2.4 BIG DATA STORAGE AND MANAGEMENT

Non - relational databases, such as Not Only SQL (Nosily), were developed for storing and managing unstructured, or non - relational, data. Nosily databases aim for massive scaling, data model flexibility, and simplified application development and deployment. Contrary to relational databases, nosily databases separate data management and data storage. Instead of using mechanical disk drives, it is possible to store the primary database in silicon - based main memory. Alternatively, Hardtop is a framework for performing big data analytics which provides reliability, scalability, and manageability by providing an implementation for the Map Reduce paradigm, which is discussed in the following section, as well as gluing the storage and analytics together. Hardtop consists of two main components: thefts for the big data storage, and Map Reduce for big data analytics [9]. Thefts storage function provides a redundant and reliable distributed file system, which is optimized for large files, where a single file is split into blocks and distributed across cluster nodes. Additionally, the data is protected among the nodes by a replication mechanism, which ensures availability and reliability despite any node failures [3].

2.5 BIG DATA ANALYTICS AND DECISION MAKING

Theme material decision making process has been an important and thoroughly covered topic in research

throughout the years. However, there is a need to analyze external data such as customer markets and supply chains, and the use of big data can provide overall value and insights. In this phase, it is necessary to identify the sources of big data [4]. Additionally, the availability of big data and performance information and its accessibility to operations managers means predictive KPIs, balanced scorecards and dashboards can be used.

3. SOLUTIONS & RECOMMENDATIONS

3.1 CUSTOMER INTELLIGENCE

In addition, social media can be used to inform companies about what their customers like and dislike. By conducting sentiment analysis on this data, companies can be proactively notified when customers abandon or switch to other products and take appropriate action [7]. Big data analytics can also enable the construction of predictive models for customer behaviour and purchase patterns, therefore raising overall profitability[4]. Consequently, big data analytics can benefit organizations by enabling better targeted social influencer marketing, defining and predicting trends from market sentiments, as well as analysing and understanding churn and other customer behaviours[17].

3.2 SUPPLY CHAIN AND PERFORMANCE MANAGEMENT

As for supply chain management, big data analytics can be used to forecast demand changes, and accordingly match their supply. Additionally, decisions on changing suppliers, based on quality or price competitiveness, can be taken by analysing supplier data to monitor performance. Additionally, with the availability of big data and performance information, as well as its accessibility to operations managers, the use of predictive KPIs, balanced scorecards, and dashboards within the organization can introduce operation - al benefits by enabling the monitoring of performance, as well as improving transparency, objectives setting, and planning and management functions [4].

3.3 QUALITY MANAGEMENT AND IMPROVEMENT

Especially for the manufacturing, energy and utilities, and telecommunications industries, big data can be used for quality management, in order to increase profitabilityandreduce costs by improving the quality of goods and services provided. For example, in the manufacturing process, predictive analytics on big data can be used to minimize the performance variability, as well as prevent quality issues by providing early warning alerts. In addition, big data analysis can lead to improved production quality [17]. Additionally, real - time data analysis and equipment log monitoring enable managers to make faster quality management decisions. Additionally, big data analytics can enable real - time monitoring of network demand and capacity forecasting in response to customer behavior. Electronic health record analysis can improve continuity of care for individuals and create a rich data set that can be used to predict and compare treatments and outcomes. Patients can also be monitored remotely to analyze their adherence to prescriptions and improve medication and treatment options [14]. Moreover, by analysing information from distributed sensors on handheld devices, roads, and vehicles, which provide real time traffic information, transportation canbetransformed and improved. Traffic jams can be predicted and prevented, and drivers can operate more safely and with less disruption to the traffic flow. Such a new type of traffic ecosystem, with intelligent connected cars, can potentially renovate transportation and how roadways are used [22]. Accordingly, big data applications can provide smart routing, according to real time traffic information based on personal location data. Furthermore, big data can be used for better understanding changes in the location, frequency, and intensity of weather and climate. Citizens and weather - dependent businesses such as farmers, tourism and transport companies could benefit from this. Furthermore, by using new sensors and analytical techniques to develop long - term climate models and more accurate weather forecasts, weather - related disasters can be predicted and preventive or adaptive measures can be taken in advance[22].

