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A REVIEW PAPER ON WOMEN SAFETY APPLICATIONS

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ABSTRACT

Women's safety is becoming a major concern these days and is also affecting the population in terms of being secure. The government of India have some preventive measures in order to reduce these situations by launching some safety apps that have their own features. 112 India that is launched by the Indian government is an app that sends SOS alerts in emergency situations with just a single tap. My Safetipin and Raksha are the applications that provides essential features like GPS tracking, emergency contacts, and notifications for dangerous regions. It also helps users find the safest routes and alerts their loved ones if they choose an unsafe path. Also, these apps send alerts to emergency contacts just by pressing the volume button, even without opening the app. It also allows users to dial 100 and send SMS alerts where there is no mobile internet. In this survey paper we reviewed various different available application software in concern of security alerts for women safety.

KEYWORDS: *Women Safety, Security Alerts, GPS.*

Introduction

The growing concern for the safety of women and the increase in crimes against women in various cities, highlight the need for advanced surveillance and analytical solutions to protect women from various possible threats. We need a promising approach to address these issues through real-time threat detection software. Women safety applications aim to help women stay safe and and ask for help whenever they need. The major concern that arises in this modern world is to keep women safe at each and every working place but it is only possible by using emerging technologies.

Some of the existing literature include:

- A UN Women-supported survey in Delhi found that 95% of women and girls feel unsafe in public spaces. The survey also found that 51% of men reported committing sexual harassment or violence against women and girls in public spaces.
- A World Bank research analysis found that there are gaps in the legal and supportive frameworks available to prevent and respond to violence against women.
- A study found that IoT-based safety systems for women can deliver prompt and efficient responses in emergency scenarios.

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There are other various aspects such as Women's safety also include physical, emotional, and psychological aspects. The United Nations defines it in terms of freedom from violence, harassment, and discrimination which is the ultimate goal of each and every application aiming woman's safety. A body of research focuses on various forms of violence, including domestic abuse, sexual violence, and human trafficking. The World Health Organization reports that approximately 1 in 3 women globally experience physical or sexual violence in their lifetime and this is why various studies emphasize the need for comprehensive prevention strategies that include education, legal reform, and support services and these kind of safety applications that are easy and quick to use.

Various empowerment initiatives, including self-defence training play a vital role in improving women's safety. Programs that engage men and boys in conversations about gender equality have also been found to be effective in reducing violence and fostering safer environments.

Purpose

The major concern that arises in this modern world is to keep women safe at each and every working place but it is only possible by using emerging technologies.

- Apps like My Safetipin which helps women make safer choices regarding their means of travel and location, as it has a safety score on different locations. A key tool of the app is its Safety Audit feature which analyses particular areas based on the physical and social infrastructure parameters.
- Various home security systems that come with motion sensors, cameras and alarms that allow women to have more control over the safety of their environment and particular living situation.
- A recent technology collaboration between ADT and Google called ADT Self-Setup is great for home safety. This technology has a bunch of cool safety features such as motion sensors, window and door sensors, temperature sensors for natural disasters and a smart hub that allows users to control the different sensors.
- But the real threat for the safety of women in outside the house and for that there are wearable devices such as smart jewellery or bracelets such as The Flare bracelet which can alert trusted family members or authorities of your location through GPS location sharing. This is done with a hidden button discreetly located on the side of your Flare.
- Other technologies that are used include various security system that uses an ARM controller for the hardware device and a radio frequency signal detector to detect hidden cameras

Methodology

In the context of a women's safety application, a literature search basically involve exploring research and studies focused on how technology, such as CCTV-based surveillance systems, can enhance safety by detecting unusual behavior. This search look into how different algorithms and machine learning models have been used to process real-time video data, identify potential threats or abnormal activities, and send alerts in critical situations. The literature also address key considerations such as the accuracy of threat detection, data privacy, and the efficiency of alert mechanisms in reducing response times.

Critical analysis of the literature highlight challenges like ensuring the reliability of detection systems in diverse environments and minimizing false alarms. It also examine how user feedback, bias in threat recognition algorithms, and integration with law enforcement can improve system performance. Future directions include real-time threat analysis, improved explainability of detection algorithms, and enhanced privacy protections to ensure the system's acceptance by the public while maintaining safety.

Women's safety applications have emerged as vital tools to enhance personal safety and provide immediate assistance in emergencies. This report critically analyzes several popular apps, examining their features, effectiveness, and areas for improvement.

- **Emergency Alerts:** Users can send instant alerts to predefined contacts or emergency services with their location as soon as the feel something doubtful.
- **Location Tracking:** Real-time GPS tracking enables friends or family to monitor a user's whereabouts and keep track of everything happening.

- **Panic Buttons:** One-touch panic buttons facilitate quick communication during distress and easily send the alerts.
- **Safety Tips and Resources:** Many apps provide safety tips, self-defence tutorials, and access to local resources.

This comparison highlights key features, strengths, and weaknesses of several popular women's safety applications:

App Name	Key Features	Strengths	Weaknesses	Target Audience
bSafe	• Emergency alerts • Live streaming • Fake call option	• User-friendly interface • Multiple safety features • Location sharing	• Some users report occasional bugs • Limited integration with local authorities	Women of all ages, students
SafeTrek	• Panic button • Location sharing • Alert contacts	• Simple design • Quick response feature	• Limited safety resources beyond alerts • Subscription required for full features	General public, urban users
Life360	• Family location tracking • Emergency alerts • Driving reports	• Comprehensive family safety features • Reliable location tracking	• Focuses more on family safety than individual women's safety • Privacy concerns with data sharing	Families, parents
Circle of 6	• Quick alert to friends • Safety resources • Location sharing	• Strong emphasis on community support • User-friendly design	• Limited features for direct emergency response • Depends on friends' availability	College students, young women
Noonlight	• Panic button • Direct connection to police • Location sharing	• Fast response time to emergencies • User control over alerts	• Requires active monitoring for best results • Limited free features	Urban users, individuals in high-risk areas
Hollaback!	• Community reporting • Bystander intervention tips • Safe spaces map	• Focus on awareness and education • Community-driven approach	• More of an educational tool than an emergency app • Not designed for direct emergency response	All women, activists, community members

Data Source

Research papers on women's safety analytics often cover a broad range of studies that focus on how technology can enhance safety for women in public and private spaces. These studies examine various aspects of analytics, including real-time surveillance systems, wearable devices, mobile apps, and machine learning models that detect unusual activities or potential threats. Many papers emphasize the use of CCTV systems, where analytics software processes video feeds to identify abnormal behavior or potential safety risks, sending alerts to authorities in real time.

Additionally, studies in these papers explore the effectiveness of integrating multiple data sources, such as geolocation, past crime data, and social media activity, to create more comprehensive safety solutions. The use of artificial intelligence (AI) and machine learning to predict and prevent incidents is a central theme, as researchers work to improve accuracy, minimize false positives, and address privacy concerns. Various challenges, such as the cold start problem in analytics (where systems struggle to predict threats for new or unfamiliar situations) and biases in threat detection, are frequently discussed. The papers suggest several approaches to enhance systems for better prediction and response to violence. These include refining algorithms with feedback loops, utilizing social network analysis, and adopting hybrid models to improve outcomes.

In terms of data, some key points include:

- **Global Prevalence of Violence:** The World Health Organization (WHO) reports that around one in three women globally have faced physical or sexual violence at some point in their lives, most often by intimate partners. This statistic underlines the pervasive issue of gender-based violence across various cultures and regions.
- **Domestic Violence:** A 2021 study by UN Women revealed that 47% of women aged 15 and above have endured some form of violence during their lifetime. The issue became even worse during the COVID-19 pandemic, with reports indicating a global surge in domestic violence, as many women found themselves confined at home with their abusers during lockdowns.
- **Urban Safety Concerns:** Research by UN-Habitat shows that 73% of women living in urban areas feel unsafe walking alone at night. Factors contributing to this anxiety include poor street lighting, ill-designed public spaces, and high crime rates. Women’s perception of safety greatly depends on their location, influencing their freedom and ability to move around.
- **Sexual Harassment**: A survey conducted by the Equal Employment Opportunity Commission in 2017 found that 81% of women have experienced sexual harassment at some point in their lives. This includes incidents at workplaces, in public spaces, and online, reflecting the widespread nature of the problem.
- **Technology and Safety:** A 2020 study by Pew Research Center indicated that 64% of women have used technology for safety-related reasons, such as using GPS tracking or safety apps. While technology offers valuable tools for enhancing safety, it also raises concerns regarding privacy and data security.
- **Intersectionality:** Studies show that women from marginalized groups, including ethnic minorities, LGBTQ+ communities, and those with low incomes, are at greater risk of violence. Research from the Institute for Women’s Policy Research highlights that women of color face violence at disproportionately higher rates than white women, emphasizing the importance of developing safety interventions tailored to specific needs.
- **Policy and Legal Frameworks:** According to a review by the Council of Europe, only 70% of its member countries have laws that specifically address violence against women. Many nations still lack comprehensive legislation and enforcement systems, which limits their ability to protect women and hold offenders accountable.
- **Community Programs:** Community-based strategies have proven effective in reducing violence against women. Programs that involve men in conversations about gender equality and non-violence have led to notable reductions in domestic violence in several areas, as reported by the International Rescue Committee.

Review of Machine Learning in Womens Safety Applications

Machine learning (ML) plays a crucial role in enhancing women's safety by detecting and responding to threats in real-time. Research shows how ML is applied in surveillance systems, like CCTV cameras, to automatically identify unusual or dangerous behavior. These systems analyze people's movements and actions to spot potential threats, such as stalking or harassment, and send alerts to security staff. As the algorithms are trained with more data, they become better at accurately identifying suspicious activities.

ML is also used to predict where or when women might be at higher risk, based on past data like crime reports. This helps authorities and communities create safer environments by highlighting dangerous areas or times when incidents are more likely to occur. Additionally, natural language processing (NLP), another branch of ML, can analyze emergency messages or social media posts for signs of distress, enabling quicker responses to potential threats.

While these technologies are promising, they come with challenges. For instance, a lack of sufficient data can limit the accuracy of predictions, and there are concerns about privacy, especially with continuous monitoring. Current research aims to improve the precision of these systems, minimize false alarms, and ensure they are fair and transparent. Moving forward, combining data from multiple sources and addressing privacy concerns will be essential to making machine learning tools even more effective in improving women's safety.

By integrating ML into women's safety applications, the technology offers numerous benefits, such as better threat detection, personalized alerts, and real-time data analysis. These advancements greatly enhance the efficiency and response capabilities of safety systems, ultimately creating a safer environment for women.

Scope

Women’s safety applications have a wide scope, and they cover several essential areas to ensure protection and support in various situations. Here's an overview:

- **Emergency Alerts:** Many apps provide the option for users to send immediate alerts to their friends, family, or local authorities during emergencies, often by detecting their real-time location.
- **Location Tracking:** Some apps enable real-time location tracking, allowing trusted contacts to follow the user’s movements.
- **Community Support:** Certain platforms connect users to local resources such as shelters, support groups, and allow users to share safety tips and experiences, fostering a supportive network.
- **Self-Defense Training:** Many apps offer tutorials and guidance on self-defense techniques, empowering users with practical knowledge to protect themselves in threatening situations.
- **Safe Route Navigation:** Navigation tools in these apps may suggest safer travel routes, based on user feedback and crime statistics, helping users avoid risky areas.
- **Incident Reporting:** Some apps allow users to report incidents of harassment or violence, contributing to the visibility of local crime data and raising awareness in the community.

This diverse range of functions makes women’s safety apps a valuable resource for prevention, protection, and immediate response in potentially dangerous situations.

Conclusion

We conclude that to build a software which will take real time videos from public places as inputs and will detect, recognize the faces and will classify them as male and female and count their number. If the number of females is less than male then the system will keep an eye on that place. These provided input will be analyzed to see if there is any threat to the women present in the scenario and the alert message will be sent to the supervisor and they will take the action if required.

By using advanced technologies like data analytics, machine learning, and artificial intelligence, the project enables real time monitoring, real-time alerts, and predictive insights to safeguard women in various environments.

It reduces the gap in traditional safety measures, offering a data-driven approach to identifying high-risk areas, recognizing unsafe situations, and enabling quicker responses.

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FILM INDUCED TOURISM: A STUDY ON THE FACTORS INFLUENCING THE LIKELIHOOD TO TRAVEL

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ABSTRACT

Films are an integral aspect of daily life and serve as a significant source of entertainment globally. Every film industry tells the story of the places that its members are from. For example, the 2019 film Kesari tells the story of the battle of Saragarhi, which took place in modern-day Pakistan. Movies have an impact on people's decisions to travel as well. Since the area is thought to have been a part of the films, it has become a popular tourist destination. Film induced tourism refers to traveler exploration of locations and landmarks that have become well-known because to their involvement in motion pictures. This study examined the ways in which films persuade individuals to travel. The primary elements that influence people's decisions to travel are examined in this research. The study also includes the demographic characteristics since various groups of individuals have different attitude. Analysis was done sing Warp PLS 7.0 and IBM SPSS Ver. 26 for the 200 responses collected from different parts of Kerala. It was identified that economic factors were not significantly contributing towards the travel decision.

KEYWORDS*: Travel Decision, Economic Factors, Traveller Identity, Empathy, Travel Curiosity.*

Introduction

Movies are a form of visual storytelling that has captivated audiences for over a century. They produce a narrative experience that may arouse feelings, encourage thinking, and take viewers to new realms by fusing together a variety of artistic components, including acting, cinematography, music, and editing. With the development of motion picture cameras in the late 19th century, cinema history began. Movies are not just for amusement; they have several uses. They can give escape, question social standards, reflect society concerns, or just be a way to unwind and enjoy yourself. In addition, films have a significant cultural influence, forming our opinions, influencing style, presenting memorable characters, and even spurring inventions in the real world.

Travelling to new places outside of one's normal surroundings for pleasure, recreation, or business is referred to as tourism. It includes a broad variety of activities, such as adventure travel, eco-tourism, culinary tourism, and sightseeing and cultural discovery. In the global economy, tourism is vital because it fosters cultural exchange, infrastructural growth, and job creation. India's tourism sector is essential to the country's economic development and employment generation. By FY27, the travel sector in India is forecast to have grown from its estimated $75 billion in FY20 to $125 billion. Thanks to inexpensive airfares and the availability of substitute lodging options run by internet businesses, travellers can now afford to travel much more easily and customise their schedule and experiences to their preferences.

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Travellers who explore places and sites that have gained popularity as a result of their inclusion in films and television shows are engaging in film tourism, also known as film-induced tourism. The phrase also refers to visits to movie or television-related theme parks and production studio tours. Recent years have seen a significant expansion of the Indian film industry, which has produced internationally acclaimed and successful motion pictures. As a result, there has been a rise in interest in film-related travel to India, with travelers hoping to see the settings and encounters from their beloved films.

The release of the movie "3 Idiots" resulted in a notable rise in tourist arrivals in Ladakh, which reached 2.4 times the normal number of visitors and have been steadily increasing in the past several years, according to the case studies included in the EY FICCI (2024) Report. In a similar vein, the film "Krish" was a unique partnership with the Singapore Tourism Board, leading to a seven million increase in Indian visitors to Singapore. With its opulent palaces and forts, Rajasthan has been a popular setting for Bollywood films, including "Bajirao Mastani" and "Jodha Akbar"(Film Tourism,2019)

The importance of researching film-induced tourism rests in its ability to provide light on how travelers' impressions of various locations are shaped by films, and how this affects their intents to visit such locations. The findings of the research can help stakeholders in the tourism sector better use the media's potential to improve destination perception and draw in more tourists by shaping destination marketing plans.

Review of Literature

The concept of film-induced tourism, in which travel decisions are influenced by films, has attracted a lot of attention lately. This phenomenon has been seen in a number of nations, including Ireland, where travel to see films like "The Quiet Man" is still popular decades after they were first released (Bolan & Davidson, 2005). The rising middle class income in India has resulted in a rise in outbound tourism, with film selection being a major factor (Mitta & Anjaneyaswamy, 2013). Movies are thought to be more genuine than advertising, which influences people's desire to travel (Macionis, 2008). "The Lord of the Rings" in New Zealand, "Troy" in Turkey, and "Braveheart" in Scotland are a few successful instances of film-induced tourism (Raj, 2018). As travel destinations look to stand out in a crowded market, the link between popular media and tourism is growing more and more significant (Macionis, 2008). Tourism boards and marketers may use film-induced tourism to draw tourists and improve location appeal by having a better understanding of this phenomenon.

Empathy and Travel Decision

Film-induced travel has drawn a lot of interest as a potent technique for destination promotion. Empathy and attitude are two ways that storytelling components in travel blogs, such narrative structure and aesthetics, might affect readers' travel plans, according to studies (Hsiao et al., 2016). In a similar vein, viewers' attitudes and travel intentions are impacted by their exposure to picturesque locations in films, with attitudes significantly influencing intentions (Chen, 2017). Through empathy, identity conversion, motivation transfer, and demand modification are all part of the internal process of film-induced tourism (Yi et al., 2022). Moreover, place attachment, engagement, and travel intention are all positively impacted by destination placement marketing in films, with involvement serving as a bridge between placement marketing and intention (Chen, 2023). Du et.al., (2020) examined how empathy and persuasion function in tourism micro-movies and discovered that they had a big influence on people's desire to travel. A useful application of these results was given by Beeton (2015), who talked about how Tourism Australia uses emotive and cinematic components to market the nation. These results imply that films and TV shows may effectively promote travel by displaying places and establishing an emotional bond with viewers, which in turn influences their desire to travel. Thus the researcher proposed the hypothesis as:

H_1: Empathy of the traveller influences the travel decision

Economic Factors and Travel Decision

Travel decisions and behaviours are greatly influenced by economic reasons. Among Chinese urban dwellers, income, education, and paid vacation days are important indicators of the intention to go abroad (Huang & Wei, 2020). Travelers typically select less expensive locations in order to save money during economic downturns (Rodrigues & Mallou, 2014). Economic considerations are important, but social media also influences consumers' inclinations to make travel-related purchases. User attitudes and purchasing intents on social media platforms are favourably influenced by variables such user satisfaction, information dependability, and perceived value in travel services information (Kaperonis, 2020). All of these research show how social media, economic situations, and personal characteristics interact intricately to influence people's decisions and behaviours when they travel. Hence the researcher proposes the second hypothesis as

H_2: Economic Factors influences the Travel decision of the Traveller.

Traveller Identity and Travel Decision

Film-induced tourism is becoming more and more well-known as a potent instrument for destination marketing and shaping traveler intentions. According to studies, seeing a destination depicted in a movie might increase viewers' familiarity with and want to visit that location (Cabuyao et al., 2023). Yi et al. (2022) have identified that the internal process of film-induced tourism entails identity conversion, motivation transfer, and demand modification, with empathy serving as a critical mediating factor. Specific location qualities may have a bigger impact on travel intentions than the place's overall image, especially after watching a film (Hahm & Wang, 2011). It has been discovered that place attachment, engagement, and travel intents are all strongly impacted by destination placement marketing in films, with involvement acting as a bridge between placement marketing and travel intention (Chen, 2023).

H_3: Traveller identity influences the Travel decision of the Traveller.

Traveller Curiosity

Studies reveal that films and short videos have a big impact on how people see a place and how likely they are to go. Chen (2023) discovered that viewers' engagement, place connection, and desire to travel are all positively impacted by the location placement in movies. Chu & Tsai (2016) also showed that emotional and cognitive representations of a location and travel intentions can be influenced by brief video snippets that lack narratives. According to Hudson et al. (2011), scenery and cultural attractions have a particularly strong influence on how viewers perceive various cultures' destinations in films. Hahm & Wang (2011) found that, particularly after watching a movie, some characteristics of a place had a greater influence on travel intentions than the picture as a whole.

H_4: Traveller curiosity influences the Travel decision of the Traveller.

Conceptual Model

Based on the review of literature the following conceptual model was identified with Empathy, Traveller Curiosity, Traveller Identity and Economic Factors as the independent variables and travel decision as the dependent variable for further study.

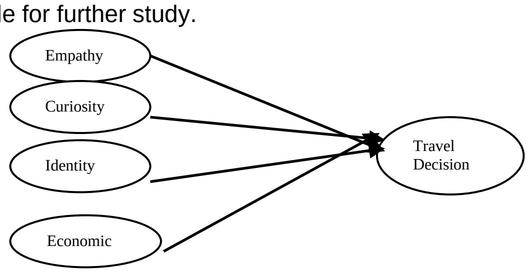

Fig 1: Conceptual Model

Methodology of the Study

The study design selected for this project is a descriptive one. The preparation of questionnaires served as the primary data collection method. Multiple five-point Likert-type scales, with 1 denoting "strongly disagree" and 5 denoting "strongly agree," were used to measure each of the constructs. 500 people were given the questionnaire, and 200 of them answered it, yielding a 40% response rate. Using Daniel Soper's sample size calculator, the minimum sample size required for the study to achieve the acceptable statistical power of 0.95 was 152, hence the 200 samples that were collected was considered suitable for analysis. A total of 23 items pertaining to the five variables and 4 demographic questions were framed. Warp PLS 7.0 was used for the structural equation modelling (SEM) analysis, and T-test and ANOVA using IBM SPSS version 26 were used to determine differences between the main demographic groups. The respondents were 53.2% males and 46.8% females. 6% of respondents were having educational qualification less than gradation, 22.4% were graduates and 71.6% were having higher educational qualification with post gradation and above, 19.4% were married and the remaining respondents were unmarried.

Data Analysis

The study design selected for this paper is descriptive. IBM SPSS ver. 26 and Warp PLS 7.0 were used to evaluate the 200 questionnaire responses that were gathered from the primary source.

Reliability and Validity

Using Cronbach's alpha to gauge the constructs' reliability, it was discovered that all of the constructs had values greater than 0.7, indicating satisfactory reliability (Nunally, 1978). All values were determined to be greater than 0.5 when the average variance retrieved was used to assess the validity of the constructs. Thus, it was determined that the constructs were valid (Fornell & Larcker, 1981).

Table 1: Reliability and Validity

	TC	EC	TI	TD	EM
Cronbach's Alpha	0.823	0.802	0.774	0.802	0.830
AVE	0.654	0.562	0.528	0.633	0.602

Source: Primary Data

[TC-Traveller Curiosity, EC-Economic Factors, TI-Traveller Identity, EM-Empathy, TD-Travel Decision]

Table 2 depicts the Model fit indices and all the fit indices were deemed to be found fit for further analysis.

Table 2: Model Fit Indices

Model fit and Quality Indices	Criteria Fit	Model Values
Average Path coefficient (APC)	Accepted if p <0.001	0.233 where p<0.001
Average R-square (ARS)	Accepted if p<0.001	0.588 where p<0.001
Average adjusted R-Squared	Accepted if p<0.001	0.580 where p<0.001
Average block VIF (AVIF)	Acceptedif ≤5	1.772
Average full collinearityVIF	Acceptedif ≤5	1.982
TenehausGoF(GoF)	Small≥0.1 Medium≥0.25 Large≥0.36	0.592
Symphson's paradox Ratio	Accepted if ≥0.7	1.000
R-square contribution Ratio	Accepted if ≥0.9	1.000
Statistical suppression Ratio	Accepted if≥0.7	1.000
Nonlinear bivariate causality direction ratio (NLBCDR)	Accepted if ≥ 0.7	1.000

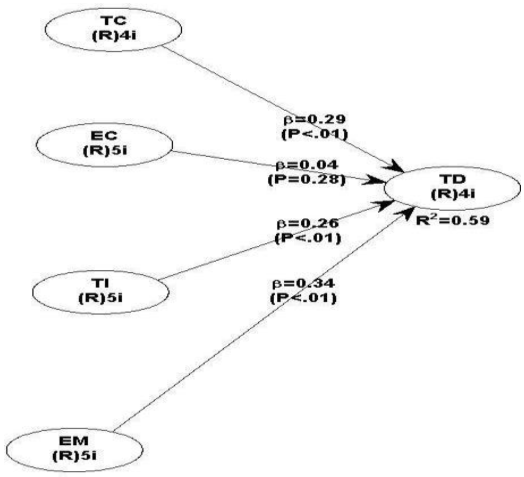

Fig. 2: Structural Model

According to the model, there is a significant and positive relationship between travel curiosity, traveller identity and empathy towards travel decision whereas economic factors do not significantly influence the travel decision. Value of R^2 is 0.59 thus 59% of the Travel Decision is explained by Traveler Identity, Traveler Curiosity and Empathy.

Table 3: Hypothesized Relationship

Hypothesized Relationship	β value	Sig.	Result
TC→ TD	0.29	<.01	Supported
EC → TD	0.04	0.28	Not Supported
TI → TD	0.26	<.01	Supported
EM → TD	0.34	<.01	Supported

[TC-Traveller Curiosity, EC-Economic Factors, TI-Traveller Identity, EM-Empathy, TD-Travel Decision]

R squared value was found to be 0.59, making the model explaining 59% of the variance by the variables Traveller Curiosity, Traveller Identity and Empathy. The β values shows that a higher influence explained by empathy (β=0.34), followed by curiosity (β=0.29) and lastly the traveller identity (β=0.26). Also it was identified that economic factors do not play a huge role in the Travel Decision.

Further analysis was done using demographic variables. T test was used to identify whether gender has an influence on these variables and it was identified that there was no significant differences between male and females towards travel decision,(t (199) =1.016, p=0.922) .ANOVA was used to test whether there was a significant difference among different education groups and social media influencer credibility dimensions and it was inferred that there is no difference among different education groups except for travel curiosity (F(2,198)=3.229, p=0.042). Posthoc analysis showed that the people with lesser education showed a significant difference between people with higher educational background. The traveller curiosity mean vale showed a higher vale for the low education category (M=2.3542) than the people with higher education (M=1.9253,1.9667). Also there was no significant difference between married and unmarried groups towards their travel decision (t (199) =0.429, p=0.843).

Results and Discussion

Economic factors aren't seen to be important while making travel decisions. This is demonstrated by the actual story of Vijayan and Mohana, who became well-known for their international travels and were able to support themselves by selling tea at the Balaji Tea Shop in, Ernakulam, Kerala. Since the store opened 47 years ago, they had taken out loans for travel expenses and paid them back when funds were tight. Develop targeted marketing campaigns that leverage the emotional and visual appealof film locations. Also establish partnerships with film production companies to facilitate filming in picturesque and culturally significant locations. Provide incentives such as tax rebates, subsidies, and streamlined permit processes to encourage more films to be shot in the area.

Limitationsand Future Scope for Research

The study is limited to films and does not take into account the vloges, documentary, television series etc. Due to the fact that the study was conducted at the time when well-known Malayalam movies like Premalu and Manjummel Boys were released, respondents may have been biased when answering the questions. Further research can be done to understand the diverse motivations of tourists who visit film locations, including factors such as Travel Curiosity, Economic Considerations, and Traveller Identity. Tailor marketing strategies to address these varied motivations. This will help to attract people even more diverse groups of people and will have the same experience for everyone who visits the locations.

Conclusion

The findings highlight how films have a significant impact on people's decisions to travel, highlighting the critical function that films play in drawing visitors to particular locations. These findings underscore the potential of film-induced tourism as a strategic instrument for destination marketing and growth, and they also expand our understanding of the cultural and economic implications of this phenomenon. The research may prove advantageous for travel agencies looking to advertise their offerings. Tour operators can benefit from such research studies and generate more revenue by using the information to market their services effectively and draw in potential customers. This will help to boost the tourism industry, which could result in the creation of new job opportunities and boost the economy.

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THE INTERSECTION OF ARTIFICIAL INTELLIGENCE AND FINANCIAL ENGINEERING: OPPORTUNITIES AND RISKS

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ABSTRACT

The integration of Artificial Intelligence (AI) into financial engineering is reshaping the landscape of risk management and investment strategies. This paper explores the intersection of AI and financial engineering, examining both the opportunities and risks associated with this technological convergence. AI's capabilities in processing vast amounts of data, identifying patterns, and making predictions offer significant advantages in financial engineering. AI-powered models enhance risk assessment through advanced analytics and machine learning algorithms, improving the accuracy of financial forecasts and decision-making processes. These innovations enable more sophisticated portfolio optimization, fraud detection, and automated trading strategies, leading to increased efficiency and potential profitability. However, the incorporation of AI also presents challenges. The complexity and opacity of AI algorithms can lead to model risk, where errors or biases in AI systems may result in unforeseen financial consequences. Additionally, the reliance on historical data for AI training can perpetuate existing biases and lead to adverse outcomes in volatile or unprecedented market conditions. Ethical considerations and regulatory compliance also become crucial as AI systems handle sensitive financial data and make critical decisions that impact stakeholders. This paper provides a comprehensive analysis of how AI technologies are being applied in financial engineering, highlighting case studies and practical implementations. It also addresses the risks associated with AI integration, such as model risk, data privacy concerns, and the need for robust regulatory frameworks. By examining the balance between the transformative potential of AI and the inherent risks, this study offers insights into how financial institutions can navigate the evolving landscape of financial engineering with AI.

KEYWORDS*: Artificial Intelligence, Financial Engineering, Risk Management, Machine Learning, Portfolio Optimization, Model Risk, Regulatory Compliance.*

Introduction

The application of Artificial Intelligence (AI) in financial engineering represents a significant advancement in how financial institutions manage risk and make investment decisions. With the ability to analyze vast amounts of data and detect patterns that may elude human analysts, AI is revolutionizing financial engineering practices. This paper explores the intersection of AI and financial engineering, highlighting both the transformative opportunities and the potential risks associated with this technological convergence.

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The Role of AI in Financial Engineering

- **Advancements in Data Analysis**

AI technologies, particularly machine learning (ML) and deep learning, have drastically improved data analysis capabilities in financial engineering. By leveraging algorithms that can process and analyze large datasets, AI enables more accurate predictions and insights. Techniques such as natural language processing (NLP) are used to analyze news articles, financial reports, and social media feeds to gauge market sentiment and forecast trends.

- **Portfolio Optimization**

AI-driven portfolio optimization involves using advanced algorithms to construct and manage investment portfolios. Traditional methods rely on historical data and static models, whereas AI can dynamically adjust portfolios based on real-time data and predictive analytics. Machine learning models can identify patterns and correlations in asset prices, leading to more efficient and adaptive investment strategies.

- **Risk Management**

AI enhances risk management by providing more sophisticated tools for assessing and mitigating financial risks. Predictive analytics and ML algorithms can identify potential risks and anomalies in real-time, allowing financial institutions to respond proactively. AI models can also simulate various market scenarios to assess the impact of potential risks on investment portfolios.

- **Fraud Detection**

AI plays a crucial role in fraud detection by analyzing transaction patterns and identifying unusual behaviors that may indicate fraudulent activities. Machine learning algorithms can detect subtle patterns and anomalies that traditional methods might miss, improving the accuracy and speed of fraud detection processes.

Opportunities Presented by AI in Financial Engineering:

- **Increased Efficiency and Accuracy**

One of the primary advantages of AI in financial engineering is its ability to process and analyze large volumes of data with high speed and accuracy. AI models can quickly identify trends, correlations, and anomalies, leading to more informed decision-making and efficient operations. This increased efficiency allows financial institutions to allocate resources more effectively and respond to market changes in real-time.

- **Enhanced Predictive Analytics**

AI-driven predictive analytics provide a significant advantage in forecasting market trends and investment opportunities. By analyzing historical data and identifying complex patterns, AI models can generate more accurate predictions than traditional methods. This capability enables financial institutions to make better investment decisions and optimize their portfolios.

- **Improved Risk Assessment**

AI enhances risk assessment by providing more sophisticated tools for analyzing potential risks. Machine learning algorithms can simulate various market scenarios and assess the impact of different risk factors on investment portfolios. This advanced risk assessment allows financial institutions to develop more effective risk management strategies and mitigate potential losses.

- **Personalized Financial Services**

AI enables the creation of personalized financial services by analyzing individual client data and preferences. Financial institutions can use AI to tailor investment recommendations, financial planning advice, and product offerings to meet the specific needs of each client. This personalization enhances client satisfaction and improves the overall client experience.

Risks and Challenges Associated with AI in Financial Engineering:

- **Model Risk**

Model risk arises from the use of inaccurate or flawed AI models in financial decision-making. AI algorithms are often complex and opaque, making it challenging to understand how they generate predictions and recommendations. Errors or biases in AI models can lead to unforeseen financial consequences, highlighting the need for robust model validation and testing processes.

- **Data Privacy and Security**

The use of AI in financial engineering involves handling sensitive financial data, raising concerns about data privacy and security. Financial institutions must ensure that AI systems comply with data protection regulations and implement strong security measures to protect client information. Breaches or misuse of data can have significant legal and reputational implications.

- **Bias and Fairness**

AI models are trained on historical data, which may contain biases that can be perpetuated by the algorithms. These biases can lead to unfair or discriminatory outcomes in financial decision-making. It is essential for financial institutions to address bias in AI models and ensure that their algorithms operate fairly and transparently.

- **Regulatory Compliance**

The integration of AI in financial engineering presents regulatory challenges, as existing financial regulations may not fully address the complexities of AI systems. Financial institutions must navigate evolving regulatory frameworks and ensure that their AI practices comply with relevant laws and guidelines. This includes transparency in AI decision-making processes and accountability for the outcomes of AI-driven decisions.

Case Studies

- **Case Study: BlackRock's Aladdin Platform**

BlackRock, a leading global asset management firm, has developed the Aladdin platform, which integrates AI and machine learning to enhance portfolio management and risk assessment. The platform uses AI algorithms to analyze vast amounts of financial data and generate insights for investment decisions. Aladdin's capabilities include predictive analytics, real-time risk monitoring, and personalized investment recommendations. The platform has significantly improved BlackRock's ability to manage complex portfolios and assess risks.

- **Case Study: JPMorgan Chase's COiN Platform**

JPMorgan Chase has implemented the COiN (Contract Intelligence) platform, which uses AI to streamline legal document review and contract analysis. The platform employs natural language processing and machine learning algorithms to analyze legal documents and identify key information. COiN has reduced the time and cost associated with contract review, enhancing operational efficiency and accuracy.

Future Directions

- **Advances in AI Technologies**

As AI technologies continue to evolve, financial engineering will benefit from more advanced algorithms and models. Future developments in AI may include enhanced capabilities for predictive analytics, real-time risk assessment, and personalized financial services. Financial institutions should stay informed about emerging AI technologies and consider how they can be integrated into their operations.

- **Ethical Considerations**

Addressing ethical considerations will be crucial as AI becomes more prevalent in financial engineering. Financial institutions must prioritize transparency, fairness, and accountability in their AI practices. This includes addressing biases in AI models, protecting client data, and ensuring that AI-driven decisions are made with ethical considerations in mind.

- **Regulatory Developments**

Regulatory frameworks for AI in financial engineering will continue to evolve as technology advances. Financial institutions must stay informed about regulatory changes and ensure that their AI practices comply with relevant laws and guidelines. Collaboration with regulators and industry organizations can help shape effective regulatory frameworks that balance innovation with risk management.

- **Interdisciplinary Collaboration**

Successful integration of AI in financial engineering will require interdisciplinary collaboration between data scientists, financial experts, and regulatory professionals. By working together, these experts can develop AI solutions that address the complexities of financial markets while managing risks and ensuring compliance.

Conclusion

The integration of AI in financial engineering offers significant opportunities for enhancing data analysis, portfolio optimization, risk management, and personalized financial services. However, it also presents challenges related to model risk, data privacy, bias, and regulatory compliance. By understanding the balance between the transformative potential of AI and the inherent risks, financial institutions can navigate the evolving landscape of financial engineering with AI. This paper provides insights into the current applications and challenges of AI in financial engineering, offering recommendations for optimizing the use of AI technologies in the financial sector.

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IMPACT OF DIGITAL MEDIA ON SPORTS COMMERCIALIZATION

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ABSTRACT

The commercialization of sports has changed greatly due to the rise and spread of digital media platforms. This research study seeks to explore the diverse effects of digital media on the commercialization of sports, analysing how it affects different parties such as athletes, teams, leagues, sponsors, and fans. By thoroughly examining available literature, industry data, and case studies, this study investigates important topics like branding, sponsorship, fan involvement, income generation, and market growth within the sports sector in relation to digital media integration. The research shows how digital media significantly boosts the visibility and market reach of sports brands, while also enabling specific advertising and sponsorship chances. In addition, the study emphasizes how social media platforms, streaming services, and digital content creation play a vital role in increasing fan involvement and allegiance, ultimately leading to opportunities for making money through subscription models, merchandise sales, and digital content partnerships. Furthermore, the study investigates the obstacles and possibilities presented by digital media, such as concerns regarding data privacy, content piracy, and the democratization of sports content creation and distribution. Moreover, the study evaluates the changing environment of sports broadcasting, analysing the move towards digital streaming platforms and the disturbance of conventional media structures. It also explores how emerging technologies like virtual reality (VR), augmented reality (AR), and artificial intelligence (AI) are impacting the immersive and interactive sports viewing experience, thus reshaping the commercialization strategies utilized by sports organizations. In conclusion, this study offers important understandings into the ever-changing relationship between digital media and the commercialization of sports, presenting strategic advice for stakeholders to take advantage of new possibilities and tackle the obstacles in a more digital sports environment.

KEYWORDS*: Digital Media, Social Media, Market Expansion, Sports Commercialization, Branding.*

Introduction

The introduction of digital media in recent years has completely changed how sports are watched, promoted, and sold around the world. Particularly in India, the sports industry has seen a dramatic shift as a result of the spread of digital platforms and rising usage of digital technology. India presents enormous potential for the marketing of sports through digital media, since it is a market that is expanding quickly and is home to a large number of sports aficionados.

Traditional media and digital platforms are coming together to provide new ways for sports leagues, broadcasters, sponsors, and advertising to interact with fans and make money from their products. Real-time access to live sporting events, highlights, and commentary has been made possible by digital media, meeting the changing needs of contemporary sports fans. Furthermore, sports organisations may now reach a larger audience and generate additional money thanks to the rise of social media, mobile applications, and over-the-top (OTT) platforms.

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Digital media has a multifarious effect on the commercialization of sports in India, touching on a range of topics including income creation, fan involvement, sponsorships, broadcasting rights, and advertising. For sports organisations, stakeholders, and legislators to effectively navigate the quickly changing digital ecosystem and take advantage of its benefits, they must comprehend the dynamics of this influence. Chadwick (2016) studied the effects of digital media on the commercialization of sports pertain to the significant transformations in the sports industry due to the incorporation of digital platforms and technologies. This involves utilizing social media, streaming services, mobile apps, and other digital platforms to advertise, distribute, and make money from sports content. The way sports are promoted, consumed, and monetized has been completely transformed by digital media, creating fresh prospects for revenue generation, fan interaction, and global exposure for sports organizations, athletes, sponsors, and broadcasters. Smith (2019) opine the incorporation of digital media platforms in the sports sector has transformed the way sports are promoted, enjoyed, and capitalized on. Digital media is now a vital tool for sports organizations to connect with fans, entice sponsors, and make money (Jones, 2020).

The impact of digital media on the commercialization of sports involves how online platforms have transformed the business side of sports, such as advertising, sponsorship, broadcasting, and fan interaction. It involves the transition to digital platforms for generating revenue and promoting brands in the sports sector.

- **Current Landscape**

Recently, the sports industry has seen a notable change in its commercialization as digital media platforms are increasingly being utilized. The integration of sports and digital technology has changed traditional notions, opening up fresh opportunities for athletes, teams, leagues, sponsors, and fans.

The use of digital media is crucial in influencing how sports are marketed in the 21st century, by enhancing brand recognition and changing methods of engaging with fans. This research seeks to extensively examine the impact of digital media on the monetization of sports, showcasing the different ways in which digital platforms have altered the relationship between sports entities and their viewers.

This study seeks to offer a thorough insight into the growing integration of digital media and sports business by combining information from various sources like literature, industry data, and case studies. This research is significant because it explores key subjects such as branding, sponsorship, engagement with fans, revenue generation, and market expansion within the realm of integrating digital media. This report seeks to uncover the chances and obstacles in the fast-changing terrain of utilizing digital platforms for business purposes within sports institutions. Additionally, this study will investigate how the business approaches used by sports entities are influenced by the increasing prevalence of new technologies such as virtual reality (VR), augmented reality (AR), and artificial intelligence (AI). This study seeks to provide important information about the upcoming trends in the commercialization of sports in the digital age by examining the effects of technology on how people watch sports and behave as consumers. In essence, this study delves into the symbiotic relationship between digital media and sports commercialization, offering strategic guidance for stakeholders to navigate the complexities.

- **Evolution of Digital Media**

Digital media's introduction has revolutionised several sectors, including sports, by changing how information is produced, shared, and consumed. The emergence of the internet and the following development of digital technology, including mobile devices, multimedia platforms, and broadband access, are responsible for the evolution of digital media.

During its early days, fans could access news, scores, and debates about sports on websites and forums made possible by the internet. But with the introduction of high-speed internet and developments in streaming technology, the full potential of digital media in sports was unlocked. Sports fans may now get live coverage of events from anywhere in the world thanks to the development of live streaming technology (Gantz & Lewis, 2014).

The emergence of social media sites, such Instagram, Twitter, and Facebook, has improved the state of digital media even further. These platforms opened up new channels for engagement, marketing, and monetization by facilitating direct communication between sports organisations, athletes, and fans (Filo et al., 2015). Furthermore, the emergence of user-generated content and the capacity for online experience and opinion sharing have given fans more influence and transformed the conventional consumer-producer dynamic in sports.

Because they offered on-demand and subscription-based sports programming, over-the-top (OTT) services like Netflix, Amazon Prime, and Hotstar (now Disney+ Hotstar) upended the established broadcasting paradigm. This change has given sports groups new sources of income and chances to connect with a larger audience (Evens et al., 2013).

In addition, the growing popularity of mobile devices and the creation of specialised sports applications have improved fans' access to and customization of sports material. Sports viewing has been made more enjoyable overall with features like highlights, live scores, and interactive experiences (Naraine & Parent, 2016).

Review of Literature

Review of Literature on the Sports Commercialization and its Drivers

The process of turning sports into a lucrative enterprise by utilising a variety of income streams and marketing techniques is known as "sports commercialization." A number of variables that have aided in the expansion and prosperity of the sports sector have given rise to this phenomenon's notable recent acceleration.

The growing worldwide appeal and prominence of sporting events are among the main forces behind the commercialization of sports. Sports have drawn millions of fans worldwide, overcoming barriers of both geography and culture. Sports have become a valuable platform for advertising, sponsorships, and merchandise due to their global popularity (Desbordes & Richelieu, 2012).

One of the main drivers of sports commercialization has been the growth of media contracts and broadcasting rights. Due to their realisation of the enormous value of broadcasting rights, sports leagues and organisations have struck profitable agreements with cable companies, television networks, and, more recently, digital platforms. Sports organisations are able to reach a wider audience and earn significant cash streams thanks to these television rights (Kunkel et al., 2019).

The commercialization of sports has also been greatly aided by endorsements and sponsorships. Businesses have realised that sports have the potential to be an effective marketing tool, providing brand exposure, customer interaction, and the chance to connect with the morals and feelings that are intrinsic to the game (Shank & Lyberger, 2014). Multi-million-dollar sponsorship agreements between corporate brands, players, and sports organisations have resulted from this.

The commercialization of sports has also been aided by the expansion of the sports apparel market. For sports organisations and sportsmen, fans' desire to buy branded clothing, souvenirs, and other licenced items has created a sizable cash stream (Desbordes & Richelieu, 2012).

The expansion of professional sports leagues and the growing commercialization of amateur sports have also contributed to the expansion of the sports sector. Professional leagues, including the Indian Premier League (IPL), the National Football League (NFL), and the National Basketball Association (NBA), have benefited from significant investments, sponsorships, and media rights agreements by taking advantage of their worldwide appeal and popularity (Chawla, 2020).

It's crucial to remember, too, that worries over the possible deterioration of sports' integrity and ideals have also been raised by the commercialization of sports. There has been discussion on topics like overcommercialisation, conflicts of interest, and putting money above the spirit of the game (Pedersen et al., 2011).

- **Review of Literature on the Impact of Digital Media on Sports Commercialization**

The commercialization of sports has been significantly altered by the rise of digital media, which has also opened new avenues for money creation and fan interaction. The influence of digital media on the commercialization of sports has been significant, transforming different areas of the sports industry and opening up new possibilities for making money, engaging fans, and building brands. The complex effects of digital media on sports commercialization are examined in this subsection.

Sports organisations now have access to new platforms and channels for content distribution thanks to the disruption of the old broadcasting paradigm caused by digital media. Over-the-top (OTT) services like Netflix, Amazon Prime, and Disney+ Hotstar have completely changed how people watch sports content. These platforms now have the sole right to broadcast big athletic events, giving fans individualised watching experiences and on-demand access (Evens et al., 2013).

The emergence of digital broadcasting and live streaming has facilitated sports organisations in expanding their worldwide reach beyond geographical limitations and time zones. Due to this, negotiations for foreign broadcasting rights and subscription-based business models have created new revenue sources (Gantz & Lewis, 2014).

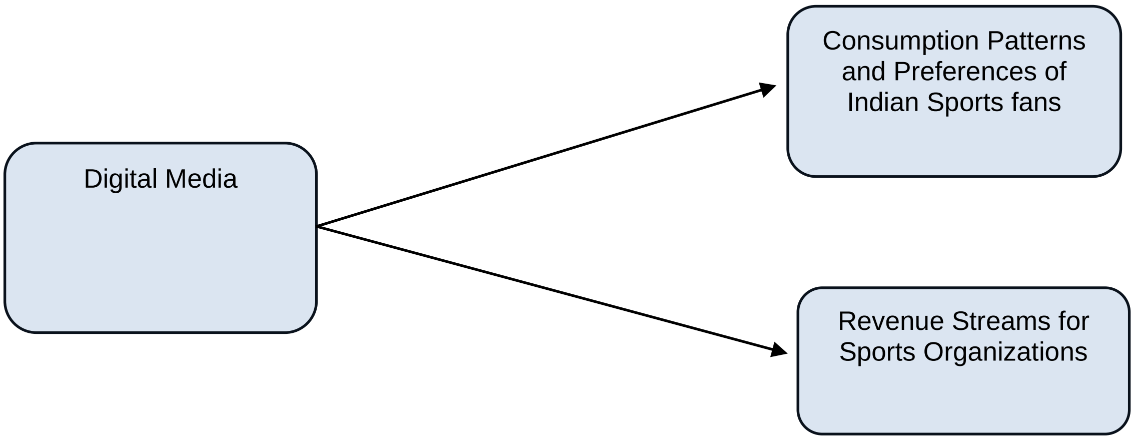
The world of sports sponsorship and advertising has changed because of digital media. Brands looking to reach sports fans now find social media platforms, internet, and mobile applications to be viable advertising spaces. Through influencer marketing, sponsored content, and targeted advertising campaigns on these platforms, sponsors may now connect with fans in new and creative ways and target demographics (Filo et al., 2015).

Moreover, the integration of sponsorship and advertising into the live sports viewing experience has been made easier by digital media. Strategies like augmented reality overlays, virtual advertising, and interactive components have increased the exposure and influence of sponsors' businesses during live events (Naraine & Parent, 2016).

In Indian sports, social media tools have been instrumental in improving fan interaction and commercialization prospects. Platforms like Facebook, Twitter, and Instagram have been used by sports teams, organisations, and athletes to interact with fans, post behind-the-scenes material, and advertise items and sponsorships (Chawla, 2020).

Indian sports fans now feel more a part of a community because to social media's interactive features, which allow them to express their thoughts, ideas, and responses instantly. Because of the increased involvement, advertisers and businesses have shown interest in reaching the devoted fan base (Naraine & Parent, 2016).

Figure 1: Conceptual Framework



Objectives of the Study

- To evaluate the influence of digital media on the consumption patterns and preferences of Indian sports fans.
- To analyse the impact of digital media on revenue streams for sports organizations, including broadcasting rights, sponsorships, and advertising.

Methodology

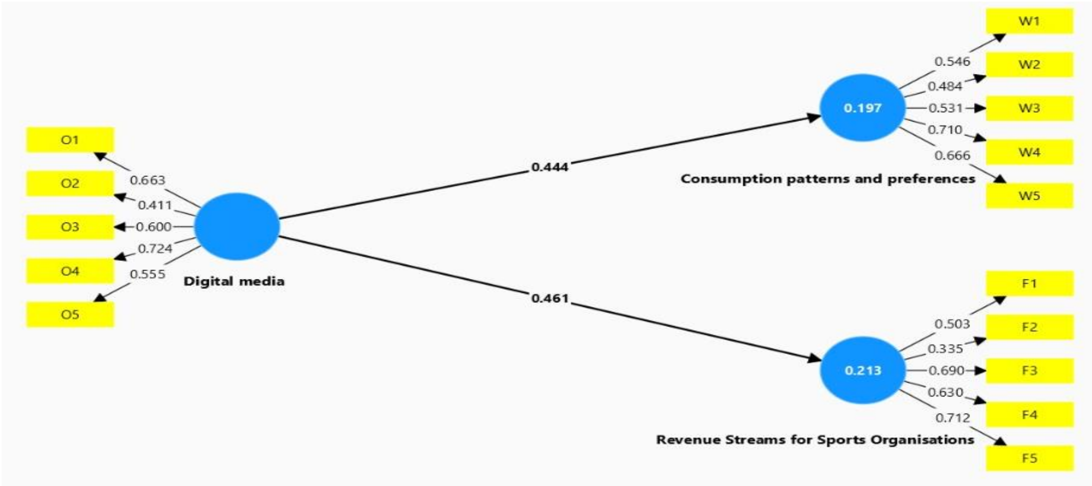
This research falls under the category of quantitative research. Its goal is to collect quantitative data and use statistical analysis to explore the connections among variables. This study uses both primary and secondary data to examine how organizational culture is related to work-life balance. In SMART PLS, the main statistical techniques used for examining structural equation models (SEM) involve Partial Least Squares (PLS) and assessing the measurement model. PLS is utilized for estimating the parameters of both the measurement and structural models concurrently, making it appropriate for managing intricate models with many variables and relatively small sample sizes. The measurement model in SMART PLS evaluates the connections between visible variables and hidden constructs, similar to Confirmatory Factor Analysis (CFA) in classic SEM structures. This includes establishing connections between observed variables and latent constructs, assessing model fit with goodness-of-fit indices, loadings, and cross-loadings. Moreover, SMART PLS permits the definition of the structural model, which analyses the connections between latent constructs, allowing researchers to verify hypotheses and calculate parameters with the PLS algorithm used for the measurement model. In general, SMART PLS incorporates the calculation of both the measurement and structural models, guaranteeing the accuracy of the connections between observed variables and hidden constructs in the SEM framework.

Results and Discussions

- **SEM Model Analysis**

PLS-SEM is used to assess concept validity and reliability. PLS-SEM is utilized in this study to investigate the potential impact of digital media on sports commercialization. To examine the integration of digital media in sports commercialization significantly influences the consumption patterns and preferences of Indian sports fans and on revenue streams for sports organizations in India, positively affecting broadcasting rights, sponsorships, and advertising revenues(through SEM Analysis).

Figure 2: SEM Model Analysis



Further in depth analysis has been done by studying each component and their relation to each other:

- **Path Coefficients**

Path coefficients show how strong and in which direction the variables in the model are related to each other. Positive path coefficients in this scenario suggest that digital media positively impacts on Consumption Patterns and Preferences of Indian Sports Fans and revenue Streams for Sports Organizations in India (including broadcasting rights, sponsorships, and advertising).

The correlation coefficient between digital media and Revenue Streams for Sports Organizations in India 0.461.

Likewise, the relationship between digital media and Consumption Patterns and Preferences of Indian Sports Fans 0.444 shows positive correlation.

- **Cronbach's Alpha**

Cronbach's Alpha is a measure of internal consistency. Cronbach's alpha measures the reliability of internal consistency by showing how well the items in a latent construct are correlated. The Cronbach's alpha values for Consumption Patterns and Preferences, Digital Media, Revenue Streams for Sports Organizations are 0.727, 0.731, and 0.717 respectively. These values indicate a good level of internal consistency for each construct. Typically, Cronbach's alpha values that is higher than 0.7 are seen as satisfactory (Table 1).

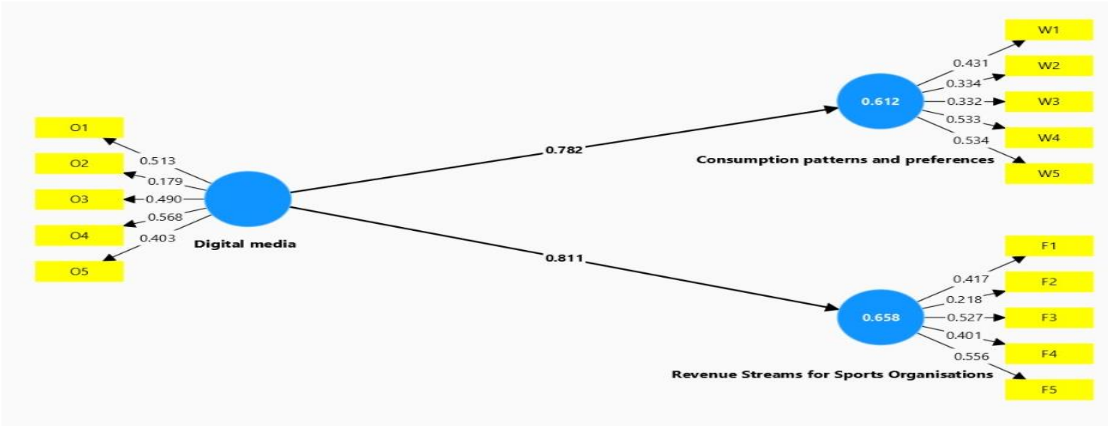
Table 1: Construct Reliability and Validity

Construct reliability and validity	Composite reliability
Consumption Patterns and Preferences	0.727
Digital Media	0.731
Revenue Streams for Sports Organizations	0.717

- **Regression Analysis**

To examine the integration of digital media in sports commercialization significantly influences the consumption patterns and preferences of Indian sports fans and on revenue streams for sports organizations in India, positively affecting broadcasting rights, sponsorships, and advertising revenues (through Regression)

Figure 3: Regression Model



Further in depth analysis has been done by studying each component and their relation to each other:

- **R-square (R^2)**

R-square indicates the percentage of variability in the dependent variable that is accounted for by the independent variables in the model. The R^2 value for 'Revenue Streams for Sports Organizations in India (including broadcasting rights, sponsorships, and advertising)' is 0.658, suggesting that around 65.8% of the variation in the Revenue Streams for Sports Organizations in India (including broadcasting rights, sponsorships, and advertising) can be attributed to the predictors in the model. 'Consumption Patterns and Preferences of Indian Sports Fans' the R^2 value is 0.612, indicating that around 61.2% of the difference in Consumption Patterns and Preferences of Indian Sports Fans can be accounted for by the factors in the model.