3.4 RISK MANAGEMENT AND FRAUD DETECTION

In addition, internal and external big data can be analyzed to provide a complete and dynamic assessment of risk exposure. Using powerful analytics, risk profiles that individual departments manage in isolation can be integrated into company - wide risk profiles. This can help reduce risks by providing decision makers with an understanding and awareness of the different types of risks and their relationships. Furthermore, new big data tools and technologies can provide for managing the exponential growth in network produced data, as well reduce database performance problems by increasing the ability to scale and capture the required data. In addition, customer intelligence can be used to model normal customer behaviour, and detect suspicious or divergent activities through the accurate flagging of outlier occurrences. Furthermore, providing systems with big data about prevailing fraud patterns can allow these systems to learn the new types of frauds and act accordingly, as the fraudsters adapt to the old systems designed to detect them. Also, SNAs can be used to identify the networks of collaborating fraudsters, as well as discover evidence of fraudulent insurance or benefits claims, which will leadless fraudulent activity going undiscovered [4].

4. FUTURE RESEARCH DIRECTIONS

After all, any new technology, if applied correctly, can bring several potential benefits and innovations, not to mention Big Data, which, if approached correctly, is an exciting field with a lot of promise future is. Despite all the challenges faced by traditional data management, big data increases these challenges exponentially due to the

additional volume, speed and variety of data and sources that must be processed. We believe that big data analytics is crucial in the age of data overload and can provide unforeseen insights and benefits to decision makers in various areas.

5. CONCLUSION

In addition, some tools and techniques for big data analysis were discussed. By applying such analytics to big data, valuable information can be extracted and used to improve decision - making and support informed decisions. In summary, a few different areas where big data analytics can support and support decision making have been explored. In addition, its benefits can be applied to various sectors and industries such as healthcare, retail, telecommunications, manufacturing, etc.

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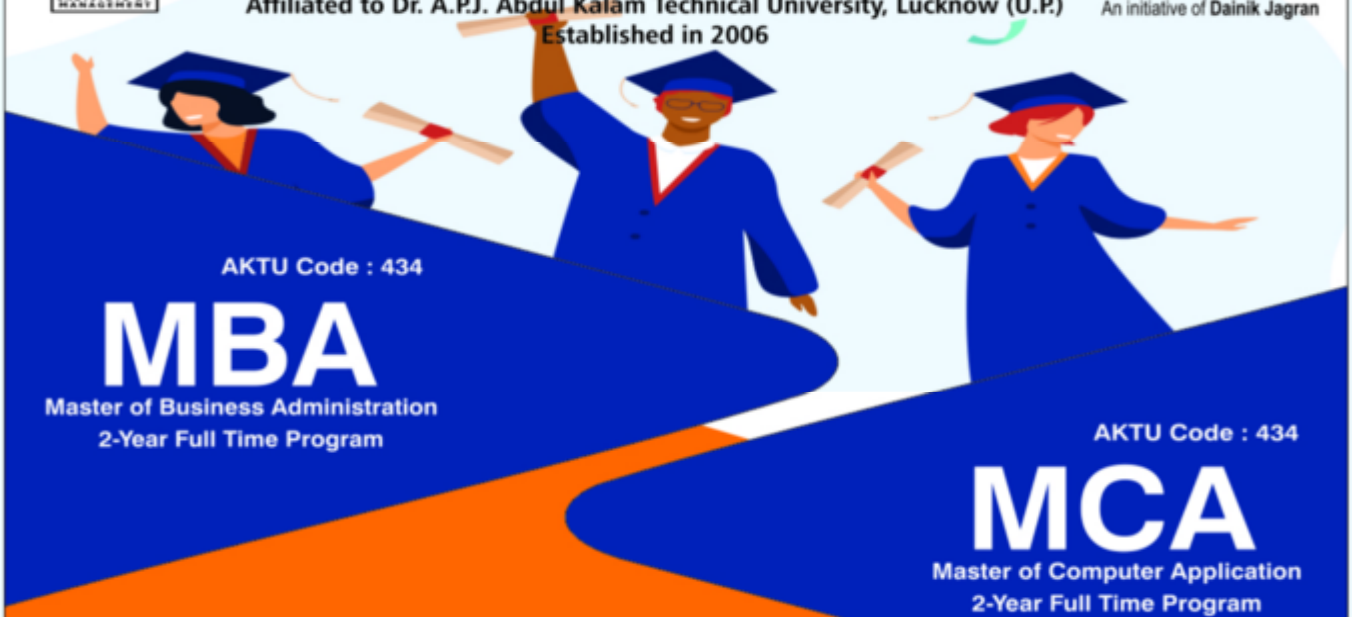

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