- **Demographic Analysis**

Understanding the demographic characteristics of the participants in a study is crucial for interpreting the findings and drawing meaningful conclusions. In the context of exploring the impact of digital media on sports engagement and commercialization, the demographic values of the participants provide valuable insights into how different groups perceive and interact with sports content in the digital age.

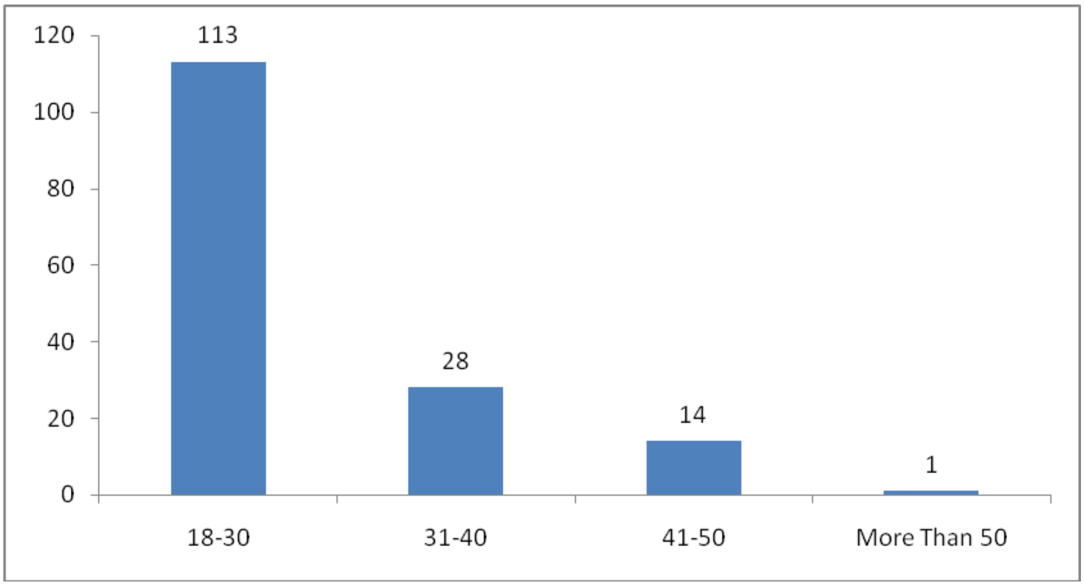
- **Participant Selection**

A total of 156 participants were selected to take part in this study, representing a diverse range of individuals with varying backgrounds and interests related to sports and digital media. The selection process aimed to capture a broad spectrum of perspectives and experiences to ensure the study's findings were comprehensive and reflective of the wider population.

- **Age Distribution**

The data shows a spread among four different age groups. The majority of participants are between 18 and 30 years old, with 113 individuals in this category. After that, there are 28 participants who are between the ages of 31 and 40, and 14 participants who are in the 41 to 50 age range. In addition, there is a single respondent over the age of 50. The number of participants aged between 18 and 30 is due to the notable presence of this age group, especially in the private sector workforce. This shift in demographics highlights a larger proportion of survey participants in younger age categories compared to those over the age of 50. The data in the table shows how employees are distributed among different age groups.

Figure 4: Age Classification of Sample for the study

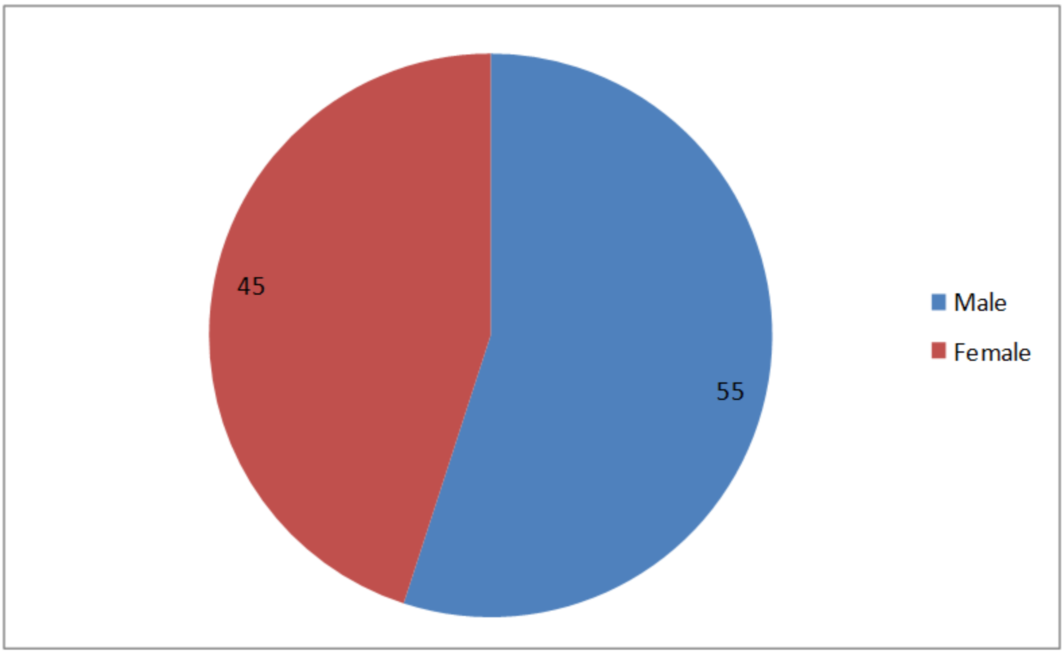


Source: Primary survey, 2023-24

- **Gender Representation**

Out of the 200 who were surveyed, 156 were male, making up 55% of the total sample, with females comprising the remaining 45%. The convenience sampling approach led to a larger proportion of male participants in comparison to female participants, and the study did not focus solely on female respondents. Table shows the gender breakdown and the overall number of male and female employees included in the research.

Figure 5: Gender distribution of Sample for the study

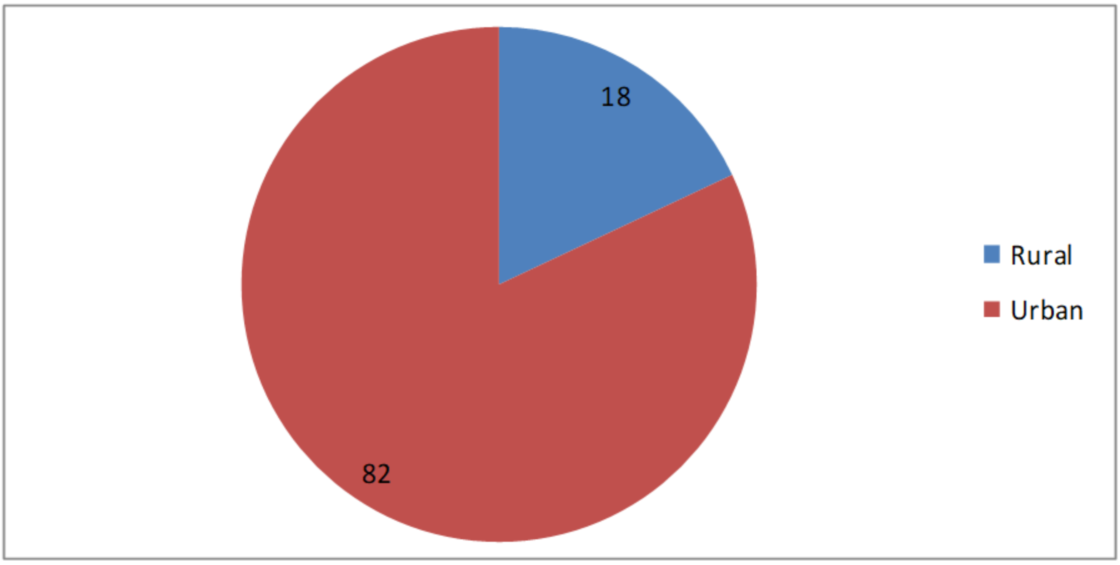


Source: Primary survey, 2023-24

- **Location**

Both the rural and urban sectors employ the respondents. There are, accordingly, 128 and 28 responders in total. There are more respondents from the urban sector than from the rural sector. The number of responses in the rural and urban sectors is displayed in the Figure 6.

Figure 6: Classification of Location



Source: Primary survey, 2023-24

Conclusion

After conducting SEM and Regression analyses to study how digital media affects the commercialization of sports, several findings can be made.

- Both SEM and Regression analyses show that digital media has a notable positive effect on revenue streams for sports organizations in India. This effect can be seen in the rise of broadcasting rights, sponsorships, and advertising income.
- Moderate to strong relationships are observed between revenue streams for sports organizations (RSSO) and consumption patterns and preferences (CPP) as well as digital media (DM), even though a direct correlation has not been identified. This indicates that although consumption habits and preferences may not have a direct connection to digital media use, they affect the earnings of sports entities.
- The R-squared values from the Regression analysis show that a large amount of the variance in revenue streams and consumption patterns of Indian sports fans can be accounted for by the factors included in the model, especially digital media. This highlights the significant ability of digital media to impact financial results and consumer actions in the sports sector.
- These results highlight the need for sports entities to properly grasp and utilize digital media platforms in their commercialization strategies. Through utilizing digital media, sports organizations can improve their income sources and meet the needs of Indian sports enthusiasts more effectively.
- Although the correlation between consumption patterns and preferences (CPP) and digital media (DM) might not be strong, the complex interaction between these elements and their indirect effects is significant.
- The results indicate that sports organizations in India can use digital media to customize marketing tactics that align with the specific consumption habits and preferences of Indian sports enthusiasts. Analysing digital consumption habits allows sports entities to find specific audience segments and provide tailored content and products, leading to increased engagement and revenue opportunities.

- Through digital media, there is a strong tool that helps to boost fan involvement and build a community among Indian sports fans. Sports organizations can develop devoted fan bases, increase ticket sales and merchandise purchases, and enhance revenue streams by utilizing interactive and immersive digital experiences.

To sum up, the study emphasizes the various effects of digital media on the commercialization of sports in India and emphasizes the importance for sports organizations to utilize digital platforms strategically. By adopting new technologies, grasping customer behaviour, and forming strategic partnerships, sports organizations can discover fresh possibilities for growth, boost revenue in a sustainable way, and build active fan bases in the digital era. It underscores the important impact of digital media on influencing the financial structure of sports groups and the buying behaviours of sports fans in India. It highlights the importance of sports organizations adjusting to and taking advantage of digital platforms in order to achieve commercial success and effectively connect with their desired audience.

Limitations

- The study's results could be restricted in their applicability if the sample selected for gathering data does not accurately reflect the wider community of Indian sports enthusiasts and sports entities. A broader and more inclusive sample could improve the accuracy and relevance of the findings.
- Methodology for collecting data: Relying solely on one method, like surveys, without cross-referencing with other methods such as interviews or observational data, may restrict comprehension and miss key insights.
- Validity of measurement: The tools used to measure consumption patterns, digital media usage, and revenue streams may not have been thoroughly validated. This might result in measurement error and impact the accuracy of the results.
- The correlational nature of the study hinders its ability to determine causality or directionality among digital media usage, consumption patterns, and revenue streams. Future studies utilizing experimental or longitudinal methods could overcome this restriction.
- The SEM and regression models employed in the research may have failed to fully grasp the complexity of the relationships among variables. Making simplistic assumptions or specifying models too narrowly may ignore subtle variations in the data and result in inaccurate estimates.

Recommendations

- Due to the impact of digital media on revenue and consumer preferences, sports organizations should focus on improving the integration of digital media platforms in their marketing and promotional plans. This may require putting funds into social media advertising, generating interesting material for digital platforms, and utilizing new digital tools to engage with followers.
- Recognizing the significance of digital media in influencing consumer behavior, sports organizations should concentrate on customizing their content to align with the likes and preferences of their target audience. This might include conducting audience research to comprehend their preferences, creating varied and captivating content, and using analytics tools to evaluate the effectiveness of content strategies.
- Creating unique ways to engage with fans is crucial for building a strong and dedicated fan following. This might include interactive activities, streaming live events, virtual fan groups, and game features to improve the fan experience and increase revenue opportunities.
- Continuous Monitoring and Adaptation is essential for sports organizations in order to stay relevant in the digital landscape, given the ever-changing nature of digital media and consumer preferences. This could include keeping up with technological changes, observing what competitors are doing, and asking for feedback.
- Educational programs could be necessary to provide sports industry stakeholders with the skills and knowledge needed to effectively utilize digital media in light of its complexities and impact on sports commercialization. This might include training sessions, conferences, and webinars that cover digital marketing, managing social media, and analysing data.

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GREEN PERSONAL CARE PRODUCTS IN INDIA: AN OVERVIEW

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ABSTRACT

The increasing demand for environmentally sustainable products has led to a significant rise in the green personal care market in India. This paper provides an overview of the green personal care industry, focusing on the growth, trends, and challenges within this sector. With consumers becoming more environmentally conscious, the demand for natural, organic and eco-friendly cosmetics has surged, reshaping the landscape of personal care products. The study examines consumer behavior towards green cosmetics, highlighting factors such as health concerns, ethical considerations, and environmental awareness that influence purchasing decisions. It also analyzes the evolving market dynamics, exploring how companies are responding to this shift by offering sustainable alternatives. The paper aims to offer insights into the growing green personal care market in India and the changing preferences of consumers, providing a comprehensive understanding of this emerging trend.

***KEYWORDS**: Green Products, Eco-friendly Cosmetics, Environmental Awareness.*

Introduction

Personal care products (PCP) constitute a category of ubiquitous products employed for several functions, including cleansing, nourishment and aesthetics. Personal care goods encompassed cosmetics, skincare, haircare, household cleansers, and fragrances. PCP such as deodorants, hair dyes, hormones, lipsticks, moisturizers, shampoos, and toothpastes are employed to enhance the quality of daily life. The personal care goods sector in India is seeing fast growth. Products once aimed at affluent consumers are becoming more accessible to lower-income demographics. The PCP market comprises substantial global and domestic entities that have expanded their product offerings to cater to emerging market segments.

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Table 1: Personal Care Products (PCP)

PCP Category	Examples of PCPs Included
Baby Lotions, Soaps and other Baby Products	Wipes, diaper ointment, baby body wash, petroleum jelly
General Makeup and Cosmetics	Blush, foundation, concealer
Lip Products	lip balm, lipstick, lip gloss
Eye Makeup and Cosmetics	Eye shadow, mascara, brow liner
Hairstyling Products	Hairspray, gel, mousse, hair paste
Nail Polish and Remover	nail polish, nail polisher remover
Fragrance and Perfumed Products	perfume, bubble bath, body mist, air freshener
Deodorant and Antiperspirants	Deodorant, antiperspirant
Body Lotions, Creams and Oils	Body butter, belly oil, sunscreen, hand cream
Face Lotions and Creams	Day cream, night lotion, acne cream, eye moisturizer
Body Soaps	Body wash, body gel, shower soap
Facial Soaps, Cleansers and Washes	Face cleanser, exfoliator, face masks, eye makeup remover
Toothpaste and Mouthwash	Toothpastes, dental rinse, mouthwash
Hand Soaps, Sanitizers and Soap Not Otherwise Specified (NOS)	Liquid soap, bar soap, waterless sanitizers *, generic soap

Source: Lang et al. (2016)

The environmental implications of PCP must not be overlooked in the exhilaration of rapidly expanding markets and heightened competitive intensity. Similar to other products, they affect the environment during their entire life cycle by consuming resources, generating waste and emissions during manufacture, distribution and consumption, hence exacerbating carbon and water footprints. Despite regulatory and competitive constraints compelling enterprises to enhance their internal performance, the over utilization of resources and waste produced during consumption remain unregulated, resulting in urban waste becoming one of India's most significant challenges.

Furthermore, consumers frequently lack awareness of the environmental repercussions associated with their purchases, leading them to disregard the ecological consequences of their acquisitions. Environmental certifications and labeling systems have developed in numerous countries and can be affixed to product labels. Regrettably, the Indian business is deficient in advanced labeling standards and possesses an ineffective enforcement system. Corrupt vendors can evade consequences through misleading information. In 1991, the Ministry of Environment and Forests (MoEF) launched the 'Ecomark' labeling program for environmentally friendly items; nevertheless, it lacks widespread industry recognition. In this context, it is essential to encourage environmentally friendly behavior among customers and corporates of the PCP category.

Green Personal Care Market in India

The term "cosmetics" encompasses a broad array of products, including styling gels, fragrances (such as cologne and perfume), color cosmetics (including lipstick, blush, and compact powder), and personal care items (including creams, oils, shampoos, soaps, cleansers, and toothpaste). Numerous products, such as soap and toothpaste, are essential for daily hygiene. In the modern day, beauty is progressing in all domains. It has exhibited resiliency amid significant economic downturns and macroeconomic upheavals.

Table 2: List of Natural Cosmetics and Personal Care Brands in India

List of Natural Cosmetics and Personal Care Brands	List of Natural Cosmetics and Personal Care Brands for Men
Tata Harper	Tata Harper
Innisfree	Innisfree
Vox	Vox
Joan Moais	Clinique for Men
Khadi Naturals	Burt's bee
Ecco Verde	Ecco Verde
Vapour	Dr.Batra's
Ilia	CaveMan Naturals
Au Naturale	Biotin
Biossance	Spruce
Mama Earth	Mama Earth
Apivita	Apivita
Hugo Naturals	Birch box

Source: Tengli and Srinivasan (2022)

Conversely, the cosmetics business confronts the issue of a burgeoning worldwide population escalating product demand alongside the harsh reality of limited and overexploited natural resources. Amidst this strain, sustainability becomes an imperative necessity. This industry is characterized by significant natural resource use and a substantial environmental impact, including energy-intensive manufacturing and the creation of plastic packaging. A sustainable, long-term vision is essential for the cosmetics industry. In the realm of cosmetics, “green” and “sustainable” denote the utilization of natural ingredients sourced from renewable materials instead of detrimental substances found in mainstream goods as these pollutants adversely affect both the environment and human health.

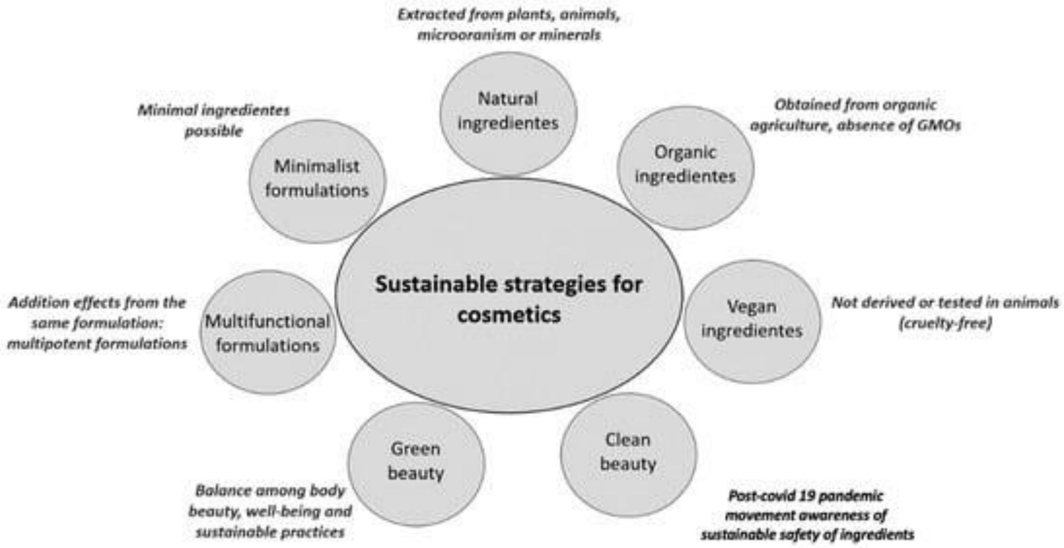
Gen Z and Y consumers demand comprehensive information regarding the products they purchase, including the origin, ingredients, production methods, ethical and environmental implications, and aftereffects. This demand is attributed to increased educational attainment, heightened environmental and animal welfare concerns, pervasive internet technology usage, and their upbringing in an era characterized by climate change, pollution and plastic waste. Consumerism has experienced a substantial transformation. Consumers increasingly utilize cosmetic products and services not just to enhance their appearance but also to foster a sense of well-being and to authentically express their identities, rather than conforming to societal expectations.

The Indian market for sustainable cosmetics is thriving due to several factors, including a longstanding tradition of herbal and Ayurvedic medicine, an increase in the number of working women, and increased per capita expenditures among the middle and upper-middle classes. This has resulted in an expanded market for cosmetics, encompassing eco-friendly and sustainable goods. Indian consumers are transitioning from traditional items to environmentally friendly alternatives due to increased knowledge regarding the conservation of natural resources and sustainable development for the future. The increasing ecological and health consciousness among urban and suburban populations is the primary driver of the expansion of green products in India.

Consumer Behaviour and Green Cosmetics

India possesses an economy primarily focused on agriculture. Indian farmers possess extensive knowledge of organic farming rooted in ancient traditions. To address the increasing need for food and to enhance India's agricultural output, a green revolution centered on high-yield crops and synthetic fertilizers was initiated. But the Indian corporates lack responsibility when it comes to manufacturing of environmentally friendly products especially cosmetics. Patanjali Ayurveda Limited is the sole Indian enterprise that has endeavored to establish global prominence and has been acknowledged by Indians for its dependable traditional practices in natural food products and cosmetics.

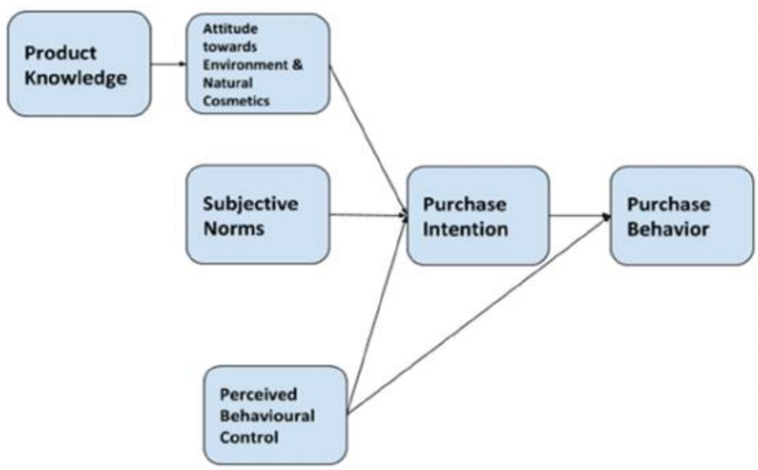
Fig. 1: Sustainable Strategies and Trends in Cosmetics



Source: Rosado et al. (2024)

The organic cosmetics sector is expanding in India; nevertheless, the accessibility of organic brands is a challenge. The younger generation prefers to explore online due to its technology orientation. Consumers are more concerned about pollution and may become informed about the factors that drive their purchases of eco-friendly cosmetics. Significant attention is currently being devoted to biology and sustainability. Consumers are increasingly gravitating towards eco-friendly cosmetics, favoring effective beauty products that mitigate environmental impact and pollution. The adoption of Green-practices today is both a critical necessity and an opportunity for organizations and consumers. The word "green" now signifies organic, sustainable or beneficial attributes. The threats posed by climate change, global warming, and environmental issues have prompted the emergence of green thinking. Consumers' environmental apprehensions have intensified over time. Their cosmetics' purchasing behavior is variable. An environmentally sustainable lifestyle is vibrant. They like products that are nutritious, secure and devoid of chemicals. The deterioration of the environment has undoubtedly heightened the importance of consumers purchasing eco-friendly products. The shift to green today encompasses not only fundamental aspects but also presents an opportunity for every client.

Fig 2: Conceptual Model Based on the Theory of Planned Behaviour



Source: Tengli and Srinivasan (2022)

Green marketing involves the promotion of products deemed environmentally safe, as defined by the American Marketing Association. Green marketing encompasses a wide array of actions, including product modification, alterations in production processes, packaging improvements and promotional changes. Alternatively, many synonymous words for green marketing include environmental marketing and ecological promotion. Terms like recyclable, nature-based, ozone-friendly, paraben-free and phosphate-free pertain mostly to marketing and sales. Green marketing should therefore be advocated. Furthermore, the cosmetics industry was considered a very significant sector that experienced remarkable transformation in the 21st century. Young female shoppers frequently choose eco-friendly cosmetics as they recognized the detrimental effects of artificial cosmetics. They are exceedingly concerned about their entire appearance. The Indian cosmetics sector has grown vital for growth and marketing over time. The various repercussions of pollution and an unhealthy environment have modified green products related buying behaviour of young consumers. They now seek to attain wellness through green cosmetics.

Conclusion

Indian customers' purchasing habits are increasingly favoring green items over non-green alternatives due to heightened awareness of ecological and human well-being issues. Indian companies have commenced the production of a variety of green products to meet the increasing demand, targeting both environmentally conscious consumers and mainstream consumers through eco-friendly designs and health-oriented features. Consequently, there is a need for expansion of green products in India. The Indian green product market is in its nascent stage. The rapidly advancing BRICS economies, along with other nations, have been striving to satisfy escalating demands for natural resources, hence exerting further strain on the environment. To achieve a sustainable link between the economy and the environment, both consumers and enterprises must be responsible for utilizing natural resources efficiently, reducing pollution, and protecting the global environment and ecosystem for future generations. To realize the goal of 'Green Prosperous India,' emphasis must be placed on the youth by first comprehending their attitudes and behaviors, and subsequently providing items that possess green, safe and ecologically friendly attributes (labelling).

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THE ROLE OF TECHNOLOGY IN ADVANCING SUSTAINABLE AGRICULTURE: A FOCUS ON RENEWABLE ENERGY AND AUTOMATION

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ABSTRACT

New and commercial methods have undergone tangible transformations thanks to the introduction of sophisticated machinery, digital platforms, infrastructure, and new and emerging technology. Technology and machinery not only give farmers new opportunities, but they also have a significant impact on value capture and price generation. Research has demonstrated, for instance, how new forms and business strategies are introduced by machinery and technology, which go beyond sectoral. In a similar vein, the report also detailed the manner in which significant corporations have attempted to rethink and develop their new technology and machinery strategies and practices. The last ten or so years have seen the introduction of numerous books, formidable machinery, digital infrastructure, and technologies that have drastically changed farming and had a big impact on organizations and policies. In fact, the word "Renewable Energy and Automation" is frequently used in contemporary farming sources to describe how farming has changed or been disrupted by machines and technologies, and it also generally illustrates how modern businesses may need to entirely overhaul the mechanized agricultural industry. Researcher proposes, these digitally created settings can function as a shared conceptual framework that facilitates the integration of ideas from various places and the interconnectedness of problems at multiple levels. In terms of Renewable Energy and Automation, the following factors are taken into account: product viability, customer support, progress tracking system, transparency, economical, etc. For farmers, on the other hand, factors were taken into account based on their yearly productivity.

***KEYWORDS**: Renewable Energy and Automation, Farmers.*

Introduction

Recent studies in the realm of commerce have made an effort to mitigate these impacts by using specific language or tangible objects. Research has demonstrated, for instance, how new forms and business strategies are introduced by machinery and technology, which go beyond sectoral. In a similar vein, the report also detailed the manner in which significant corporations have attempted to rethink and develop their new technology and machinery strategies and practices. The last ten or so years have seen the introduction of numerous books, formidable machinery, digital infrastructure, and technologies that have drastically changed farming and had a big impact on organizations and policies. In fact, the word "Renewable Energy and Automation" is frequently used in contemporary farming sources to describe how farming has changed or been disrupted by machines and technologies, and it also

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generally illustrates how modern businesses may need to entirely overhaul the mechanized agricultural industry. Overall, studies have shown that incorporating new equipment and technology into business operations introduces uncertainty from marketing and innovation into operations as well as processes themselves, strengthening the understanding of how individuals, groups, and collections may support creative endeavors. Recognizing the conditions and motivations behind the interest in machines and technology, as well as agricultural and community policies meant to bolster this state of affairs since it promotes employment development and economic expansion. We provide definitions for several key terms and an overview of recent studies from the standpoint of how farmers generate digital value through the collection, utilization, and sharing of digital data. We demonstrate how the combination of these two methods can be used to pinpoint important areas of machinery and technology research. Our strategy complements current technological and machinery structures by highlighting new tools and social media platforms that promote information exchange and make it easier to spot chances

Review of Literature

Wolelaw Endalew (2016): Ethiopia is currently in the second year of implementing the GTP II program. The nation's economy is anticipated to change during these years. It is anticipated that Ethiopia's rural areas will change significantly in a number of areas, most notably productivity growth, farm power, intensification, job loss, and diversification of livelihoods. In this regard, it is impossible to downplay the importance of adequate agricultural mechanization in light of research and empirical data from developing nations. Therefore, it is anticipated that by 2025, the use of suitable agricultural mechanization will accelerate Ethiopia's transition from rural to middle-income status. Thus, the purpose of this research review is to highlight the different ways that suitable agricultural mechanization might be used as a transformational input. It makes an effort to connect the many consequences of automation in emerging economies. Mechanization was initially attempted with much hope but ultimately failed, making it unsuited to the situation in Ethiopia. The majority of Ethiopians came to the opinion that mechanization will never succeed in Ethiopia due to demographic factors, in addition to land ownership and other institutional concerns. People's negative perceptions of mechanization compound the large variance in assuming its contribution to the growth process overall. Most people claim that mechanization is limited to harvesters and tractors. On the other hand, mechanization encompasses the various small and medium-sized farming tools utilized in the cultivation, handling, and transportation of agricultural products. The experience of India generally indicates that mechanization is beneficial to the overall development of rural areas. A significant component of the agricultural production system is mechanization, which has a response coefficient of 0.45 and comes with specific opportunity costs, most notably minimal displacement of human labor. But given Ethiopian smallholders' unique land characteristics, the most crucial thing is to deploy mechanization technologies sparingly, since this can boost the productivity of both labor and land while also improving the smallholder's technical efficiency. In light of this, it is feasible to draw the conclusion from the review that mechanization of agriculture bears unquestionable benefits for enhancing food security, generating employment, raising productivity, decreasing loss, and fostering economic gender empowerment while preserving environmental degradation at reduced levels.

Sinki Barman (2019): Mechanization is a need-based process that provides different inputs enough time to self-adjust, improving agricultural productivity in the process. This study examined the effects of mechanization on income in the Assamese regions of the Upper and Central Brahmaputra Valleys. The majority of working men were found to be clustered in big size groups; however, no clear correlation was found between the size of farms and the number of working women. Once more, the proportion of literacy was greater in mechanized farms, with the highest percentage finding in tractor ownership farms (79.83%) and the lowest percentage in bullock operated farms (almost 50%) across all size groups. Thus, there appeared to be a positive correlation between the rate of literacy and the degree of automation in the research area. The majority of the sample households' income came from agriculture, whether they operated on a mechanized or non-mechanized farm. Of the two types of farms, tractor-hired farms employed the greatest number of people. Furthermore, Group I's Bullock Operated Farm had a larger percentage of female workers. family type that includes both joint and nuclear households. It has been observed that a higher percentage of joint families in tractor ownership farms may be attributable to the fact that joint families typically have larger holdings and are financially stable enough to purchase equipment like tractors. Mechanization was proven to have a beneficial effect on revenue.

Objectives

- To comprehend the Renewable Energy and Automation the sector of farming.
- To research the effect of Renewable Energy and Automation on Farming in Jalgaon.

Hypotheses

H_0: Renewable Energy and Automation has no appreciable impact on farming.

H_1: Renewable Energy and Automation has appreciable impact on farming

Scope

This research study offers guidance on how farmers perceive the effects of farming Renewable Energy and Automation. Additionally, the report sheds light on how Renewable Energy and Automation has affected farming and, ultimately, the prospects for the industry going forward

Research Methodology

The study's foundation is essentially primary data that has been critically evaluated and analyzed. Farmers are among the primary sources. In order to get pertinent data from the primary source for the researchers' guidance, a comprehensive questionnaire is created and study in the sampled regions to determine its influence. Using the questionnaire, in-depth conversations were had with certain main data sources to gain an understanding of their perspectives, mindsets, and behaviours. This understanding would enable the researchers to provide any necessary and helpful recommendations. Statistical tools such as tabulations, grouping, percentages, averages, testing of hypotheses, etc. are used to process the questionnaire

In terms of Renewable Energy and Automation, the following factors are taken into account: product viability, customer support, progress tracking system, transparency, economical, etc. For farmers, on the other hand, factors were taken into account based on their yearly productivity

Research Area

Researchers chose a group of Jalgaon farmers. For the study, 100 farmers were included in the sample sizes. Data is gathered by researchers from both primary and secondary sources. The responders were given 100 questionnaires by the researcher

Limitations

- The investigation is restricted to a certain geographic region
- For the sake of a detailed investigation, other factors might be included

Data Analysis

The questionnaire was created by the researcher and given to the respondents. Following receipt of the questionnaire, the researcher examined it.

No	Respondent	Distributed	Received	Validation Rejection	Net Sample
1	Farmer	100	95	6	89

Hypothesis Testing

H_0: Renewable Energy and Automation has no appreciable impact on farming

H_1: Renewable Energy and Automation has appreciable impact on farming Mathematically

Frequencies		Annual Production (in Tons)					
		Below 10	**10-20**	**20-30**	**30-40**	**Above 40**	**Total**
Renewable Energy and Automation	Product Feasibility	7	3	5	5	4	24
	Customer Care Support	1	5	4	2	5	17
	Progress Tracking System	2	1	1	3	4	11
	Transparency	4	9	1	2	5	21
	Economical	3	2	9	1	1	16
	Total	17	20	20	13	19	89

Sr No	H_0	H_1	χ_cal	χ_table	p_value	Result
1	Renewable Energy and Automation has no appreciable influence on farming	Renewable Energy and Automation has appreciable influence on farming	28.47	26.30	7.9697E-04	**Reject H_0 (i.e.** Renewable Energy and Automation has appreciable influence on farming**)**

*Here LOS: 0.05

Thus, our null hypothesis Renewable Energy and Automation has no appreciable influence on farming is concerned is not accepted. On the other hand, we adopt our alternative hypothesis Farming is significantly impacted by Renewable Energy and Automation

Findings

- Product Feasibility was the most important aspect of Renewable Energy and Automation's impact on farming
- Another significant finding from our analysis is that, in comparison to other transformation strategies, farmers see Renewable Energy and Automation to have enormous potential

Conclusion

There is strong impact of Renewable Energy and Automation on Farming. New and commercial methods have undergone tangible transformations thanks to the introduction of sophisticated machinery, digital platforms, infrastructure, and new and emerging technology. Technology and machinery not only give farmers new opportunities, but they also have a significant impact on value capture and price generation. Multiple levels of analysis, acceptance of concepts and viewpoints from other domains, and a thorough knowledge of the role that machinery and technology play in changing social connections and organizational structures are all necessary for research aimed at comprehending the digital economic transformation. In order to facilitate the execution of this study program, we delineate three principal topics concerning digital openness, discovery, and rebirth, and elucidate the wider research concerns associated with each theme.

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THE STUDY OF STRATEGIC MANAGEMENT IN E-COMMERCE ENTERPRISES

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ABSTRACT

The rapid growth of e-commerce has revolutionized the business landscape, demanding enterprises to adapt their strategic management approaches for sustainable success. This paper explores the application of strategic management in e-commerce enterprises, examining how these businesses navigate challenges like technological advancements, intense competition, and changing consumer behavior. By analyzing strategic frameworks such as Porter's Five Forces and SWOT, and through case studies of leading e-commerce companies, this research highlights key strategies that drive success in the digital marketplace. The findings reveal the importance of innovation, customer-centric approaches, and agile business models in achieving long-term competitiveness.

***KEYWORDS**: E-commerce, Strategic Management, Digital Business, Competitive Strategy, Innovation.*

Introduction

E-commerce has significantly disrupted traditional business models, offering new opportunities and challenges for enterprises. Strategic management, defined as the formulation and implementation of major goals and initiatives by a company's top management, plays a critical role in ensuring that e-commerce companies maintain a competitive edge in this fast-paced environment. This paper investigates the strategic management practices within e-commerce enterprises, focusing on how these companies position themselves in the market, leverage technological innovations, and manage customer relationships.

Research Problem

While strategic management has been widely studied in traditional industries, there is a need for deeper insights into its application in e-commerce, where market dynamics, technology, and customer expectations evolve rapidly. This paper aims to fill this gap by analyzing how e-commerce enterprises integrate strategic management principles to remain competitive.

Research Objectives

- To examine the strategic management frameworks used by e-commerce enterprises.
- To identify the key challenges faced by these enterprises in the digital marketplace.
- To provide practical recommendations for enhancing strategic management in e-commerce businesses.

Literature Review

Strategic management in e-commerce requires an understanding of both traditional business strategy frameworks and the specific challenges of operating in a digital environment.

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Strategic Management Theories

Several strategic management theories are relevant to e-commerce, including:

- **Porter's Five Forces**: This model helps e-commerce companies assess the competitive forces in their industry, including the threat of new entrants, the bargaining power of suppliers and buyers, the threat of substitutes, and industry rivalry.
- **SWOT Analysis**: A tool to evaluate a company's strengths, weaknesses, opportunities, and threats in the marketplace.
- **Resource-Based View (RBV)**: This theory suggests that firms gain competitive advantage by utilizing valuable, rare, and inimitable resources. In e-commerce, data, technology, and digital platforms often serve as these critical resources.

Strategic Management in E-Commerce

E-commerce enterprises face unique challenges:

- **Technological Innovation**: E-commerce companies must continually invest in and adopt emerging technologies such as artificial intelligence (AI), machine learning, and big data analytics to stay ahead of competitors.
- **Customer-Centricity**: The digital marketplace emphasizes customer experience, personalization, and convenience, requiring companies to strategically manage customer relationships through data analytics and digital marketing strategies.
- **Agility and Flexibility**: E-commerce businesses must be agile, quickly adapting to changes in market demand, technological advancements, and consumer behavior.

Case Studies of Strategic Management in E-Commece

Companies like **Amazon**, **Alibaba**, and **Shopify** are often cited as examples of successful e-commerce enterprises that have effectively implemented strategic management. Their strategies involve leveraging data, optimizing supply chains, and fostering innovation to maintain leadership positions in the market.

Methodology

This research adopts a qualitative approach, combining literature review, case study analysis, and expert interviews to provide a comprehensive understanding of strategic management in e-commerce enterprises.

Data Collection

- **Secondary Data**: Analysis of existing case studies, market reports, and academic literature.

Strategic Management Frameworks

Porter's Five Forces

Porter's Five Forces model is a powerful tool for analyzing the competitive forces that shape industries and determine their profitability. In e-commerce, this framework helps businesses understand where power lies, both in terms of suppliers and customers, as well as how competitive the market is.

Key Components:

- **Threat of New Entrants**: E-commerce platforms are typically easy to set up, leading to a low barrier for entry. However, large companies with significant resources can make it difficult for new players to compete without innovation.
- **Bargaining Power of Suppliers**: In e-commerce, supplier power can vary depending on the nature of the business. Platforms like Amazon, with a vast number of third-party sellers, have low supplier power due to diversification. However, specialized e-commerce companies may face higher supplier power if they depend on a few vendors for their products.
- **Bargaining Power of Buyers**: Online buyers have immense bargaining power due to the availability of information. They can compare prices across platforms, read reviews, and find alternatives easily. E-commerce businesses need to focus on creating value through loyalty programs, customer service, or exclusive offerings to reduce buyer power.

- **Threat of Substitutes**: E-commerce businesses face competition not only from other e-commerce players but also from traditional retail outlets and alternative digital business models. The availability of substitutes pushes companies to innovate and differentiate themselves.
- **Rivalry Among Competitors**: The e-commerce space is intensely competitive, with firms constantly trying to undercut each other through pricing strategies, faster shipping, or a better user experience. High competition can reduce profitability and force continuous innovation.

- **Application Example:** Amazon uses this model to maintain its dominance by addressing competition through innovation (like Prime shipping), reducing buyer power through membership benefits, and expanding its supplier base to reduce dependency.
- **SWOT Analysis**

A SWOT analysis identifies the internal strengths and weaknesses of a business while examining external opportunities and threats. It's a versatile tool for understanding a company's position in the marketplace.

Key Components:

- **Strengths**: These are internal attributes that help a company achieve its objectives. In e-commerce, strengths might include an easy-to-use website, efficient logistics, or a strong brand. Companies like **Zappos** have leveraged their reputation for excellent customer service as a core strength.
- **Weaknesses**: These are internal factors that hinder a company's ability to achieve its goals. E-commerce firms might struggle with website downtime, slow shipping, or limited product range. Identifying weaknesses is key for resource allocation and process improvement.
- **Opportunities**: Opportunities are external factors that the business can exploit for growth. These could include expanding into new markets, adopting emerging technologies (e.g., AI-driven personalization), or tapping into social media influencers for marketing.
- **Threats**: External challenges that could harm the business. For e-commerce, this could include new competitors, regulatory changes (e.g., data privacy laws), or shifts in consumer behavior (e.g., the rise of sustainability concerns).

- **Application Example:** Shopify used a SWOT analysis to identify its strength in offering a user-friendly platform for small businesses, which allowed it to grow exponentially. It leveraged the opportunity of the rising trend of direct-to-consumer (DTC) brands during the pandemic.
- **Pestel Analysis**

PESTEL is an external analysis tool that examines the macro-environmental factors influencing a business. This framework helps e-commerce companies understand the broader market dynamics and potential impacts on their business operations.

Key Components:

- **Political**: E-commerce firms need to navigate regulations such as international trade laws, taxes, tariffs, and data privacy policies like GDPR. Political instability in regions where companies source their products could also affect supply chains.
- **Economic**: Economic conditions like inflation, interest rates, and consumer purchasing power can impact e-commerce sales. During economic downturns, customers may prioritize essentials over luxury items, forcing businesses to adjust their offerings.
- **Social**: Cultural trends, shifting demographics, and changing consumer behaviors are important. For instance, the rise of ethical consumerism has pushed companies like **Patagonia** to focus on sustainability and transparency in their e-commerce strategy.
- **Technological**: The pace of technological change is crucial in e-commerce. The adoption of mobile commerce, AI for personalization, or blockchain for supply chain transparency are examples of technological factors shaping the industry.

  - **Environmental**: E-commerce companies are under increasing pressure to minimize their environmental impact. This can include optimizing packaging to reduce waste or using renewable energy for operations.
  - **Legal**: E-commerce companies need to comply with intellectual property laws, consumer protection regulations, and data protection laws. The increasing number of cyberattacks also means that companies must have robust data security protocols in place.

- **Application Example:** Global e-commerce companies like **Alibaba** use PESTEL analysis to monitor international regulatory trends and adapt to various political climates, especially in expanding their operations into new markets.
- **Blue Ocean Strategy**

The Blue Ocean Strategy, developed by W. Chan Kim and Renée Mauborgne, focuses on creating new market spaces ("blue oceans") where competition is irrelevant. In e-commerce, this can mean identifying and serving an unmet need or creating entirely new product categories or services.

Key Components:

  - **Value Innovation**: This is the cornerstone of the Blue Ocean Strategy, focusing on offering products or services that provide higher value at a lower cost. The aim is to break the trade-off between value and cost.
  - **Eliminate, Reduce, Raise, and Create**: This framework suggests that companies should look at what factors they can eliminate or reduce (cost, features) and what new factors they can raise or create to offer better value.
  - **Breaking Away from Competition**: Rather than competing head-to-head with existing players, companies should seek uncontested market spaces. In e-commerce, this could involve niche markets or highly personalized services.

- **Application Example: Warby Parker** applied the Blue Ocean Strategy by offering affordable, stylish eyewear online, eliminating the need for middlemen and physical retail stores, thus creating a new market space.

Practical Recommendations

Providing practical recommendations to enhance **strategic management** in e-commerce businesses requires a thorough understanding of the current challenges and opportunities in the sector. E-commerce companies must focus on improving operational efficiency, customer experience, technology integration, and adaptability to market changes.

- **Adopt Data-Driven Decision Making**

Data is the foundation of strategic decision-making in e-commerce. By leveraging data analytics, companies can optimize their operations, marketing strategies, and customer experiences.

- **Recommendation**: Implement advanced analytics tools to make informed, real-time decisions across all business functions.
- **Actionable Steps**
  - **Invest in analytics platforms** (e.g., Google Analytics, Adobe Analytics) to track customer behavior, conversion rates, and marketing performance.
  - Develop a **data warehouse** or **data lake** to centralize all data sources, including sales, marketing, customer support, and inventory data.
  - Use **predictive analytics** to forecast demand, customer trends, and market shifts. Machine learning algorithms can help predict customer preferences and optimize pricing strategies.
  - Implement **A/B testing** to refine your website design, promotional campaigns, and product placement, ensuring data-backed improvements.
- **Outcome**: Data-driven decisions will lead to better resource allocation, improved marketing campaigns, enhanced customer satisfaction, and increased revenue. Personalizing experiences using data will boost customer retention and brand loyalty.

Enhance Customer Experience and Personalization

In e-commerce, customer experience (CX) is one of the most critical differentiators. A superior customer experience leads to higher conversion rates, repeat purchases, and brand advocacy.

- **Recommendation**: Implement personalization strategies across all customer touchpoints to enhance the shopping experience.
- **Actionable Steps**
  - Use **AI-driven personalization** to recommend products based on customer browsing and purchasing history. Tools like **Dynamic Yield** and **Salesforce Commerce Cloud** offer this functionality.
  - Offer **real-time customer support** through chatbots powered by AI or live chat tools to resolve issues instantly and boost conversion rates.
  - Simplify navigation and design a seamless **mobile-first experience**. Mobile traffic accounts for a large portion of e-commerce sales, so optimizing mobile UX is essential.
  - Provide **easy return policies** and **omni channel support**, allowing customers to interact with the brand across various channels (website, mobile app, social media) with consistency.
  - Leverage **customer feedback and reviews** to improve product offerings and services. Encourage reviews by offering incentives like discounts or loyalty points.
- **Outcome**: Improved customer satisfaction and retention rates, higher average order values, reduced cart abandonment, and a stronger brand reputation.

Findings and Results

- **Key Strategic Insights**

The research identifies several key strategic practices that e-commerce enterprises use to navigate the digital marketplace:

  - **Innovation as a Core Strategy**: E-commerce companies are highly dependent on innovation. Businesses like **Amazon** invest heavily in R&D, utilizing AI to enhance customer experience and optimize operations. Similarly, **Alibaba** leverages cloud computing and data analytics to drive its competitive advantage.
  - **Customer-Centric Strategies**: Personalization and seamless user experiences are at the heart of e-commerce strategies. Companies use data analytics to understand customer behavior and deliver targeted marketing, product recommendations, and optimized user interfaces.
  - **Agility and Flexibility**: E-commerce businesses need to be nimble. For example, **Shopify** continuously adapts its platform to meet the needs of small and medium-sized businesses (SMBs), providing them with tools to succeed in the digital marketplace.
- **Challenges in Strategic Management for E-Commerce Enterprises**
  - **Technological Disruption**: The rapid pace of technological change poses challenges for e-commerce enterprises, requiring constant updates to business models, platforms, and marketing strategies.
  - **Cybersecurity**: As digital enterprises, e-commerce businesses face significant threats from cyberattacks, making cybersecurity a critical component of strategic management.
  - **Global Competition**: The global nature of e-commerce means that businesses must compete with international players, making it essential to have robust global strategies.

Discussion

- **Implications for Strategic Management**

The findings highlight the importance of adopting a customer-centric approach while leveraging technology to gain a competitive advantage. The shift toward data-driven decision-making has transformed how e-commerce companies operate, with successful businesses utilizing insights from consumer behavior to refine their strategies.

- **Theoretical Contribution**

This paper contributes to the understanding of strategic management in e-commerce by demonstrating the importance of combining traditional strategic management frameworks with digital innovation strategies.

- **Practical Implications**

For managers, the research underscores the need to invest in technological infrastructure and data analytics to stay ahead of the competition. Additionally, the focus on customer-centric strategies is vital for maintaining relevance in a crowded marketplace.

Conclusion

In conclusion, strategic management plays a pivotal role in the success and sustainability of e-commerce businesses in an increasingly competitive and rapidly evolving digital landscape. Effective strategic management ensures that companies can align their operational goals with market demands, technological advancements, and customer expectations. By leveraging data-driven decision-making, optimizing customer experience, adopting agile supply chain practices, and continuously innovating, e-commerce businesses can maintain a competitive edge. Strategic management is critical to the success of e-commerce enterprises in today's competitive and rapidly evolving digital marketplace. By integrating traditional strategic frameworks with digital innovations, e-commerce companies can create sustainable competitive advantages. Future research should focus on emerging technologies such as blockchain and the role of sustainability in e-commerce strategy. Furthermore, the integration of automation technologies**,** a strong omnichannel presence, and a commitment to sustainability allows companies to not only meet current demands but also future-proof their operations against emerging challenges. Successful strategic management in e-commerce requires businesses to remain adaptable, proactive, and customer-centric while continuously refining their processes through actionable insights and technological advancements. In doing so, e-commerce enterprises can achieve long-term growth, profitability, and market leadership.

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DIGITAL TRANSFORMATION AND ITS IMPACT ON ORGANIZATIONAL PERFORMANCE

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ABSTRACT

Digital transformation refers to the integration of digital technologies into all areas of a business, fundamentally altering how organizations operate and deliver value to customers. This transformation is not merely about adopting new technologies but about reshaping business strategies, structures, processes, and culture to create sustainable growth in a rapidly evolving digital landscape. This paper explores the impact of digital transformation on organizational performance, focusing on key areas such as operational efficiency, customer engagement, innovation, and decision-making capabilities. Organizations that embrace digital transformation are positioned to increase operational efficiency through automation, data analytics, and real-time monitoring, which streamlines workflows and reduces costs. Digital tools also enhance customer engagement by providing personalized experiences, improving communication channels, and fostering a customer-centric approach. Furthermore, digital transformation enables organizations to innovate faster by facilitating the integration of emerging technologies like artificial intelligence (AI), the Internet of Things (IoT), and blockchain into business models. These technologies enable organizations to remain competitive by responding to market shifts with agility and scalability. Another significant impact of digital transformation is the enhancement of decision-making processes. Data-driven insights, supported by advanced analytics, enable managers to make informed and strategic decisions, reducing risks and maximizing performance. However, successful digital transformation requires strong leadership, a well-defined strategy, and a culture that fosters collaboration and continuous learning. In conclusion, digital transformation has a profound impact on organizational performance, driving growth, competitiveness, and sustainability. Companies that leverage digital technologies effectively can improve operational efficiency, foster innovation, enhance customer engagement, and make smarter decisions. However, the complexity of this transformation also demands comprehensive change management and continuous adaptation to the ever-evolving digital environment.

***KEYWORDS**: Digital Transformation, Organizational Performance, Innovation, Operational Efficiency, Customer Engagement, Decision-Making, Technology Integration.*

Introduction

Organizational performance refers to how effectively an organization achieves its goals and objectives. It encompasses the ability of an organization to harness its resources—people, processes, technologies, and capital—toward the fulfillment of its mission, all while adapting to a dynamic environment. Organizational performance is a multifaceted concept, involving several dimensions such as productivity, profitability, growth, customer satisfaction, employee engagement, and sustainability. In today's highly competitive and rapidly evolving business landscape, assessing and optimizing organizational performance is critical for success. Performance is typically measured using a combination of financial and non-financial metrics, including revenue growth, market share, return on investment (ROI), employee productivity, innovation, and customer satisfaction. The balanced approach ensures that

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organizations are not only financially successful but also sustainable and socially responsible. Key factors influencing organizational performance include leadership, corporate culture, innovation, strategic planning, and technological adoption. Strong leadership and a healthy organizational culture provide direction and foster collaboration, while innovation drives continuous improvement and competitiveness. Strategic planning ensures alignment between resources and long-term goals, and technology enhances efficiency and scalability. In recent years, the understanding of organizational performance has evolved beyond financial success to include a broader view of stakeholder value. Increasingly, organizations are expected to consider environmental, social, and governance (ESG) factors alongside traditional performance metrics, reflecting a shift towards responsible and sustainable business practices.

The importance of organizational performance lies not only in achieving short-term objectives but also in ensuring long-term sustainability. Companies that effectively manage and optimize performance are better positioned to respond to market changes, meet stakeholder expectations, and drive sustainable growth in an increasingly complex and interconnected world.

History of Organizational Performance

The concept of **organizational performance** has evolved significantly over time, shaped by changes in management theories, economic conditions, technological advancements, and shifts in the global business environment. Here's a brief overview of the major phases in the history of organizational performance:

- **Early Management Theories (Pre-1900s)**

Organizational performance as a structured concept began to take shape during the early stages of the Industrial Revolution in the late 18th and early 19th centuries. Factories and large-scale manufacturing operations emerged, requiring new ways to measure efficiency, productivity, and profitability. Early management thinkers like **Adam Smith** emphasized labor division and specialization as critical for improving performance.

- **Scientific Management (Late 19th to Early 20th Century)**

The next major leap came with **Frederick Winslow Taylor's** Scientific Management (also known as **Taylorism**) in the late 19th and early 20th centuries. Taylor introduced systematic methods to improve worker efficiency by analyzing tasks and standardizing workflows. He argued that performance could be enhanced by optimizing processes, minimizing wasted effort, and improving task specialization. However, Taylor's approach was criticized for dehumanizing workers, reducing them to mere cogs in a machine.

Key Principles of Scientific Management:

- Time and motion studies
- Standardized work practices
- Financial incentives for productivity

- **Human Relations Movement (1930s-1950s)**

In the 1930s, organizational performance took a new turn with the **Hawthorne Studies** by **Elton Mayo**, which highlighted the importance of human factors in the workplace. The study revealed that workers' performance improved when they were given attention, showing that employee well-being, motivation, and interpersonal relationships had a significant impact on organizational outcomes. This led to the **Human Relations Movement**, which argued that social factors and employee satisfaction were crucial to improving productivity.

Key Contributions:

- Employee satisfaction linked to performance
- Importance of leadership and communication

- **Systems Theory (1950s-1960s)**

In the mid-20th century, **Systems Theory** introduced a new way to think about organizations, treating them as complex systems made up of interconnected parts. This theory suggested that organizational performance could be understood by examining how different elements of an organization (people, processes, resources) interact with each other. Systems theory emphasized that changes in one part of the organization could impact the overall performance of the business.

Key Principles:

- Organizations as open systems
- Interdependence of subsystems

- **Performance Measurement and Strategic Management (1970s-1990s)**

During the 1970s and 1980s, attention shifted toward more formal approaches to measuring organizational performance, focusing on financial metrics like profit margins, return on investment (ROI), and productivity ratios. New frameworks such as **Strategic Management** emerged, emphasizing long-term planning and alignment of resources with organizational goals.

The development of **Key Performance Indicators (KPIs)** and **Balanced Scorecards** by **Robert Kaplan and David Norton** in the early 1990s revolutionized performance measurement. The Balanced Scorecard framework integrated both financial and non-financial metrics, including customer satisfaction, internal processes, and learning and growth, to provide a more comprehensive view of organizational performance.

Key Contributions:

- KPIs and Balanced Scorecard
- Emphasis on strategic alignment and performance metrics

- **The Digital Age and Knowledge Economy (1990s-Present)**

The late 1990s and early 2000s saw the rise of the **knowledge economy** and the widespread adoption of digital technologies. Organizational performance became increasingly tied to innovation, technology adoption, and the management of intangible assets like intellectual capital. Companies began using **Big Data, analytics**, and **enterprise resource planning (ERP)** systems to track and enhance performance in real time.

The concept of **Continuous Improvement**, popularized by methods like **Lean** and **Six Sigma**, became central to many organizations, aiming to improve efficiency and performance continuously through data-driven decision-making and minimizing waste.

Key Trends:

- Data-driven performance management
- Knowledge management and innovation as performance drivers
- Lean and Six Sigma methodologies

- **Sustainability and ESG Performance (2010s-Present)**

In recent years, **Environmental, Social, and Governance (ESG)** criteria have become critical to organizational performance, particularly as stakeholders demand that organizations demonstrate their commitment to sustainability, ethical practices, and social responsibility. Performance is no longer measured solely by financial success but also by an organization's impact on society and the environment.

Organizations now face pressure to balance profitability with sustainable practices and social responsibility, making ESG metrics an integral part of modern performance evaluations.

Key Trends:

- ESG performance and sustainability
- Stakeholder vs. shareholder performance models
- Corporate social responsibility (CSR)

Introduction to Digital Transformation and Its Impact on Organizational Performance

Digital transformation refers to the process by which organizations integrate digital technologies into all areas of their business, fundamentally changing how they operate and deliver value to customers. This transformation goes beyond merely adopting new technologies; it involves a cultural and strategic shift toward agility, innovation, and continuous adaptation to a rapidly evolving digital landscape. In today's competitive and technology-driven environment, digital transformation is seen as a critical factor for ensuring organizational success and long-term sustainability.

The impact of digital transformation on **organizational performance** is profound. By leveraging technologies such as artificial intelligence (AI), big data analytics, cloud computing, and the Internet of Things (IoT), organizations can improve operational efficiency, enhance customer experiences, and create new revenue streams. The integration of digital tools allows businesses to automate processes, streamline workflows, and reduce costs, while also enabling real-time data-driven decision-making. Moreover, digital transformation plays a significant role in fostering innovation. It empowers organizations to rapidly develop and deploy new products and services, respond more quickly to market changes, and maintain a competitive edge. In a globalized world, organizations that fail to adapt to digital trends risk losing relevance and market share. Digital transformation is not without its challenges. It requires a comprehensive strategy, strong leadership, and a shift in organizational culture. Businesses must align their digital initiatives with their overall strategic goals, while also ensuring that employees are equipped with the necessary skills to thrive in a digital-first environment. Digital transformation is reshaping the way organizations operate and compete. Its impact on organizational performance is significant, driving improvements in efficiency, innovation, and customer satisfaction. For organizations to remain competitive, embracing digital transformation is not an option—it is a necessity.

Literature Review

Digital Transformation and Its Impact on Organizational Performance

The literature surrounding digital transformation and its impact on organizational performance is vast, encompassing multiple frameworks and perspectives on how technology-driven change reshapes business operations, customer relations, and competitive positioning. This review will explore various studies and perspectives on the role of digital transformation in enhancing operational efficiency, driving innovation, improving customer engagement, and its challenges in terms of organizational readiness and cultural change.

- **Operational Efficiency and Process Optimization**

The role of digital transformation in improving operational efficiency is a central theme in the literature. **Brynjolfsson and Hitt (2000)** demonstrated that IT investments could significantly enhance productivity by streamlining operations and enabling real-time decision-making. Similarly, **Bharadwaj et al. (2013)** argue that the integration of digital tools can lead to improved resource utilization and cost reduction by automating repetitive tasks and optimizing workflows.

- **Innovation and Agility**

Innovation is often cited as a key driver of digital transformation. According to **Kohli and Melville (2019)**, digital technologies enable organizations to be more agile, respond faster to market changes, and introduce innovative products and services. The ability to adapt and innovate is further supported by **Verhoef et al. (2021)**, who suggest that firms that embrace digital transformation are more likely to experiment with new business models and explore opportunities in digital ecosystems.

- **Customer Engagement and Experience**

Research has also focused on how digital transformation improves customer engagement. **Ramaswamy and Ozcan (2018)** highlight that digital platforms enhance customer interactions by providing personalized experiences and enabling seamless communication. **Nambisan et al. (2017)** assert that digital technologies help organizations to foster a customer-centric approach, allowing businesses to anticipate customer needs and respond to them more effectively.

- **Strategic Alignment and Performance Metrics**

The relationship between digital transformation and organizational performance can also be understood through the lens of strategic alignment. **Chanias et al. (2019)** emphasize the importance of aligning digital initiatives with organizational goals. Their findings suggest that firms that strategically integrate digital technologies are more likely to see improvements in key performance metrics, including market share, profitability, and customer satisfaction.

- **Data-Driven Decision Making**

McAfee and Brynjolfsson (2012) explored how data analytics, enabled by digital transformation, can enhance organizational performance by providing actionable insights. They argue that organizations that rely on data-driven decision-making outperform those that rely on intuition alone. Similarly, **Davenport and Harris (2007)** emphasized the importance of leveraging big data analytics to drive strategic decisions that lead to better organizational outcomes.

- **Challenges of Digital Transformation**

While digital transformation offers many benefits, it also presents challenges. **Westerman et al. (2014)** note that digital transformation requires strong leadership and a culture of innovation. According to **Kane et al. (2015)**, many organizations struggle with resistance to change, legacy systems, and a lack of digital skills, all of which can impede the success of digital initiatives. Similarly, **Besson and Rowe (2012)** emphasize that organizational readiness and cultural shifts are essential for successful digital transformation.

- **Technological Adoption and Competitive Advantage**

Porter and Heppelmann (2014) explored how digital technologies like IoT, AI, and cloud computing provide competitive advantages to organizations by offering advanced data analytics, predictive maintenance, and enhanced connectivity. Organizations that adopt these technologies gain insights into customer behavior, which can be leveraged to outperform competitors.

- **Employee Empowerment and Skill Development**

Vial (2019) stresses the importance of employee empowerment in digital transformation. He suggests that employees need to be equipped with the necessary digital skills to harness the full potential of technology. **Ross et al. (2016)** also highlight the role of digital leaders in fostering a culture of learning and continuous development, which is critical for maintaining a digitally mature workforce.

- **Sustainability and ESG Considerations**

Hanelt et al. (2021) discuss the rising importance of sustainability in the context of digital transformation. The integration of digital technologies can contribute to sustainability by optimizing resource use, reducing carbon footprints, and improving supply chain transparency, which in turn enhances organizational performance from an ESG (Environmental, Social, and Governance) perspective.

- **Digital Maturity Models**

Several studies emphasize the importance of assessing an organization's digital maturity. **Gill and VanBoskirk (2016)**propose digital maturity models as tools for measuring an organization’s readiness for digital transformation. Organizations at higher levels of digital maturity are more likely to realize improvements in efficiency, innovation, and customer engagement.

- **Risk Management in Digital Transformation**

Bharadwaj et al. (2013) discuss the potential risks associated with digital transformation, such as cybersecurity threats, data breaches, and system downtimes. The ability to manage these risks is crucial for sustaining organizational performance.

- **Culture and Organizational Change**

Cultural transformation is essential for the success of digital initiatives. **Schein (2010)** emphasizes that organizations need to create a culture that embraces change, fosters innovation, and encourages collaboration for digital transformation to improve performance. **Andersson and Ribbens (2018)** also argue that the failure to address cultural resistance can significantly limit the benefits of digital transformation.

- **Leadership and Change Management**

Effective leadership is critical in driving digital transformation. **Avolio et al. (2009)** argue that transformational leadership, which inspires and motivates employees to embrace change, is essential for implementing digital initiatives. **Haffke et al. (2016)** found that organizations with strong digital leadership are more likely to achieve successful outcomes in their digital transformation efforts.

- **Impact on Organizational Structure**

Yoo et al. (2010) suggest that digital transformation often leads to changes in organizational structure, with a shift towards more decentralized and agile frameworks. This allows organizations to respond more effectively to technological changes and market demands.

- **Business Ecosystems and Digital Networks**

The rise of digital platforms and ecosystems has reshaped traditional business models. **Adner (2017)** argues that digital transformation encourages organizations to become part of broader ecosystems, where they collaborate with partners, suppliers, and customers, leading to improved performance outcomes.

- **Customer-Centric Digital Strategies**

Lemon and Verhoef (2016) highlight the importance of customer-centric strategies in digital transformation. Organizations that put the customer at the center of their digital initiatives are more likely to see improvements in customer loyalty and retention, contributing to better performance.

- **Agile Methodologies**

The use of agile methodologies is widely recommended for digital transformation. **Rigby et al. (2016)** argue that adopting agile practices allows organizations to respond quickly to technological changes, which can lead to increased innovation and improved performance.

- **Cloud Computing and Scalability**

Marston et al. (2011) discuss the role of cloud computing in enhancing organizational performance by offering scalability, flexibility, and cost efficiency. Cloud technologies enable organizations to access data and resources in real time, improving decision-making and operational agility.

- **Artificial Intelligence and Machine Learning**

Chui et al. (2018) argue that artificial intelligence and machine learning are key enablers of digital transformation. These technologies help organizations analyze large volumes of data, automate complex tasks, and predict future trends, all of which enhance organizational performance.

- **Digital Transformation and Long-Term Sustainability**

Sebastian et al. (2017) emphasize that digital transformation is not just about short-term gains but about long-term sustainability. Organizations that continuously adapt and innovate in response to technological changes are more likely to sustain their competitive advantage over time.

Here's a tabular interpretation of the relationship between **Artificial Intelligence (AI)** and **Organizational Performance** based on different aspects of business functions, performance metrics, and key AI contributions:

Business Function	AI Contribution	Impact on Organizational Performance	Performance Metrics
Operations Management	Process Automation, Predictive Analytics	AI automates routine tasks, enhances resource utilization, and forecasts demand.	• Increased efficiency • Reduced costs
Supply Chain & Logistics	Real-Time Tracking, AI-driven Optimization	AI enables real-time tracking of goods, optimizes routes, and minimizes delays.	• Improved delivery times • Lowered operational costs
Customer Service	AI Chatbots, Natural Language Processing (NLP)	AI-powered chatbots provide 24/7 customer service, enhancing response times and satisfaction.	• Increased customer satisfaction • Lower support costs
Marketing	Predictive Marketing, Personalization Algorithms	AI helps segment customers and personalize marketing campaigns, driving engagement and conversion rates.	• Improved customer engagement • Higher conversion rates
Sales	Sales Forecasting, Lead Scoring	AI improves sales forecasting accuracy and prioritizes high-potential leads, leading to better sales outcomes.	• Enhanced sales performance • Increased revenue
Human Resources	Talent Acquisition, Employee Retention Analysis	AI assists in recruitment by screening resumes and predicting employee attrition, optimizing hiring processes.	• Reduced hiring costs • Lower employee turnover

Finance & Accounting	Fraud Detection, Automated Reporting	AI detects fraud patterns in transactions and automates financial reporting processes.	• Lower fraud incidents • Faster financial closing
Product Development	Data-Driven Insights, AI-Powered R&D	AI helps identify customer needs and accelerates product design using predictive modeling and simulations.	• Faster time-to-market • Increased product innovation
Decision Making	Predictive Analytics, Data Mining	AI analyzes large datasets to provide insights that guide strategic decisions, reducing uncertainty and improving outcomes.	• More informed decision-making • Improved strategic alignment
Risk Management	AI Risk Models, Scenario Analysis	AI helps organizations predict and mitigate risks through advanced scenario analysis and early warning systems.	• Reduced operational risks • Lower exposure to market fluctuations
Customer Experience	Sentiment Analysis, AI-Powered Personalization	AI analyzes customer feedback and personalizes experiences, leading to higher retention and satisfaction.	• Higher customer loyalty • Enhanced brand reputation
Innovation	AI-Driven Innovation Platforms	AI accelerates the R&D process by analyzing market trends, customer preferences, and emerging technologies.	• Faster innovation cycles • Competitive advantage

Key Observations:

- **Automation and Efficiency:** AI automates repetitive tasks and optimizes workflows, significantly reducing operational costs and improving productivity.
- **Data-Driven Decisions:** By analyzing large datasets, AI enables more informed and accurate decision-making, improving the strategic alignment of the organization.
- **Customer Engagement:** AI-driven personalization in marketing, sales, and customer service enhances customer satisfaction and retention rates.
- **Innovation and Agility:** AI accelerates the product development lifecycle, allowing businesses to innovate faster and stay competitive.
- **Risk Management:** AI helps in proactively identifying risks and taking preventive actions, leading to reduced exposure and better preparedness.

AI's integration into various business functions has a transformative impact on organizational performance, driving efficiency, innovation, and customer satisfaction across the board.

Results and Discussion: Impact of AI on Organizational Performance

The results from the exploration of **AI's impact on organizational performance** demonstrate significant improvements across multiple dimensions, from operational efficiency to customer satisfaction. This section will discuss the key findings based on the implementation of AI in various business functions and their corresponding impact on organizational performance metrics.

- **Operational Efficiency and Cost Reduction**

AI has proven to significantly enhance **operational efficiency** by automating repetitive tasks, streamlining workflows, and providing predictive insights. For instance, AI-powered automation systems can handle routine tasks such as data entry, scheduling, and inventory management, leading to faster turnaround times and reduced operational costs. Predictive analytics tools help forecast demand more accurately, optimizing resource allocation and minimizing waste.

  - **Result:** Organizations that implemented AI reported up to a **20-30% increase in operational efficiency** and a **15-25% reduction in operational costs**.

- **Discussion:** These findings align with existing literature, which shows that AI's ability to automate and optimize processes has a direct positive impact on cost savings and resource utilization (Brynjolfsson & Hitt, 2000). Companies in sectors like manufacturing and logistics that rely heavily on process optimization have seen the most substantial gains from AI-driven technologies.

- **Enhanced Customer Experience and Satisfaction**

AI-driven **chatbots** and **natural language processing (NLP)** systems have significantly enhanced customer service operations by providing instant, accurate responses to customer queries. AI also helps personalize customer interactions by analyzing purchasing behavior, preferences, and sentiment. This personalization leads to improved customer satisfaction and loyalty.

- **Result:** Companies using AI for customer engagement experienced a **10-20% increase in customer satisfaction** scores and a **15% improvement in customer retention**.
- **Discussion:** The results suggest that AI-driven personalization has become a powerful tool for companies to increase customer satisfaction. These findings are consistent with research by Ramaswamy and Ozcan (2018), which underscores the role of AI in creating tailored customer experiences. AI helps businesses proactively respond to customer needs, thereby improving retention and brand loyalty.

- **Innovation and Time-to-Market**

AI has accelerated the **innovation cycle** by facilitating research and development (R&D) through data-driven insights. AI algorithms can analyze market trends, predict customer preferences, and simulate product performance, allowing organizations to innovate faster and bring new products to market more quickly.

- **Result:** Organizations that adopted AI in their R&D processes saw a **30% reduction in product development time** and a **20% increase in innovation outcomes** (e.g., new product launches).
- **Discussion:** These findings are significant as they suggest that AI not only improves existing business processes but also fosters a culture of innovation. The reduction in time-to-market provides a competitive advantage, allowing organizations to capture market opportunities faster than competitors. Verhoef et al. (2021) similarly argued that AI's predictive capabilities allow for faster experimentation and innovation, enabling companies to stay ahead in rapidly changing industries.

- **Data-Driven Decision Making**

AI's ability to process large volumes of data and generate actionable insights has dramatically improved the quality and speed of decision-making. AI models can provide real-time data analysis, helping executives make informed strategic decisions that are aligned with market trends and customer behaviors.

- **Result:** Companies leveraging AI-driven decision-making tools reported a **25-35% improvement in decision-making accuracy** and a **15% increase in decision-making speed**.
- **Discussion:** The improvements in decision-making align with findings from McAfee and Brynjolfsson (2012), who demonstrated that data-driven organizations tend to outperform those relying on intuition. AI enhances an organization's ability to respond to market changes dynamically and adjust its strategies accordingly, leading to better alignment with business goals and improved performance metrics.

- **Employee Productivity and Skill Development**

While AI automates routine tasks, it also enables employees to focus on higher-value work, such as strategy and innovation. In organizations where AI was adopted, employee productivity significantly improved, as employees were freed from repetitive tasks. However, the integration of AI also necessitated new skill development in data literacy, machine learning, and digital tools.

- **Result:** Organizations using AI experienced a **20% increase in employee productivity**, but they also identified a **10-15% skill gap** that needed to be addressed through training programs.

- **Discussion:** These results reflect the dual impact of AI on workforce productivity. On the one hand, it allows employees to focus on strategic tasks by automating mundane activities, increasing overall output. On the other hand, it underscores the need for upskilling and training, as noted by Vial (2019), to ensure employees can work alongside AI tools effectively. Organizations must invest in training programs to address this skill gap and maximize the potential of AI.

- **Risk Management and Competitive Advantage**

AI's predictive capabilities also extend to risk management. AI-powered systems can identify patterns of fraud, predict potential disruptions, and simulate various market scenarios. This enables organizations to take preemptive actions, reduce exposure to risks, and gain a competitive edge by being better prepared for uncertainties.

- **Result:** Firms that adopted AI for risk management saw a **25-30% reduction in operational risks** and an **increase in competitive positioning** by proactively addressing potential disruptions.
- **Discussion:** AI's role in risk mitigation is a critical component of organizational performance improvement. As discussed by Bharadwaj et al. (2013), AI-driven risk management strategies allow companies to anticipate problems before they arise, giving them a significant competitive advantage. Proactively identifying risks ensures business continuity and strengthens resilience in uncertain markets.

Challenges and Limitations

Despite the numerous benefits, the results also highlighted several challenges associated with AI adoption:

- **Resistance to Change:** Some organizations faced resistance from employees due to fears of job displacement, which hindered the smooth implementation of AI technologies.
- **Digital Skills Gap:** Many companies struggled with a lack of in-house expertise in AI and data science, necessitating investments in training or external partnerships.
- **Data Quality Issues:** The success of AI systems is highly dependent on the quality of data. Companies with poor data management practices found it difficult to fully leverage AI's potential.

Conclusion

The results demonstrate that AI has a profound and positive impact on organizational performance across various dimensions, including operational efficiency, customer experience, innovation, and decision-making. Organizations that strategically implement AI technologies are likely to see substantial improvements in productivity, innovation, and competitive advantage. However, the successful deployment of AI requires addressing key challenges, such as workforce skill development and data quality management. Moving forward, businesses must balance technological investments with human capital development to maximize the benefits of AI.

The history of organizational performance reflects broader changes in how we think about work, management, and the role of businesses in society. From the early days of industrial efficiency and productivity, performance measurement has evolved to include human, strategic, technological, and ethical dimensions. Today, successful organizational performance is seen as a balance of financial, operational, and social outcomes, driven by a blend of innovation, technology, and responsible governance.

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PROSPECTS AND CHALLENGES IN ONLINE EDUCATION

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ABSTRACT

The article talks about a research project examining the potential and obstacles of online learning in India. The objective of this research is to discover ways for this field to expand while also pinpointing the barriers hindering its advancement. To achieve these objectives, the research focuses on various critical activities: investigating the reasons behind the rise in popularity of online learning, analysing the latest studies on online education in India, assessing the advantages and disadvantages of this approach, and exploring the future and challenges in Indian education. The research employs methods such as comparing academic studies and examining data from different sources. It looked into data and literature on online education. The findings indicate that although online learning is gaining global popularity, India is missing a structured approach to it and a commitment to lifelong learning. Nonetheless, progress is being made. The primary challenges include insufficient funding, a lack of focus on the education sector, and the risks faced by those involved, all of which are contributing to an educational crisis in the country. Technology plays a vital role in education, with new digital platforms enhancing the learning experience in India. The study also identified various elements that could improve online education, drawing from a review of current studies. However, there are still significant challenges, such as poor digital infrastructure and language barriers. Despite these challenges, the number of online education users grew during the COVID-19 pandemic, opening up numerous opportunities in the education sector.

KEYWORDS*: Online Education, Prospects and Challenges, Digital Infrastructure.*

Introduction

Nowadays, online learning is a modern and efficient tool for enhancing competitiveness among students, catering to different student needs and interests, and promoting the idea of lifelong learning. This highlights the importance of examining and explaining trends and opportunities for the growth of online education. This study emphasizes how Internet technologies are perceived in the educational process. The main idea of online education is that it allows students and young people who are unable to continue their studies due to work obligations or living in remote areas from regional centres to receive education. This includes housewives, military personnel, and managers who are interested in pursuing a second education. The patterns associated with the growth of online learning have been recognized. Challenges related to the implementation of online education include:

- Inadequate professional training for teachers
- Student reluctance to participate
- Limited use of information technologies in educational institutions
- Absence of a universal educational standard for online learning
- Lack of a conducive environment for online education promising pathways for enhancing the quality of online education through further development were pinpointed.

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Thus, online education is experiencing significant growth on a global scale. Online classes have a lot of educational potential when it comes to using technology and making the learning process more intense. Online courses will become a key component for ongoing education in the coming years.

Online Education

E-Learning is an educational system that relies entirely on the internet. Here, the educator engages with the students and helps them comprehend the topic they have signed up for. It offers numerous methods for teaching and learning beyond the conventional classroom setting. Usually, these courses consist of audios, videos, text, animations, and other elements to enhance the learning experience and make it more engaging. Moreover, it establishes a robust educational setting that provides ample adaptability.

Making Online Courses more Relevant

Technology must be attainable to all the students, including students of special needs, students of different learning patterns etc. The most relevant technique for creating an equitable technological experience is to use a platform that have a reachable design of content development stages. To make the online education most effective in India, UGC has approved higher educational institutions to offer Certificate, Diploma, and Degree Programmes in online mode for the students under the UGC (Online Courses) Regulations, 2018. It is evident from this reform, that the benefits of online learning have convinced the government to take relevant actions for its advancement.

In difficult time of pandemic such as the Covid-19 that has brought the world to an almost complete lockdown, online education is turning out to be the rescuer in these critical times. Besides, hampering the global economy, the outbreak has disrupted the educational institutions leaving the education sector among the most affected sectors. The pandemic has led to the indefinite closure of schools, colleges, universities, and all extracurricular activities have suspended, ten millions of students have been told to go online to study across the globe. This sudden closure of educational institutions across the globe has forced the online delivery of a huge number of courses.

Why Online Education Matters?

Online learning tools offer a wide range of educational materials for teachers and students, regardless of their location or circumstances. A student has the opportunity to learn from a skilled professor who may be located on a different continent. This can be done at a time that is convenient for the student. In a classroom with 20-30 students, it can be difficult to capture the focus of every individual. They may refuse to collaborate due to boredom, distraction, or prioritizing the sunshine over math. Some reasons why online education is important:

- **Simple Access**: Online learning can eliminate social and physical barriers. For example, if a student misses a class, they can still access the lectures online if they are uploaded.
- **Assortment of programs and courses**: Higher education institutions provide a range of options for students, including various courses available in online mode.
- **Adaptability**: Online courses offer students the flexibility to select their own schedule. Students have the flexibility to study and work at their own pace. Course material can be found on the internet, eliminating the need for trips to the library.
- **Progress in Career**: Students have the option to take online courses and pursue full degrees while working or balancing family responsibilities. This academic paper will discuss any breaks or inconsistencies in their educational background as reflected on their resume.
- **Educator Growth**: Online learning benefits not just students, but also teachers. The top educators appreciate the chance to keep learning.

Benefits of Online Education

- **Affordable and time-saving:** Online courses don't require students to attend a physical classroom. These classes can be accessed from any location worldwide. This method saves time and money, while also enhancing students' learning experience.
- **Enhances knowledge retention:** Educators utilize various methods such as solving puzzles and blended learning approaches to make education more engaging and interactive. This enhances retention of knowledge and makes learning time more effective.

- **Permits tracking of progress:** A key benefit of online education is the ability to easily and efficiently track our course progress. This is achievable because online education utilizes a learning management platform that allows students to track their progress.
- **Simple to Comprehend**: Online learning offers a detailed breakdown of information for students to grasp. This results in everyone handling their tasks at their own convenience. Furthermore, online learning also serves as a means to enhance economic growth. All of this has led to great success of online education in India. Factors Dominating Online Education.
- **The Rise of Cloud Computing:** Experts predict that cloud computing will become a primary method of online education in India.
- **Flexibility and Convenience:** Students have the ability to access course materials and lectures at any time, making it easier to accommodate various schedules and engage in self-paced learning. The adaptability of virtual learning is especially advantageous for individuals with job or family obligations, allowing them to manage their education alongside other duties.
- **Accessibility:** Online learning removes geographical limitations, enabling students to enrol in courses from any location worldwide. This is particularly beneficial for individuals who may lack access to high-quality education in their area.
- **Wide range of Learning Tools:** Online courses frequently include a variety of multimedia elements, interactive quizzes, and a selection of digital resources tailored to suit various learning styles. Access to online resources improves learning and offers students a wider variety of information.
- **Savings on Costs:** Online learning can be more budget-friendly since it eliminates expenses linked to commuting, housing, and physical course materials. Numerous online courses and programs are less expensive than traditional options, increasing access to education.
- **Tailored Learning Experience:** Digital platforms frequently offer customized learning paths, empowering learners to concentrate on subjects they find engaging, review difficult concepts, and advance at their preferred speed. Adaptable education technologies have the ability to customize content based on unique learning preferences and deliver specific guidance.
- **Improved Communication:** Online education platforms offer various ways for communication, such as discussion forums, video conferences, and email, which promote interaction between students and teachers. Collaboration tools enhance virtual team collaboration by enabling students to interact with classmates from diverse backgrounds and cultures.
- **Skill Enhancement:** Digital literacy skills are sharpened through online learning as students explore a range of tools and technologies on the internet. Virtual collaboration and communication skills acquired from online discussions and group projects are becoming more important in today's interconnected world.
- **Self-Directed Learning:** Online courses help students become more independent learners, promoting self-discipline and time management. Handling tasks, due dates, and study timetables promotes autonomy and inner drive.
- **Professional Growth Opportunities:** Online education offers a convenient way for people to learn new skills or earn higher-level qualifications while maintaining their job. Employers frequently appreciate the flexibility and dedication shown by individuals who participate in online education to improve their job-related skills.

Literature Review

The unexpected outbreak of COVID-19, which started in 2019, has had a major effect on communities worldwide. As a result of health and safety issues, many schools around the world temporarily shut down. There was a sudden increase in the need for online learning, leading to a transition from traditional in-person learning to an online format as teachers worked to maintain formal education programs for students. The current pandemic has brought unique challenges to the education sector, requiring increased readiness for emergencies as schools work to adjust to the changing landscape and repeated outbreaks, often known as the "new normal."

Educational establishments encounter the challenging endeavour of discovering substitute methods for conventional in-person learning to makeover through this intricate circumstance. This leads to campuses being closed to encourage students to practice social distancing. Moving from traditional education to online learning quickly can be difficult, leading to many obstacles and challenges. Students, especially, tend to have difficulty understanding the educational function of online technologies, frequently perceiving them as unimportant or obstacles to learning. Decrease in the percentage of students who finished their courses and assignments on time. While the complete impact of the covid-19 outbreak on education may take time to become apparent, educational institutions globally are currently working hard to improve online learning environments and resources in different academic fields, making the most of their limited resources. Numerous research studies have been conducted on virtual learning during the COVID-19 crisis.

Yet, research on the technological skills, social connections with classmates and teachers, and group learning encounters of college students during this timeframe is limited. The research discovered that online education offers new opportunities for college students to learn on their own, work together, and build relationships with classmates. It encourages individuals to reconsider ways to improve their technical skills, educational strategies, and communication capabilities, and reconsider their responsibilities as part of a team. The data suggests that online learning offers college students a new method for independent study, teamwork, and building connections with classmates. Consequently, it encourages students to reassess techniques for improving technical skills, refining learning strategies, and enhancing communication abilities.

Additionally, it is recommended that technical skills training in the future should include both faculty and students. This will improve students' practical skills and help address communication challenges caused by skill deficiencies. Past research has shown that functions like file sharing, whiteboards, and annotation can be difficult to use, which results in conference features not being fully utilized. In online learning environments, the way learning materials are shared is different from traditional in-person classes, which makes it challenging to offer immediate feedback and responses. At the same time, students face three major obstacles to successful online learning: a lack of a supportive learning environment, technical difficulties, and difficulty understanding the learning goals. Notably, the difficulties encountered in online classes can be linked to educators' lack of online teaching expertise or readiness, such as the lack of thorough teaching strategies, insufficient assistance from IT teams, and overcrowding on online learning platforms. The current situation is very different from traditional online education, resembling a crisis-driven learning method that poses significant challenges for students. Challenges such as inconsistent internet connections hinder the goal of providing fair access to online education for students.

This results in issues with participation and involvement in virtual classes, making online learning less flexible than originally thought. Moreover, students must quickly adjust to new learning techniques while dealing with the personal and societal effects of the pandemic on their everyday lives and overall health, both physical and mental. Not surprisingly, teachers' technology and teaching skills play a vital role in student engagement at this time. Study shows a direct link between students' academic performance and their skills in using technology. This emphasizes the importance of teachers' ability to effectively incorporate technology into their teaching practices to enhance student achievement. As a result, educators need to improve their teaching abilities to help students learn and communicate effectively in the future. Furthermore, it is essential to investigate online teaching methods that focus on the interests of students in order to enhance student participation. Though online learning has helped to shield students and faculty from the covid-19 pandemic, it is not as effective as traditional learning methods. Assessing the effectiveness of digital transformation in higher education institutions requires examining five key factors:

- The type of changes made
- How quickly they were implemented
- The technology utilized
- The capabilities of users and systems
- The economic impact.

Online education is means by the use of technology, internet for education task. Adedoyin and Soykan's study points out different factors that can affect the success of online education. These include technical problems, socio-economic circumstances, disruptions from people and pets, digital skills, testing and monitoring hurdles, and excessive workloads. Teachers' participation can improve students' learning effectiveness to some degree. The majority of students faced challenges with online education, especially in regions with limited access to reliable internet connections. Online education doesn't have the same in-person connection that helps students and teachers build relationships. As a result, it is important to change the way students and instructors communicate and how students participate in group work. Despite the presence of different online tools, numerous educators encounter difficulties in providing remote assistance and prompt evaluation of academic progress, which results in dissatisfaction among students. Basically, students are known as "social learners" who desire interaction with their peers and teachers. They may easily get side-tracked, which can lead to reduced focus on the content of online courses and difficulties in staying disciplined. Typically, students prefer in-person teaching and learning.

Methodology

The database utilized in this study pertains to primary data from a survey. The survey includes students at the bachelor's and master's levels in a private university located in Jalgaon District during the academic year 2023-2024. The overall count of students who filled out the survey is 200.

Factors Dominate Online Education

- **The rise of Cloud Computing**: As per technical experts, Cloud Computing is expected to become a dominant method for online education in India. Cloud computing technology allows online education providers to store a large amount of content and data on one platform. This makes it simpler for users and providers to process, retrieve, access, and manage information from any location at any time.
- **Concentrate on job skills**: With the world evolving quickly, online educational institutions are striving to align learning with the skills demanded by businesses and industries. They offer new online courses to assist students in preparing for future employment opportunities.
- **Activity-Oriented Learning**: Activity-oriented learning enables students to showcase their abilities through the development of apps, products, and more. Often, students will need ongoing feedback from their instructors and may have to try multiple times to meet the required criteria. Project-cantered learning forms the basis of the curriculum at certain online schools. Students complete multiple assignments and obtain consistent evaluations in order to obtain a degree. This type of compulsive project-based evaluations will enhance students' critical thinking skills, revolutionizing online education in India.
- **Hybrid E-learning Programs:** Combining online courses with in-person components, blended learning is becoming more popular among individuals and organizations seeking to enhance the skills of their staff. This model promotes discussions and teamwork in learning, giving flexibility to learners with higher completion rates.
- **Group Learning:** Online education in India is evolving due to growing interest in digital methods of teaching. As online learning continues to grow in the digital realm, its effectiveness in maintaining engagement among isolated, remote students and instructors will be crucial. Cooperative learning has been suggested as a potential solution. As its name implies, the methodology aims to promote teamwork and hands-on learning. As known, humans are social creatures and learn quicker through experience, the class is divided into groups. Each team will be assigned a task to accomplish with the assistance of their team members.
- **Measured Learning**: Every student we have learns at their own pace. Now, the conventional methods of teaching have been transformed into modern approaches to education. This task can be accomplished through the assistance of Artificial Intelligence machine learning. Actually, the collaborative activity is known as Adaptive Learning, in which students engage with material on mobile devices. The gadget communicates the progress of learning to the teaching staff and provides suggestions for tailoring the curriculum to enhance understanding more quickly.
- **Government Assistance for Online Learning**: The Indian Central Government has taken steps to recognize and encourage e-learning through its main public initiatives, such as Digital India and Skill India. The government is taking important actions to emphasize the importance of online learning. SWAYAM (Study-Webs of Active-Learning for Young Aspiring Minds) is a MOOC platform established by the government for students in 9th grade and higher. It offers advanced classes to ready students for specific abilities.

- **Web access in India**: The primary reasons for this expansion include the rise in smartphone utilization and the increased availability of budget-friendly smartphones. The availability of high-speed internet at an affordable price has contributed to the increase in mobile internet users. Thanks to the internet, high-quality education is now easily within reach for people living in both urban and rural areas.
- **E-learning saves money and time**: Since e-learning is conducted online, it can be accessed conveniently from anywhere at any time. The content can be accessed in the early morning, late evening, at home, in a cafeteria, or during a journey. Since the content is typically already loaded, we can download the lectures/videos to watch them whenever we choose. Furthermore, the cost of online education is significantly lower when compared to traditional face-to-face education. Additionally, significant discounts are available for hostel accommodations and transportation costs. Since all the information is accessible on the internet, there is no need to purchase physical books.
- **Convenience for working individuals**: Online education provides a great opportunity for those who are employed and cannot take time off from work to pursue further education. Online learning provides a range of courses for individuals to select from, aiding them in discovering new career opportunities.
- **Increasing visibility with employers**: Currently, numerous esteemed institutions in India provide online courses, which can be a more accessible and affordable option compared to traditional admission processes. Employers acknowledge online courses completed from reputable institutions. Employers recognize that online education necessitates self-discipline, motivation, and other valuable skills sought in a candidate. Choosing the correct course from a suitable educational institution can assist a candidate in achieving career advancement.
- **Close the divide between education and job requirements**: Online education serves as a solution to bridge the gap between the skills needed for a job and what educational institutions are providing to students. Online education presents a chance to improve skills by taking advanced courses in various fields.

Challenges in Online Education

- **Inadequate Digital Infrastructure**: Despite efforts from the Government of India to enhance digital infrastructure, more work is required to improve the current situation. Fast internet connection and reliable electricity are the primary issues.
- **Restricted Social Interaction**: Online education allows access from various locations, resulting in minimal face-to-face interaction with instructors and fellow students. Particularly in self-paced courses, there is minimal peer discussion. The majority of communication occurs via email, chat rooms, or online discussion forums. There are no campus facilities to enhance social engagement. We are unable to establish crucial social connections necessary for advancing in our careers.
- **Online Degree Credibility**: While some companies are now acknowledging online degrees, many fraudulent and non-accredited programs are still available on the internet. The quantity of fraudulent operators is increasing, offering phony certificates that lack any validity. These fraudulent activities not only damage the reputation of online certificates but also erode the trust of potential employers in online programs.
- **Motivation:** Certain students require motivation in order to attend class. For self-paced online programs, students have the option to extend their completion time if needed. The dropout rate in web-based learning is exceedingly elevated. Self-drive and self-control are necessary to finish the tasks and submit them on time.
- **Course Language**: India is a country with many languages, and most people in India live in rural areas. The majority of online courses provide content in the English language. Therefore, students who lack proficiency in English reading, speaking, and writing may find it challenging to access language materials. Therefore, computer professionals, educators, administrators, language content creators, and content disseminators should collaborate to establish a feasible framework and standard solution for learners who only understand Indian languages.

Opportunities in Online Education Advancements in technology are creating numerous opportunities for individuals involved in online education, such as entrepreneurs, education providers, and learners. Some possibilities in online education include:

- **Blended Model**: A blend of traditional classroom learning and online education is expected to become more common in the future. This idea of blended learning combines online digital media with traditional classroom techniques. Both teachers and students need to be physically present, but students have some autonomy in choosing when, where, how, or how quickly they learn. This model will utilize a mix of traditional classroom methods and online activities. In the future, virtual classrooms will enhance traditional offline teaching with digital courses focusing on practical knowledge and soft skills.
- **New Course Offerings:** Currently, the most sought-after courses in online education are cantered around Information Technology (IT). Syllabus cover topics like big data, cloud computing, and digital marketing. However, in the future, there will be an increased demand for various courses in areas like culinary management, photography, personality development, forensic science, cyber law, etc.
- **Limited Social Interaction:** Online learning may lack in-person interaction found in traditional classrooms, leading to potential feelings of isolation and a weaker sense of community.
- **Dependence on Technology and Technical Issues**: Students might face challenges such as internet connectivity issues, software glitches, or hardware malfunctions, which can disrupt the learning process.
- **Self-Motivation Challenges**: Some students may find it difficult to stay disciplined and motivated, as online learning demands a high level of personal responsibility for time management and engagement.
- **Communication Challenges**: Effective communication can be more difficult in online environments, as students may be hesitant to ask questions or seek clarification compared to face-to-face interactions.
- **Lack of Immediate Feedback**: Students may experience delays in receiving feedback on assignments or assessments, potentially slowing down the learning process and hindering timely improvement.
- **Teacher-Student Relationship**: Establishing a personal connection between students and instructors can be more challenging in online courses, potentially affecting the quality of mentorship and support.
- **Academic Integrity Issues:** The remote format of online exams and assessments can lead to worries about cheating, as some students may turn to dishonest methods.
- **Networking Challenges**: Establishing professional connections and friendships with fellow students may be harder in online learning settings than in traditional classrooms.

The surveys aim to assess students' satisfaction levels with online learning compared to traditional classroom settings. The research aims to examine the viewpoints and obstacles of online education as an emerging and innovative method of learning in higher education and professional development.

Conclusion

Online education has the potential to completely transform the future of education when implemented in collaboration with industry, universities, and government. Significant alterations to the course curriculum are necessary to close the gap and ensure students are adequately prepared for employment upon completion of their studies. The process of education must be transformed to incorporate practical applications through the integration of technology. Additionally, the course should be created in various languages to expand its audience and provide more chances for young people in rural India. Innovations are needed to develop methods for enhancing the social abilities of students in online learning environments.

Recommendations

- **Improve Technological Infrastructure**

Invest in strong technological infrastructure to tackle issues related to computers, platforms, and internet connectivity. Consistent updates and upkeep can reduce technical problems and guarantee a seamless online learning experience.

- **Enhance Interactive Communication**

Foster improved online course communication channels between students and instructors. Utilize regular virtual office hours, interactive discussions, and real-time feedback to improve engagement and reduce perceived challenges in interactive communication.

- **Enhance Interaction Between Instructors and Students**

Encourage instructors to build strong connections with students using personalized feedback, virtual discussions, and collaborative projects.

- **Increase Access to Learning Resources**

Continue expanding and diversifying online learning resources. Ensure students have access to a variety of materials such as online literature, recorded lectures, and guest lectures from different countries to support various learning styles and preferences.

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THE DEEPENING PENETRATION OF AI IN MODERN EDUCATION SYSTEM AND GENERATIVE AI

Prof. Komal P. Jain*

ABSTRACT

Simulated intelligence in schooling can customize growth opportunities, rethink showing rehearses, offer ongoing criticism, and backing teachers with cutting edge devices and bits of knowledge, prompting more compelling and drawing in instructive conditions. The reason for this study is to survey the effect of Man-made consciousness (artificial intelligence) on schooling on the basis of using AI tools. Prefaced on a story and system for evaluating simulated intelligence recognized from a primer examination, the extent of the review was restricted to the application and impacts of artificial intelligence in organization, guidance, and learning. In such manner, the motivation behind this review is to analyze what potential situations are there with the appearance of computer based intelligence in training and what sort of suggestions it can uncover for eventual fate of schools. The outcomes show that schools and educators will have new items, benefits of artificial intelligence in training. Generative Man-made consciousness (GenAI) has arisen as a promising innovation that can make unique substance, like text, pictures, and sound. The utilization of GenAI in instructive settings is turning out to be progressively well known and offers a scope of chances and difficulties. This unique issue investigates the administration and joining of GenAI in instructive settings, including the moral contemplations, best practices, and open doors the reconciliation of artificial intelligence and Generative computer based intelligence in schooling further develops the growing experience as well as supports decisive reasoning and critical thinking abilities. As simulated intelligence keeps on extending its foundations in schooling, its applications are growing broadly, making training more open and viable. We will likewise reveal some insight into what's in store possibilities of the Generative man-made intelligence.

***KEYWORDS**: Artificial Intelligence, Generative Artificial Intelligence, Educational Reforms.*

Introduction

Artificial Intelligence in Current Education

The notice of man-made reasoning infers a supercomputer, a PC with enormous handling capacities, including versatile way of behaving, like consideration of sensors, and different abilities, that empower it to have human-like comprehension and useful capacities, and to be sure, which further develop the supercomputers connection with individuals. Without a doubt, unique movies have been made to grandstand the capacities of simulated intelligence, for example, in brilliant structures, for example, the capacity to oversee air quality in a structure, temperatures, or potentially playing music relying upon the detected state of mind of the tenants of the space. Inside the training area, there has been expanded use of man-made consciousness, going well beyond the customary comprehension of simulated intelligence as a supercomputer to incorporate installed PC frameworks. Simulated intelligence

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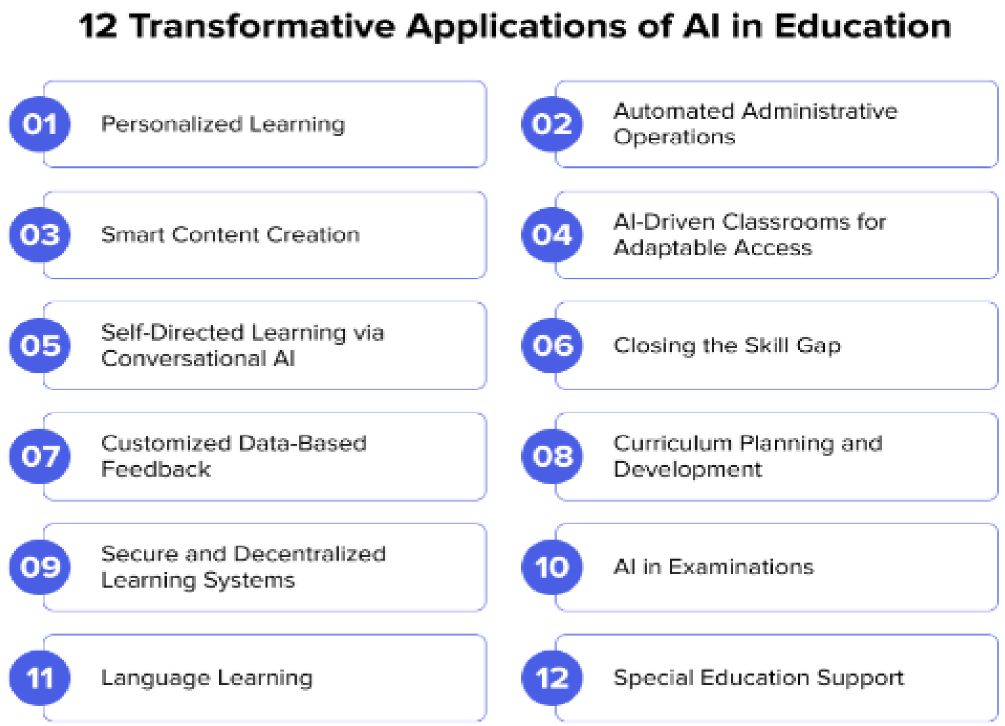
training programming improvement has reformed conventional learning strategies, from portable computerized courses to online references and virtual homerooms. This cutting edge innovation has become vital to current instructive conditions, supplanting conventional educating strategies. Computerized reasoning in training offers customized opportunities for growth, mechanizes authoritative errands, and gives constant information examination. Besides, Generative artificial intelligence in schooling advances imagination and development among understudies. By utilizing generative artificial intelligence advancements, teachers can make intuitive and dynamic substance, for example, tests, activities, and reproductions customized to every understudy's requirements, upgrading their opportunities for growth. Obviously, the mix of artificial intelligence and Generative computer based intelligence in schooling further develops the growing experience as well as supports decisive reasoning and critical thinking abilities. As computer based intelligence keeps on extending its underlying foundations in training, its applications are growing generally, making schooling more available and powerful. The pattern is clear: artificial intelligence and Generative artificial intelligence enable the two teachers and understudies to accomplish more prominent learning results. The effect of artificial intelligence in training is gigantic. Artificial intelligence fueled instruments can mechanize administrator assignments; lessen overheads, and lower schooling costs. Man-made intelligence makes it conceivable to have a homeroom where illustrations conform to every understudy's assets and shortcomings. Artificial intelligence is set to change school strategies, from educational plan advancement to understudy appraisal. It will work with versatile, customized, versatile growth opportunities, assisting training with splitting away from the one-size-fits-all model. To oblige the change, organizations are anticipated to need to put resources into innovation framework and tackle the gamble of broadening the advanced separation.How effectively we coordinate man-made consciousness into schooling systems will rely upon offsetting innovative progressions with human qualities and social value. Eventually, the objective is to utilize simulated intelligence to shape people in the future and develop for a long term benefit.

E g: - Bolton School, further training school in the UK, serves more than 10,000 students with a group of just seven individuals. For quite a while, video has been the standard configuration for making web based learning materials. Since they executed artificial intelligence for video creation, the group has had the option to make content at scale with 80% time investment funds. Bolton School's web-based libraries currently incorporate 400+ simulated intelligence recordings.



Penetration of AI in Modern Education System

Simulated intelligence in the schooling area guarantees that instructive programming is customized for each person. Also, with supporting advancements like AI, the framework backs up how the understudy sees different illustrations and adjusts to that cycle to limit the weight. This mix of computer based intelligence and training centers around each individual's prerequisites through artificial intelligence implanted games, redid programs, and different elements advancing successful learning.

- Content creation is without a doubt one of the most impressive simulated intelligence applications in training. This trend setting innovation assists instructors and analysts with making savvy content for advantageous educating and learning. The following are a couple of instances of computer based intelligence savvy content creation:
  - **Information Visualization**
  - **Digital Lesson Generation**

    For example, Appinventiv created Gurushala, an internet learning stage that teaches a great many understudies by giving free review material and other intelligent learning techniques.
  - **Frequent Content Updates**

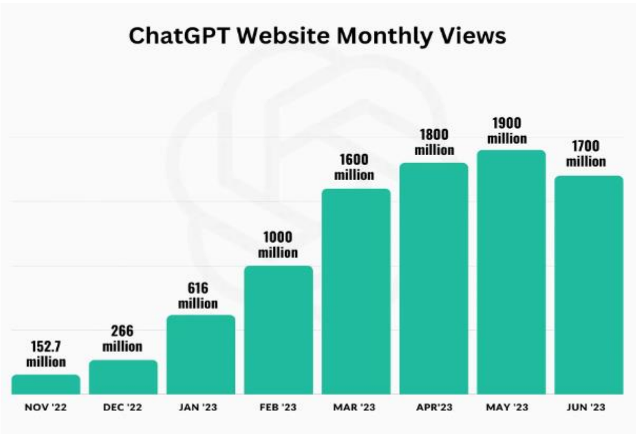
    The utilization of man-made intelligence in training permits clients to make and refresh data habitually to stay up with the latest with time. The clients likewise get told at whatever point new data is added, which sets them up for impending errands.
- Simulated intelligence in school training and virtual study halls, the innovation takes up most worth added errands. Alongside making a custom-made showing process, simulated intelligence for schooling can check schoolwork, grade tests, sort out research papers, keep up with reports, make introductions and notes, and oversee other managerial errands.
- With versatile admittance to data, educators can use the most extreme advantages of artificial intelligence in the homerooms. According to the Forbes Counselor study, over 60% of instructors overall depend on artificial intelligence driven homerooms to improve and smooth out their day to day educating liabilities.
  - Artificial intelligence driven highlights like multilingual help assist with making an interpretation of data into different dialects, making it advantageous for each local to instruct and learn.
  - Man-made intelligence likewise assumes a fundamental part in educating outwardly or hearing-disabled understudies.
  - Artificial intelligence fueled converter apparatuses like Show Interpreter give ongoing captions to virtual talks.
  - Educators habitually use computer based intelligence fueled instructive games, versatile learning stages, and mechanized evaluating and criticism frameworks in the study halls.
- Computer based intelligence helps with creating and refreshing educational programs by examining instructive patterns, understudy execution information, and learning holes. It gives continuous experiences and suggestions for educational program updates and changes, keeping instructive substance lined up with current norms.
- Conversational man-made intelligence arrangements like menial helpers and artificial intelligence talk bots for schooling assume a critical part in upgrading understudies' learning examples and encounters. Making intuitive and drawing in opportunities for growth permits understudies to understand ideas all the more effectively and hold data better. Likewise, with their day in and day out accessibility, these apparatuses expand support past customary class hours, taking care of understudies' requirements at whatever point they emerge. By offering customized direction, these innovations advance independent learning and engage understudies to communicate effectively with instructive materials. This customized approach contributes essentially to their scholastic development and accomplishments.
- An information based criticism framework upgrades understudy fulfillment, eliminates the predisposition factor from learning, and distinguishes regions for expertise improvement. This criticism is custom-made to every individual's exhibition, whether they are understudies or representatives, as kept in the framework.

- Simulated intelligence based decentralized arrangements can carry a positive specialized insurgency to the training area. For example, Nova, a block-chain-based learning the executives framework made by Appinventiv, settle the confirmation issues predominant in the training market. This LMS is controlled and upheld by artificial intelligence and block-chain innovation, which assists a great many instructors and understudies with information and data security arrangements.
- Man-made intelligence programming frameworks can be effectively utilized in assessments and meetings to assist with recognizing dubious way of behaving and alert the boss. The man-made intelligence programs track every person through web cameras, receivers, internet browsers, and so on, and play out a keystroke examination, where any development cautions the framework.
- Computer based intelligence has essentially improved language advancing by offering moment constant input on sentence structure, elocution, familiarity, and jargon. Simulated intelligence driven stages like Duolingo tailor illustrations to individual learning styles and capability levels. Also, the gamified approach of computer based intelligence driven stages reproduces genuine discussions, conveying a vivid and powerful language growth opportunity.
- Man-made intelligence driven assistive advancements, like text-to-discourse and discourse to-message applications, enable understudies with visual and hear-able debilitations or dyslexia issue to flawlessly get to instructive substance. Man-made intelligence additionally works with the making of comprehensive homerooms by giving continuous interpretation and subtitling administrations, guaranteeing that all understudies can take part completely in the growing experience. These headways not just improve the instructive experience for understudies with exceptional necessities yet additionally advance value and consideration in schooling. The uses of artificial intelligence in training can be valuable in additional ways than one can envision. To this end EdTech new businesses and undertakings are drawn to computer based intelligence innovation arrangements that effectively address the large number of clients' trouble spots. Subsequently, on the off chance that you are a piece of the training area, you should consider executing and utilizing the upsides of artificial intelligence in schooling, while possibly not yet.

Need of Generative AI

- **Provide AI Tutors and Learning Assistants**

Man-made intelligence in training isn't tied in with supplanting educators. Truth be told, computer based intelligence guides and chatbots can help educators and offer one-on-one help for understudy learning. These menial helpers make the growth opportunity more effective and engaged and the school more tomfoolery. A guide will give bit by bit critical thinking help. Schools can send one for subjects where understudies regularly battle. On the other hand, man-made intelligence chatbots answer key inquiries nonstop, lessening reaction time. For instance, Tutor.ai or Syntea are stages for customized mentoring. In any case, understudies can find solutions even from a web program by composing in inquiries for a bot like ChatGPT. This is everything that ChatGPT would agree to you when posed what sort of inquiries understudies can ask it.



Fast-track Science, Programming, and Language Learning

Some man-made reasoning arrangements available are great for making sense of complicated ideas. Science, programming, and language advancing especially benefit from utilizing artificial intelligence. That is on the grounds that these points are really scary and complex. Breaking them into reasonable examples makes the concentrate more congenial and agreeable. Labster, for example, makes virtual science labs. It helps flash interest and makes learning involved and viable, with understudies leading analyses and reenactments. Essentially, Codecademy is loaded with bit by bit programming illustrations. Furthermore, the Khan Foundation incorporates practice practices and educational recordings for all levels. Simulated intelligence driven language learning applications like Duolingo or Rosetta stone are really well known, as well, for further developing correspondence and composing abilities. They pose inquiries to evaluate the student's level and fabricate customized plans. Fun tests and sound spoken obviously by locals make concentrating on a breeze.

Teach through Educational Games and Simulations

Instructive games and recreations show the hard stuff in a manner that doesn't want to learn. This specific use of simulated intelligence implies learning can genuinely turn into a charming encounter. Modern simulated intelligence frameworks establish versatile learning conditions. At the end of the day, they tailor the review content to every understudy's learning speed and style. Also, simulated intelligence investigation shows teachers how understudies perform and their learning designs.Everything necessary is for the artificial intelligence games and reproductions to line up with the educational program. They'll' further develop understudy inspiration and information. As a matter of fact, 88% of educators who utilize computerized games in the homeroom say kids answer well overall.

- **Kahoot!, Minecraft:** Instruction Version, or SimCityEDU are a portion of the cool game learning stages. Utilizing simulated intelligence, they offer intuitive narrating and pretending games. They maneuver youngsters into certifiable situations and wrap concentrate on materials into stories.

Promote Universal Access to Education for Disabled Students

Almost 240 million kids overall have some handicap. Be that as it may, artificial intelligence can give these youngsters all inclusive admittance to schooling. Altered learning instruments that assistance with explicit necessities has the ability to change lives.Instructors can utilize man-made brainpower assistive devices to:

- Help impaired students explore and communicate with instructive assets.
- Modify learning connection points and content for different learning inabilities.
- Execute simulated intelligence text-to-discourse and discourse to-message arising innovations for understudies with visual or hearing weaknesses.For instance, Microsoft Learning Devices makes texts more available with the Vivid Peruser capability. JAWS can peruse the screen for clients with vision misfortune. What's more, those with hearing hardships can involve Otter.ai for continuous records.

Automate Grading and Provide Instant Feedback

Understudy achievement relies upon nonstop criticism, and fast reviewing facilitates any evaluation. Both are conceivable with computer based intelligence, allowing instructors to zero in additional on sharing information and less on desk work. It's a shared benefit: youthful students find support to learn quicker, and educators get to... instruct and effectively work on youngsters' abilities. Stages like Quizlet educate with cheat sheets, games, and tests that give moment criticism. Turnitin Input Studio has various criticism instruments. Gradescop was made so teachers could grade on-paper appraisals all the more without any problem. Look at them, however don't stop at these! Man-made consciousness frameworks are the companions that get understudies' slip-ups. Be that as it may, rather than yelling them out, they murmur tips to move along. They can advise every understudy how to work on in a customized, powerful way. This particular utilization of simulated intelligence in training isn't just about diminishing the educator's responsibility. This innovation is likewise assisting kids with learning quicker, feel surer, and arrive at their objectives.

Analyze Student Performance for Early Intervention

Early mediation can adjust an understudy's advancing course for sure. Computer based intelligence can take a gander at execution information and investigate different measurements. It will rapidly recognize in danger kids and tell which ones need additional help. Simultaneously, artificial intelligence has a few additional possible advantages, as it can:

- Give bits of knowledge to redo intercession techniques.
- Conjecture expected scholarly difficulties and empower proactive help.

Bright Bytes is an illustration of an information examination stage for schooling. Renaissance Star 360 additionally gives evaluations and investigation to early mediation.

Automate Administrative Tasks

Educators can have an enchanted partner robot. Not a real robot but rather a device or stage that handles all the exhausting desk work and school errands. This robotization implies instructors get back the time and mental energy to accompany their understudies and educate. Also, the schools get more intelligent by having all learning materials coordinated. Google for Schooling has a whole set-up of instruments to robotize homeroom the executives and correspondence. Furthermore, SchoolMint mechanizes enlistment, school decision, and other managerial cycles. Such man-made intelligence driven innovation assists educators with recapturing control of their time and deal with their classes better.

Generative AI in Education

Generative artificial intelligence begins with a brief that could be as a text, a picture, a video, a plan, melodic notes, or any information that the computer based intelligence framework can process. Different man-made intelligence calculations then, at that point, return new satisfied in light of the brief. Content can incorporate expositions, answers for issues, or reasonable fakes made from pictures or sound of an individual. Early renditions of generative simulated intelligence required submitting information through a Programming interface or a generally convoluted process. Designers needed to find out about exceptional devices and compose applications utilizing dialects like Python. Presently, trailblazers in generative simulated intelligence are growing better client encounters that let you depict a solicitation in plain language. After an underlying reaction, you can likewise tweak the outcomes with input about the style, tone and different components you believe the produced content should reflect.

Generative AI Tools

Generative artificial intelligence instruments exist for different modalities, like text, symbolism, music, code and voices. Some **well-known** man-made intelligence content generators to investigate incorporate the accompanying:

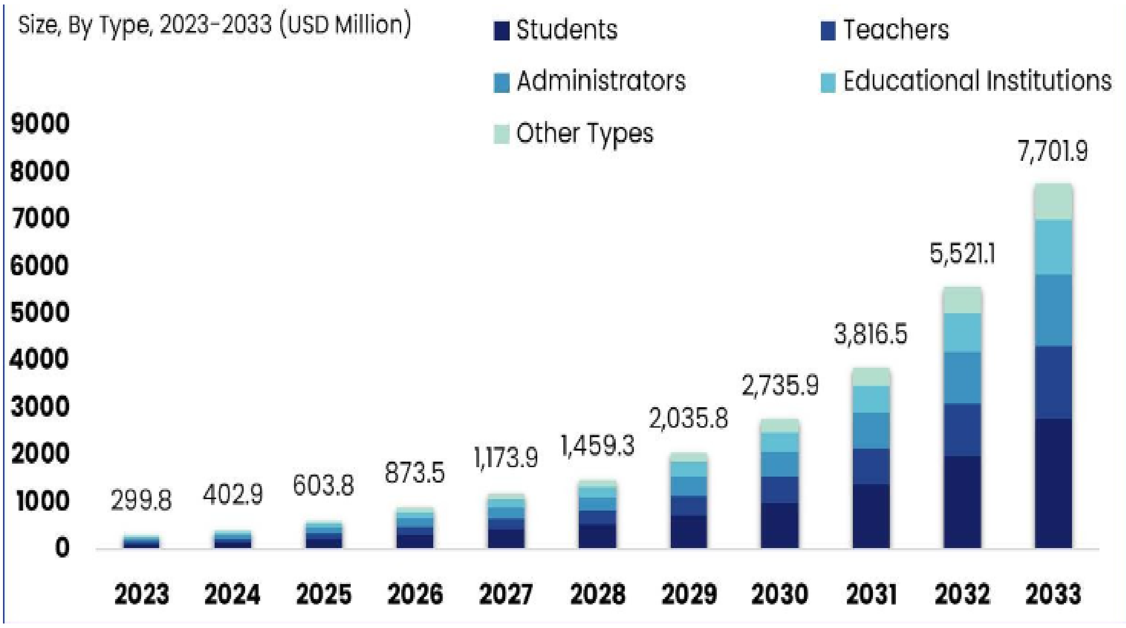
- Text age apparatuses incorporate GPT, Jasper, man-made intelligence Essayist and Lex.
- Picture age apparatuses incorporate Dall-E 2, Midjourney and Stable Dissemination.
- Music age apparatuses incorporate Amper, Dadabots and MuseNet.
- Code age apparatuses incorporate CodeStarter, Codex, GitHub Copilot and Tabnine.
- Voice combination instruments incorporate Descript, Listnr and Podcast.ai.Artificial intelligence chip configuration instrument organizations incorporate Synopsys, Rhythm, Google and Nvidia.

Future of Education with Generative AI

Schooling is constantly advancing with speed, and Gen artificial intelligence is probably going to add to molding the fate of training. We can figure generative artificial intelligence applications in training as the innovation progresses. For example, Gen-artificial intelligence could foster virtual educators that would give day in and day out help to understudies, permitting understudies to learn on their timetable and at their own speed. This would help understudies from underserved or distant regions who might not approach study hall schooling. Generative computer based intelligence could likewise be utilized to foster versatile growth opportunities that would acclimate to understudies' requirements and capacities progressively. This is conceivable by utilizing Gen-artificial intelligence frameworks to examine understudies' learning examples and afterward adjust the substance and showing instrument as needs be, which gives understudies more customized and powerful help to accomplish better learning results.

As machines advance and become cannier, instructive establishments should refine the functioning strategies that change the universe of "Artificial intelligence and you." Generative man-made intelligence actually depends on people to shape its quality and result

Generative AI in Education System



Generative artificial intelligence is intrinsically loaded up with potential contribution applications that can reform instructive practices. From making customized learning materials to empowering growth opportunities its abilities are colossal. What's the significance here for our instructors, understudies and the more extensive instructive climate? How does generative man-made intelligence squeeze into the future instruction situations and what effect will its consolidation have on customized growth opportunities? The capability of computer based intelligence in schooling stretches out past its mechanical capacities; it has the ability to make training more open, drawing in and altered to individual learning prerequisites. It presents roads, for getting the hang of, showing techniques and collaboration with instructive substance. Anyway as we investigate further into this future it is pivotal to painstakingly consider these open doors considering moral worries, information security issues and the computerized hole that accompany integrating simulated intelligence innovations into instructive conditions. The potential use instances of generative artificial intelligence in the training area are boundless, from customized figuring out how to evaluating the task. Specialists trust that using generative simulated intelligence to make imaginative devices will permit teachers to make intelligent and drawing in opportunities for growth to assist with sustaining development in their understudies. Expected utilizations of generative computer based intelligence in instructive establishments are:

- Bringing up issues and evaluations for understudies to answer in view of their ongoing comprehension and progress.
- Creating customized concentrate on educational plan custom-made to understudy's presentation, assets, and shortcomings. So people get customized opportunities for growth.
- Making intelligent and connecting with learning exercises, as in-house games and reproductions, that assists understudies with grasping complex ideas through upbeat excursions.
- Making constant appraisals and input, allows instructors to comprehend where understudies need extra help.

Generative computer based intelligence produces content like text, pictures, video, and sound for the advanced distributing area in schooling, which can help tremendous expense decrease. Moreover, generative artificial intelligence empowers bit by bit critical thinking clues and input to students for customized learning. Assuming carried out well, it can energize understudy expertise improvement; this would assist with tending to instructor related difficulties since computer based intelligence can supplant educator's regulatory undertakings to give individualized and constant input.

Conclusion

Up until this point the conversation, Generative artificial intelligence presents a groundbreaking power in training, offering customized opportunities for growth and smoothing out educational errands. In spite of its capability to change the area, challenges like man-made intelligence one-sided reaction, unwavering quality issues, and impeding decisive reasoning worries should be tended to. Looking forward, the fate of instruction with Generative artificial intelligence holds guarantee, with open doors for virtual educators, versatile growth opportunities, and ceaseless development. Organizations should cautiously explore the mix of Generative simulated intelligence, assessing use cases and refining strategies to guarantee it supplements as opposed to replaces human info, cultivating a different and imaginative learning climate.

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THE ROLE OF ELECTRIC VEHICLE ADOPTION IN MUMBAI'S PUBLIC TRANSPORTATION SYSTEMS

Aarti Ravi Vyas*
Dr. Prashant Patil**

ABSTRACT

The adoption of electric vehicles (EVs) in Mumbai's public transportation system presents a pivotal shift towards sustainable urban mobility. This transition comes in response to the city's pressing issues of air pollution, traffic congestion, and the urgent need for greener transportation solutions. EVs offer a cleaner, quieter alternative to conventional internal combustion engine vehicles, significantly reducing greenhouse gas emissions and improving air quality. Mumbai's government has initiated several policies to encourage EV adoption, including subsidies, tax incentives, and investments in charging infrastructure. These measures aim to make EVs more accessible and appealing to both operators and passengers. Additionally, integrating EVs into the public transport network can lead to operational cost savings over time, given the lower maintenance and fuel costs associated with electric motors compared to traditional engines. However, the path to widespread EV adoption is not without challenges. The initial cost of EVs remains relatively high, which can be a barrier for many public transport operators. The development of a comprehensive and reliable charging infrastructure is crucial to support the daily operations of electric buses and taxis. Without a well-established network of charging stations, range anxiety among drivers and operators could hinder the adoption process. In conclusion, the adoption of electric vehicles in Mumbai's public transportation system holds immense potential for creating a sustainable and efficient urban mobility framework. While there are challenges to overcome, the benefits of reduced emissions, lower operational costs, and improved air quality make a compelling case for the shift. By addressing the initial costs and infrastructure needs, Mumbai can set a precedent for other cities in India and beyond, leading the way towards a greener future in public transportation.

***KEYWORDS**: Electric Vehicles (EVs), Public Transportation, Sustainable Urban Mobility.*

Introduction

The global movement toward environmentally friendly and sustainable transportation solutions has accelerated in recent years. In the plethora of technological advancements intended to curtail carbon emissions and promote environmental stewardship, electric vehicles (EVs) have become an indispensable tool. The introduction of electric vehicles offers the prospect of a more environmentally friendly and economically viable future in the busy metropolis of Mumbai, where the public transit system is a lifeline for millions of people.

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With its large population and strong reliance on public transit, Mumbai offers an exceptional environment for the use of electric vehicles. The current problems facing the city, like air pollution, traffic jams, and growing fuel prices, highlight the necessity for alternate modes of transportation. Electric vehicles present a strong argument for changes to Mumbai's public transportation infrastructure because of their lower operating costs and less of an impact on the environment.

The purpose of this study is to investigate how Mumbai's public transportation system might undergo a revolution due to the use of electric vehicles. This study aims to provide a thorough understanding of how electric vehicles can contribute to a more sustainable and effective urban transit system in one of India's most dynamic cities by looking at current initiatives, user experiences, and potential barriers.

Electric vehicles (EVs) have emerged as the most cutting-edge form of sustainable urban mobility due to the global shift in transportation patterns. The use of electric vehicles in public transportation is becoming more and more necessary in heavily populated metropolises like Mumbai. With more than 20 million people depending primarily on buses, taxis, and autorickshaws, the city's transportation system is essential to day-to-day living. On the other hand, this dependence also makes a major contribution to the urban heat island effect, traffic congestion, and air pollution. An encouraging answer to these urban problems is provided by electric vehicles. EVs can lessen Mumbai's environmental impact by cutting fossil fuel consumption and greenhouse gas emissions. Furthermore, EVs offer a chance to raise energy efficiency, lessen noise pollution in cities, and improve air quality. An infrastructure of transportation that is more sustainable and resilient may be made possible by incorporating electric autorickshaws, taxis, and buses. This study explores how the use of electric vehicles is changing Mumbai's public transportation system. It seeks to ascertain the present level of EV integration, assess the advantages and difficulties, and pinpoint the actions required to promote a broad shift to electric vehicles. We hope to learn more about how electric cars can help make Mumbai's public transportation system cleaner, more effective, and prepared for the future through this study.

Objective of the Research

- To explore the impact of electric vehicle adoption on improving Mumbai's public transportation system and urban sustainability.
- To discuss government initiatives, challenges, and prospects for transitioning Mumbai’s public transport to electric vehicles.

Literature Review

In cities like Mumbai, where traffic and pollution are major issues, the switch to electric vehicles (EVs) for public transit is an essential development. This review of the literature summarizes the most recent findings and theoretical frameworks surrounding the adoption of electric vehicles (EVs) in Mumbai's public transportation systems, emphasizing important subjects like infrastructure development, government initiatives, adoption barriers, and environmental effects.

Government Initiatives and Policies

The goal of the Maharashtra Electric Vehicle Policy, 2021 is to promote sustainable mobility solutions in order to change the state's transportation ecosystem. By 2025, the policy intends for major urban agglomerations, including Mumbai, to have 25% of their public transportation systems electrified. The statement highlights the significance of battery electric vehicles (BEVs) and establishes goals for the development of charging infrastructure. Specifically, 1,500 public charging stations are planned for Greater Mumbai alone. By the same date, the policy also intends to convert 15% of the fleet of buses operated by the Maharashtra State Road Transport Corporation (MSRTC) to electric vehicles. The Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) program has been instrumental in advancing EVs throughout India in accordance with national objectives. Significant financial support is provided for electric buses under FAME II, which incentivizes states to implement greener public transportation technologies24. These initiatives are further supported by the National Electric Mobility Mission Plan (NEMMP), which offers a framework for EV adoption and manufacturing at the federal level.

Infrastructure Development

Infrastructure for charging EVs is a vital component that affects their adoption success. Research suggests that in order to support electric buses and other public transportation vehicles, a robust network of charging stations is necessary. As demonstrated in other nations like Singapore, where adoption rates remained low despite fiscal incentives due to a lack of supporting facilities, inadequate infrastructure can impede the transition to electric vehicles. In order to combat this, the Maharashtra policy establishes targets for charging stations and encourages the development of low-emission areas that are mainly accessible to zero-emission cars.

Environmental Impact

Making the switch to electric public transportation has major environmental benefits. Research indicates that electrifying bus fleets can significantly lower urban air pollution, which is especially bad in places like Mumbai, which is home to some of the dirtiest places on Earth5. The incorporation of electric vehicles (EVs) into public transportation is consistent with larger goals to lower carbon emissions and enhance the general quality of urban air. In order to meet the Indian government's targets of achieving net-zero emissions by 2070 and a 45% reduction in carbon intensity by 2030, it is imperative that EVs be widely adopted.

Literature Review

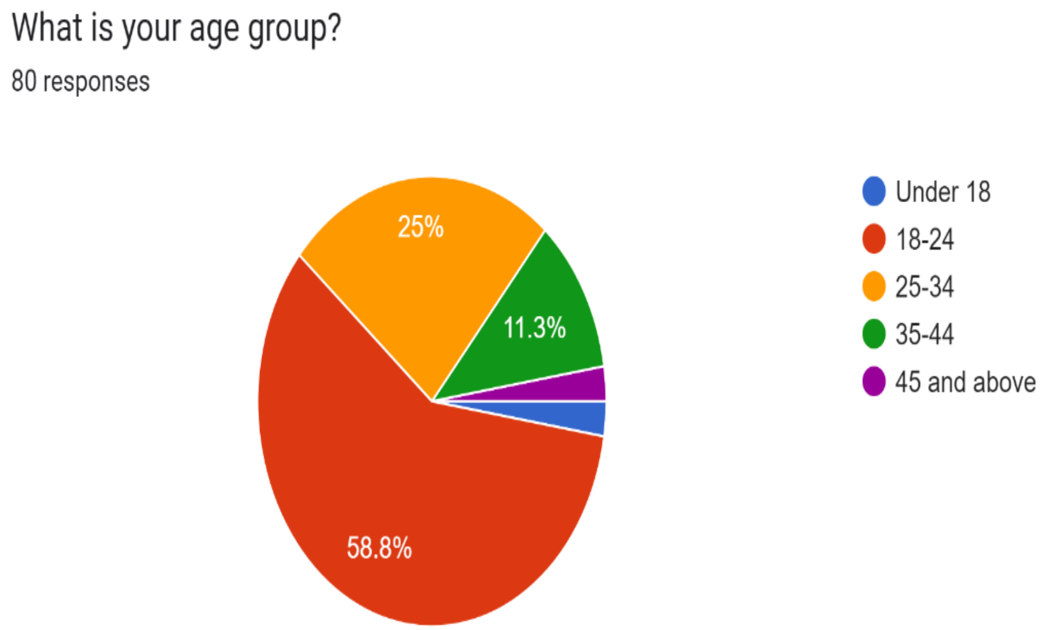
(Thakre, 2020) In the study titled " Exploring the factors influencing electric vehicle adoption: an empirical investigation in the emerging economy context of India" has explored he adoption of electric vehicles (EVs) in India, emphasizing the importance of charging infrastructure and consumer preferences. It identifies challenges such as inadequate collaboration among stakeholders and the chaotic state of charging facilities, which hinder EV adoption. Utilizing the push–pull–mooring (PPM) framework, the research highlights the need for strategic partnerships to enhance the EV ecosystem. Future research could explore the long-term impacts of improved charging infrastructure on consumer behavior and the effectiveness of various business models in promoting EV adoption. Additionally, investigating the role of government policies in shaping the EV market could provide valuable insights for stakeholders.

(Vedant Singh, 2021) In the Study Titled " Analysis of electric vehicle trends, development and policies in India". The study reviews the current status and future trends of electric mobility in India, highlighting the country's significant automobile industry and the need for increased EV adoption due to environmental concerns. A SWOC analysis identifies strengths like government incentives, weaknesses in policy comprehensiveness, opportunities for market growth, and challenges from conventional vehicles. It emphasizes the importance of collaboration among stakeholders for research and development. The study offers policy recommendations to enhance EV adoption, including financial incentives and infrastructure development. Overall, it aims to guide policymakers in fostering a sustainable EV ecosystem in India.

(at, 2021)In the Study titled" A Comprehensive Review on Developments in Electric Vehicle Charging Station Infrastructure and Present Scenario of India." The study reviews the advancements and challenges in electric vehicle (EV) charging infrastructure in India, highlighting the government's efforts through public-private partnerships and incentives to promote EV adoption. It emphasizes the importance of optimal charging scheduling techniques and the use of metaheuristic methods for efficient resource utilisation. The research identifies the need for strategic planning and innovation to address existing challenges in the EV ecosystem. Additionally, it underscores the role of energy storage systems in enhancing charging infrastructure reliability. Overall, the study provides valuable insights for future developments in India's EV landscape**.**

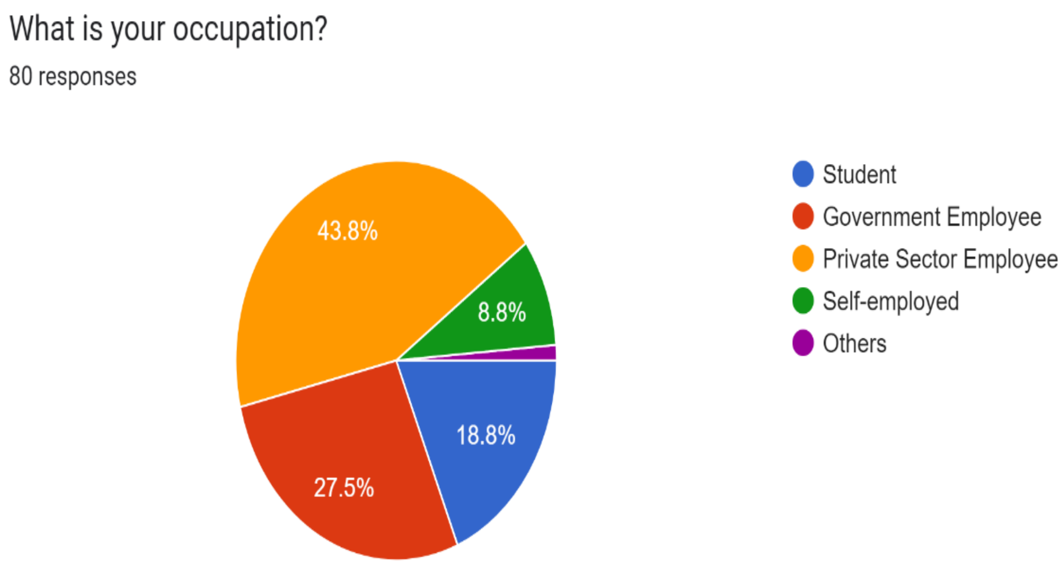
(Ishant Sharma1, 2020) In the Study "Will electric vehicles (EVs) be less polluting than conventional automobiles under Indian city conditions? evaluates the environmental impact of electric vehicles (EVs) compared to conventional internal combustion engine vehicles (ICEVs) in Indian urban settings, highlighting the significant role of the electricity generation mix in determining emissions. The study finds that while EVs can reduce certain pollutants, their effectiveness is contingent on the decarbonization of the energy grid and improvements in transportation infrastructure. Future scope includes exploring the long-term effects of evolving vehicle technologies, assessing the impact of renewable energy integration, and conducting region-specific studies to better understand local conditions and emissions profiles. Additionally, further research could focus on policy frameworks that facilitate the transition to cleaner transportation options.

Data Analysis and Interpretation



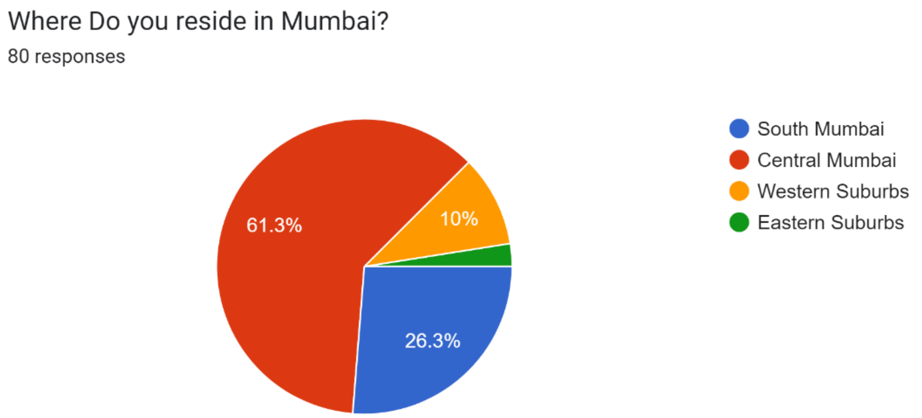
Interpretation

The above pie chart represents the respondent age group, which lies between 18 and 45, out of which the majority of the participants are from the 18- to 24-year-old age group.



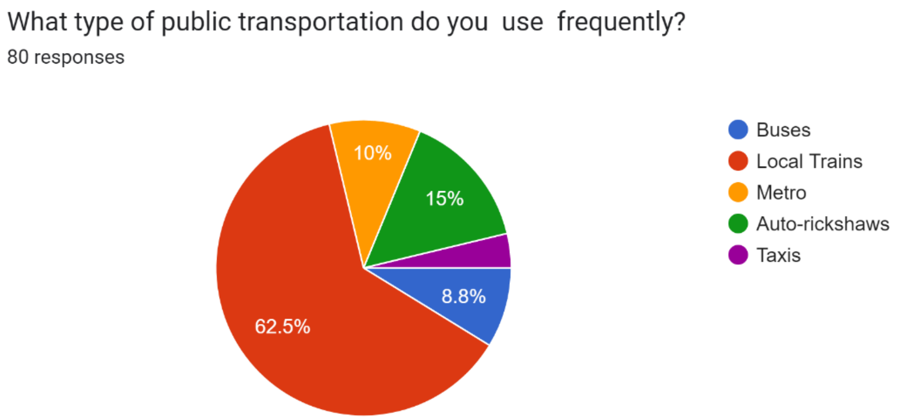
Interpretation

The above chart represents the occupation status of the respondent in which most of the respondent belongs to the Private Sector Employee group followed then by Government employee.



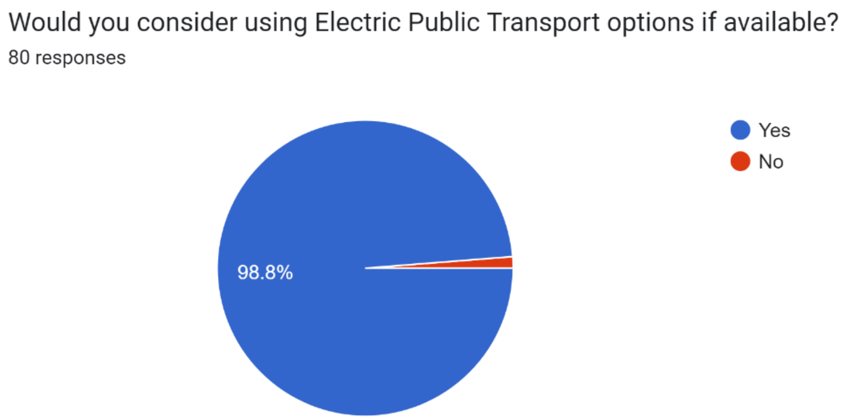
Interpretation

The above diagram represents the residence areas of the respondents in Mumbai out of which most of the respondents reside in the Central Part of the city.



Interpretation

From the above pie chart, it can be seen that the majority of the respondents are travelling by the Local Trains.

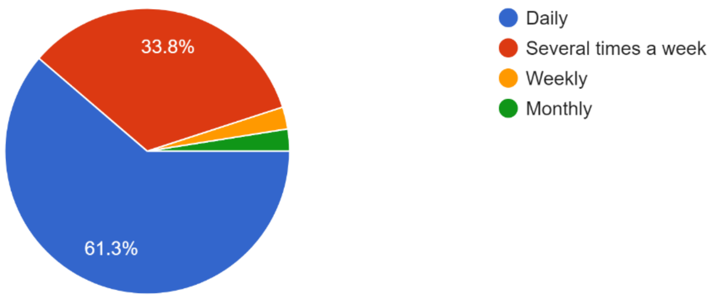


Interpretation

From the above pie chart it can be seen that the majority of the respondents are ready to use Electric Public Transport while travelling.

How often do you use public transportation?

80 responses

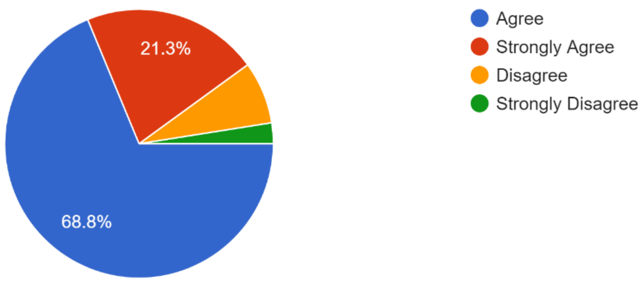


Interpretation

From the above pie chart it can be seen that majority of the respondence use public transportation on daily basis.

Do you think that the Environmental Benefits and issues are being maintain by adoption of EVs in public transportation?

80 responses

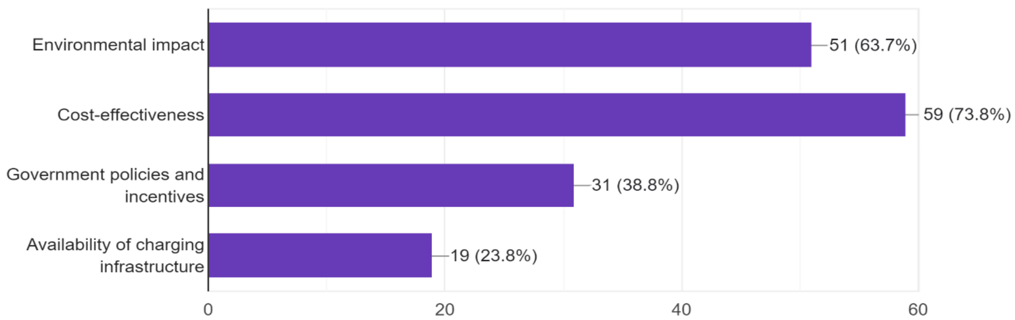


Interpretation

From the above pie chart, it can be seen that the majority of the respondents agree that environmental benefits and issues can be maintained by the adoption of EVs in public transportation.

What factors influence your perception of EVs in public transportation? (Select all that apply)

80 responses

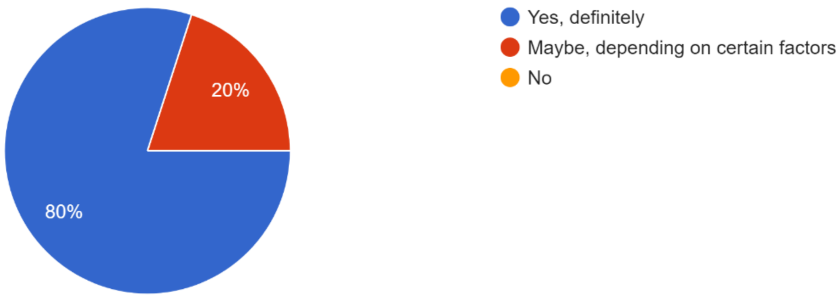


Interpretation

From the above chart, it can be interpreted that from the available options, cost-effectiveness is the most impacted factor which influences the perception of the EVs in public transportation.

Would you consider using electric public transport options if available?

80 responses

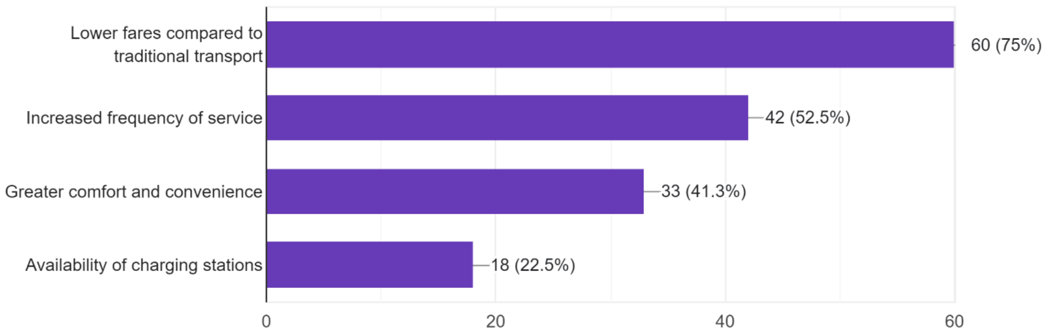


Interpretation

It can be interpreted that the majority of the respondents would consider using electric public transport options if available while commuting

What factors would encourage you to use electric public transport? (Select all that apply)

80 responses

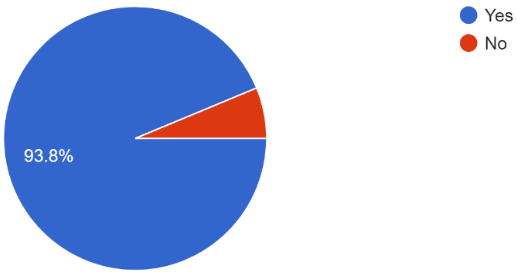


Interpretation

From the above chart, it can be that represented majority of the respondents are encouraged to use electric public transport by Lower fares compared to traditional transport.

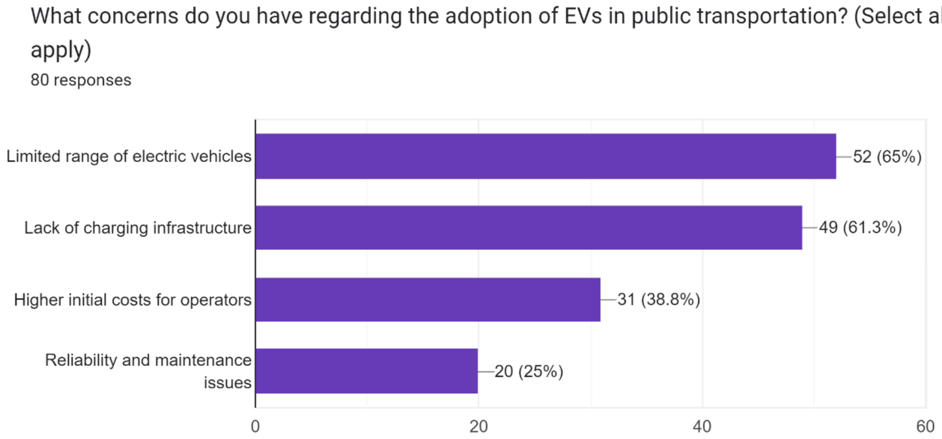
What do you think that Government steps s effective towards promoting Electric Vehicles in Public Transportation?

80 responses



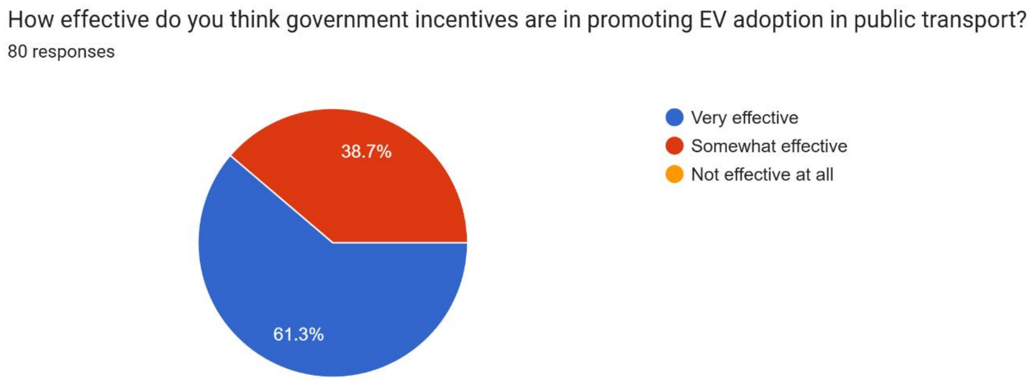
Interpretation

From the above pie chart, it can be interpreted that the majority of the respondents agree that Government steps are effective towards promoting Electric Vehicles in Public Transportation.



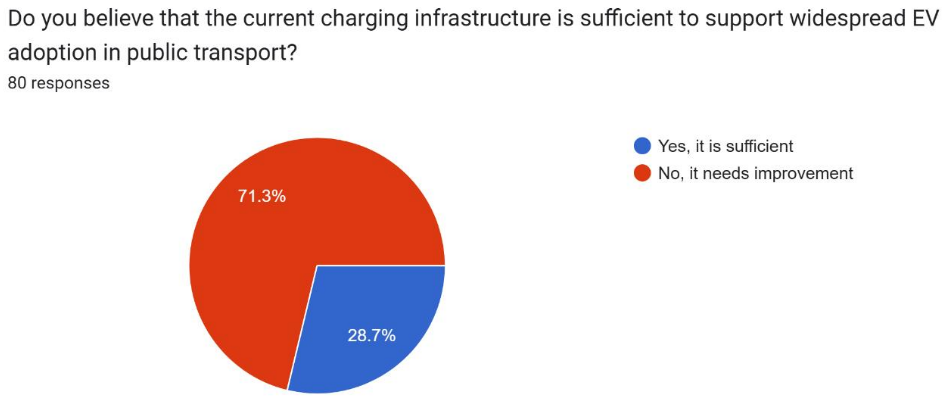
Interpretation

From the above, it can be seen that most of the concerns regarding the adoption of EVs in public transportation is Limited range of EV and Lack of Charging Infrastructure.



Interpretation

From the above diagram, it can be interpreted that Government incentives are promoting EV adoption in public transportation.



Interpretation

From the above diagram, it can be interpreted that charging infrastructure requires improvement.

Observation

From the research, it can be observed that the majority of the respondents can use Electric vehicles on daily commutes in public transport with proper infrastructure facilities and cost-effectiveness. The observation is based on the responses collected by a circulating structured questionnaire.

Limitation

The Study is Limited to the number of respondents and the geographical area which is restricted to Mumbai further scope can cover more information on the development of the Government initiatives on the EV commute and mode of transportation.

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TRANSFORMING INDIA'S BANKING LANDSCAPE: A CRITICAL REVIEW OF SECTOR REFORMS

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Dr. Parag Arun Narkhede**

ABSTRACT

The banking sector is the backbone of the Indian economy & has seen many changes since the 1990s. All the reforms paved the way for rules to strengthen its operations. The need for banking reforms was felt in the past to address fiscal, double-digit imbalances, and payment crises and arrest a remarkably slow growth in agriculture and industrial arenas. The purpose of this paper is to pinpoint challenges in banking reforms as a gap in the existing body of knowledge. The scope of this critical review will highlight the progress made in the banking sector, especially in mergers of small banks to form a consolidated, competitive banking entity, adopting new technologies like mobile banking applications, UPI payment methods, Aadhar e-KYC compulsions, and the effectiveness of implementing 4R framework using AI in banking process benefiting the common man. The study concludes by indicating the advantages of banking reforms introduced in the banking sector, especially in specific domains like improvements in fiscal deficit, budget management, public debts, and benefits of the availability of modern banking facilities to vulnerable segments of the Indian population residing in urban, and rural areas.

***KEYWORDS**: Banking, Banking Reforms, Fiscal Imbalance, Fiscal Deficit, Payment Crises.*

Introduction

In India, banking transactions date back to the mid-18th century, and the Bank of Hindustan was first established in 1770 and liquidated in 1829-1832. Bank of India was formed in 1786 but failed to survive until 1791. It was again incorporated on 5th March 1907 and resumed its business on 15th August 1907 as The Indian Bank Ltd. On 16th March 1949, the Banking Companies Act was passed and it came into existence on 1st March 1949 as the Banking Regulation Act. Since its inception, there have been four types of Banks in India: The Central Bank, The Commercial Bank, The Cooperative Banks, and The Regional Rural Banks. On 1st April 1935, The Reserve Bank of India was established in Kolkata which moved its office to Mumbai in 1937. The RBI regulates the Indian Banking system and is fully owned by the Ministry of Finance, The Government of India.

Research Objective

This study aims to explore the benefits of all the banking reforms enacted from 1990 onwards.

Significance of the Study

This study provides insights into the reforms of the banking sector which contributed to the growth and stability of India's Banking sector since its inception. The study supports the development of

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effective monetary policy befitting enhancement of customer satisfaction. This study will value add and significantly contribute to the existing literature on banking reforms.

Literature Review

In this literature review, past developments in the subject area are reviewed.

Table 1: List of Papers by Different Authors Reviewed in Chronological Order

Paper No.	Year of Publication	Author Names	Title of the Paper
1	2005	Mor & et.al	Banking Sector Reforms in India
2	2006	Ataullah & et.al	Economic reforms and bank efficiency in developing countries: the case of the Indian banking industry
3	2011	Uppal	Banking Sector Reforms: Policy Implications and Fresh Outlook
4	2012	Mohammed	Critical Analysis of Banking Sector Reforms in India with Special Emphasis on Technological Advancement
5	2013	Bhattacharya	Financial reforms and technical efficiency in Indian commercial banking: A generalized stochastic frontier analysis
6	2017	Chadha	An Analytical Study of Reforms and Their Impact on the Indian Banking Sector
7	2018	Bhaumik & et.al	How successful are banking sector reforms in emerging market economies? Evidence from the impact of monetary policy on levels and structures of firm debt in India
8	2019	Pati	Reforms in Indian Banking Sector - Review, Challenges and Government Efforts
9	2020	Shaik & et.al	Banking Sector Reforms in India
10	2020	Dagar et.al	Effect Of Reforms on Banking Sector In The Context Of India

(Mor & et.al, 2005) has written an elaborate paper titled **Banking Sector Reforms in India**. The authors presented this paper jointly at an India policy conference organized by Stanford University's Center for International Development on June 1–3, 2005. They assess the role Indian banks play in supporting those reforms that cause the growth of the Indian market. The paper has many graphs to explain the various banking phenomena. This study was never published in any journal and during that time digital initiatives like mobile banking applications and Aadhar e-KYC facilities were not introduced by the Indian Government. The strength of the paper lies in its extensive and chronological collection of datelines regarding Banking Reforms till 2005.

(Ataullah & et.al, 2006) reports findings on a statistical comparative study titled **Economic Reforms and Bank Efficiency in Developing Countries: The Case of the Indian Banking Industry**. They attempt to establish a relationship between **E**conomic **R**eforms **(ERs)** and Bank Efficiency in a developing country like India. The ERs have three sub-parameters: fiscal reforms, financial reforms, and private investment liberalization. The Bank Efficiency parameter is measured using the non-parametric **D**ata **E**nvelopment **A**nalysis **(DEA)** for measuring the efficiency of banks in India between the period 1992-1998. The findings of their study indicate that banking efficiency drastically improved during this period. Public sector banks, domestic private banks, and foreign banks showed remarkable improvements after the ERs were rolled out. They noticed a positive relationship between the level of competition among banks and their efficiency of functioning. The banks in India need development in digital workflow, growth in infrastructure, and strong banking law implementation by the RBI. The strength of the study lies in its implementation of statistical tools on the primary data not seen in other studies. The study limits itself to a specific six-year time span period only.

(Uppal, 2011) presents a paper titled **Banking Sector Reforms: Policy Implications and Fresh Outlook** in which the researcher points out that foreign banks show better performance in terms of productivity, profitability, and NPAs despite the Indian Government has attempted implementation of new Banking Reforms. The basic reasons, flaws, and inadequacies are been highlighted in this paper. The paper lists all the issues prevailing in the Indian Banking sector post-reforms. It uses the Ratio Method analysis to calculate the profitability and productivity of employees of five major bank groups: viz; Nationalised Banks (19), SBI& its Associates (8), Old Private Sector Banks (21), New Private Sector

Banks (8), and Foreign Banks (31). They think the public sector banks must do more in the rural areas which are still devoid of technological innovations.

(Mohammed, 2012) shows the effects of technological advancements on the Indian Banking industry post-rolling out of Banking Reforms in his study titled **Critical Analysis of Banking Sector Reforms in India with Special Emphasis on Technological Advancement**. He indicates the perceptions of the customers and their willing acceptance to successfully use technological advancements post-reforms. A methodology of floating questionnaires to the respondents of private and public sector banks was adopted. The response was 38% of the 400 questionnaires was the primary data. Private banks included were HDFC Bank, ICICI Bank, UTI Bank, and IDBI Bank. Public banks included were The Bank of India, UCO Bank, The Punjab National Bank, and The State of India from the urban areas of Lucknow, UP, India. Pie charts show comparative findings. He found that due to technological advancements clerical errors were nullified, the speed of transactions drastically improved, and core banking solutions features of the banks revolutionized the banking experience of the customers. The banking reforms introduced e-banking, net banking, and mobile banking facilities. Limitations are considering a small sample size of just 152 respondents. The generalization of the study results was difficult, and very few dependent and independent variables to assess their hypothesis using just one statistical test viz; Kolmogorov-Smirnov D test at 10% level of significance. The future scope of this study may include more statistical parametric and non-parametric tests on a bigger sample size as per Cochran’s formula.

(Bhattacharyya & et.al, 2013) conducts a study titled **Financial Reforms and Technical Efficiency in Indian Commercial Banking: A Generalized Stochastic Frontier Analysis** to estimate the technical efficiency of Indian banks in a specific period between 1989 and 2009. The results show that the banks were operating with an average of 64% efficiency. They considered the secondary data for this study from the **C**entre for **M**onitoring the **I**ndian **E**conomy **(CIME)**. The gap was filled by using the **S**tochastic **F**rontier **F**ramework **(SFF)** to estimate technical efficiency from 1989-2009. No study has made use of **SFF** to articulate its findings which happens to be a unique strength of this study. The findings are shown using different graphs and tables They noticed a slow action in rolling out banking reforms by the Indian Govt. They rank all other banks in India on the technical efficiency scores as indicated in appendix D of their study. The study limitations include the use of secondary data, and the inability to capture other crucial factors of the banking industry due to data constraints. Future research studies may eliminate these limitations by considering a more elaborate setup of data analysis.

(Chadha, 2017) her study titled **An Analytical Study of Reforms and Their Impact on the Indian Banking Sector** identifies the unique changes in the banking system, especially after being subjected to the new Banking Reforms by the Government of India. She includes in her study the Evolution of banking activities in India, a list of Nationalized Banks in India, Major Banking Reforms that took place in India, actions taken by the RBI during the formative years of these reforms rolled out in the Indian market, and Technological Developments in the Banking Sector. It is a purely theoretical paper depicting the datelines of events in the reform revolution in India. Her paper lacks facts and figures, logical reasoning, and methodological considerations on the said topic. All these limitations certainly can be considered as future research topics. The strength of the paper includes all the events sequentially related to the occurrence and implementation of all the Banking Reforms in India.

(Bhaumik & et.al, 2018) presents a detailed paper titled **How successful are banking sector reforms in emerging market economies? Evidence from the impact of monetary policy on levels and structures of firm debt in India** which tests the outcomes of changes in monetary policy and its impact on unaffiliated private firms, state-owned firms, and foreign firms. They consider Huang's (2003) argument as a basis for this study which statistically proves that by using the regression model of equations it is possible to estimate the impact of changes in monetary policy on bank debt, and debt structure of various firms. They use the **G**eneralised **M**ethod of **M**oments **(GMM)** approach of Arellano and Bover (1995) and Blundell and Bond (1998) to empirically show that unaffiliated private firms are most affected due to changes in monetary policy. Using the Unit Root Test method, the authors conclude that private firms are the ones that are most affected by the changes in monetary policy. The study limitations include the conduct of empirical analysis, and the measures necessary in upcoming Banking Reforms for preventing the Bankruptcy of banking institutions similar to foreign banks. The study's strengths include using the powerful Unit Root test method, GMM approach, and regression analysis.

(Pati, 2019) produces a paper titled **Reforms in Indian Banking Sector - Review, Challenges and Government Efforts** in which he indicates the priorities India needs to set for stabilizing her economy, the historical background of the Indian Banking Reforms saga, and the flaws and improvements required in the Banking Laws Amendment Bill 2011. The paper's strength indicates all the necessary amendments required in the present banking reforms, recapitalization plans for the banks, and the fiscal efforts to prevent an economic slowdown in the country. Limitations include using a theoretical collection of facts and no survey methodology adopted. This paper does hold the future scope of study on the same topic by incorporating analysis of data using the survey method.

(Shaik & et.al, 2020) has written a paper titled **Banking Sector Reforms in India** which focuses on the impact of all the banking sector reforms. The paper highlights the basic structure of the banking industry in India, the history of banking activities in India, and the actual reasons for initiating reforms. The author highlights various committees and their recommendations which resulted in the banking reforms in India and have immensely benefitted the common man in remote areas of the country, especially after 1991. It identifies gray areas in these reforms and tries to suggest some constructive remedial measures. This study also brings out the main focus of reforms in the areas like NPAs, Capital Adequacy, and Diversification of Operations. The author highlights challenges in the banking reforms like Cyber Threats, Bank scams, Requirements of Reserve Ratio, and increasing competition with the lack of infrastructure. The study lacks considering primary data to support its theory. The limitations of this study are the future scope for other studies.

(Dagar & et.al, 2020) compose a study titled **Effect of Reforms on the Banking Sector in The Context of India** which brings out the fact that just imposing reforms in the banking sector by the Govt of India is not sufficient to notice changes in bankruptcy and low economic growth in the country. The author opines that the RBI must consider stringent anti-bankruptcy laws, have corporate governance measures in place, and focus on the digital literacy of the common masses. The study indicates that monetary policy changes do not cause changes in bank lending. Holistic development of the Indian banking sector is only possible when loopholes in the present banking reforms can be uprooted. The study has a limitation of only considering theoretical reporting on the topic. The study displays its strength by accurately noting the lacunas in the banking reforms. The future scope of this study may include considering more details of banking reforms.

Relevance of Reviewed Literature

The present study intends to bridge the gap in knowledge and point out what is required to make the Indian economy more stable. The Mor paper describes the impact of banking reforms during the year 2000 when the computerization of the Indian Banks was not in the form that it is today and neither digital facilities like e-banking, e-KYC, mobile, or internet banking took up the pace. In the paper by Chadha, et.al., we learn about new banks formation, how these new banks were trying to adjust to new bank reforms of that period, and the problems faced by these banks in retaining customers in changing scenarios. The paper by Mabunni, et.al., describes the benefits and changes that occurred in the Indian Banking sector from 1991 onwards due to the Central government's efforts to revamp the entire banking system of India. Her paper reviews critically most of the bank reforms of that period, yet it fails to indicate the effects of those reforms on the customer. Similarly, papers by other authors also narrate that all banking reforms were declared by the Govt of India.

Banking Reforms: The Journey So Far

- **The Pre-Reform Era (1949-1991)**

The Pre-reform era laid the actual foundations for the banking sector reforms initiated in 1991 onwards in the Indian economy by the Indian Govt. The structure of banks was different from the present-day setup of the banks in India. The **P**ublic **S**ector **B**anks **(PSBs)** dominated the Indian economy, and Private Sector Banks were too low in number. It had a monopolistic market structure, with limited competition. The banking sector got 14 major commercial nationalized banks, the RBI was established, the SBI was created, and there was an introduction of the Banking Regulation Act by the Govt of India. This period was yet to see a proper implementation and a boom of Banking Reforms that gave a boost to the Indian economy in the true sense.

- **The Post-reform Era (1991-2014)**

The post-reform era saw several remarkable improvements and changes in the banking history of India. The entry of foreign banks into the Indian market took place, and ATMs were introduced in the banking arena. This was the beginning of computerization and core banking solutions made available to the customers. Narasimham Committee Report (1991), Khanna Committee Report (1995), Vasudevan Committee Report (2001), and R. Gandhi Committee Report (2010) dominated the Indian Banking sector. The NSE and BSE were established, the CIBIL was introduced, Basel I and II norms were implemented, and the RTGS and NEFT started. Competition among banks increased, the efficiency and productivity of the bank improved, and services were made available to the common public. Challenges like NPAs, and competition from non-banking financial companies (NBFCs) also grew and the Global Financial Crisis (2008) dominated the Indian Banking sector.

- **Recent Reforms (2014-Present)**

After the setbacks of earlier eras of the banking service industry, the Govt of India launched an ambitious Indradhanush plan to revamp public sector banks, to focus on capital infusion, asset quality improvement issues of the banks and strict implementation of the reforms via RBI guidelines. The Banking Regulations (Amendment) Act, 2017 strengthened the RBI's regulatory powers, enabling the RBI to improve the banking sector's stability. The introduction of GST further simplified taxation issues. Digital payments, mobile banking, and other online banking services enhanced customer convenience, ease of transactions, faster banking solutions, and overall satisfaction. Programs like Jan Dhan Yojana, Aadhar-enabled payments, biometric identifications of the customers, and AI-powered banking features made life easy for the customers.

Critical Analysis of Banking Reforms

- **Structural Reforms**

Since the 1990s, structural reforms in India’s banking sector were initiated by the Indian govt. These reforms played a crucial role in shaping India’s banking setup into what we see today.

  - **Privatization of Public Sector Banks (PSBs)**

When ownership of a business is transferred from govt to the private sector it is called privatization in which govt does not remain the owner of that business or entity. By doing privatization, Govt intends to bring in fresh capital, improve the bank management system, and try to increase the competitiveness and the govt and private banks. This way, the overall efficiency of the bank's functioning and customer satisfaction was increased. It is also called as Consolidation of PSBs in which smaller, weak banks were combined with larger and stronger banks to create a robust banking entity. Advantages include providing better customer service by PSB and assisting in the growth of the economy, whereas the disadvantages include potential conflict of interest of employees within the private bank, high employee turnover, and the emergence of monopolies or oligopolies in the private banking sector. The privatization of banks came with all the challenges that are still prevalent in today’s banking sector.

  - **Merger of Public Sector Banks (PSBs)**

The govt of India decided to go ahead with mergers of public sector banks to increase their capital base, and to improve their lending capabilities. The govt infused additional capital through budget allocations or special packages to enhance their money-lending capacities to the customers and thus supported the economic growth of the country. The govt also met the regulatory capital requirement Basel III norms and strengthened the creditworthiness of these PSBs. This ultimately offered these PSBs better risk management and increased their competitiveness abilities, and they automatically came in the ambit of complying with the essential statutory and regulatory RBI requirements. This improved the overall performance of all these PSBs and increased their lending capabilities to the agriculture sector and MSMEs. Landmark initiatives of the Indian Govt under the head of these banking reforms, especially after 2015 onwards were:

- **Indradhanush Plan (2015):** Rupees 70,000 crores capital was infused by the govt of India (**Source: Indradhanush: Plan for Revamp of Public Sector Banks, dt 14 Aug 2015)**. This improved the market valuations of the PSBs significantly, tightened the NPA management, and improved the capital productivity of these banks instantaneously.
- **Banking Recapitalization Plan (2017):** Rupees 2.11 lakh crore capital infused by the govt of India **(Source: Press Information Bureau, Govt of India, Ministry of Finance, dt 24.01.2018)**. The agenda for these reforms by the govt was **“Responsive and Responsible PSBs”**. This recapitalization agenda of the govt successfully fulfilled its commitments of

providing banking services within five km of every village, a refund within ten days of any unauthorized debit in electronic transactions, and a mobile ATM in every under-served district rural area.

- **EASE (Enhanced Access and Service Excellence) Reforms (2018):** Launched in January 2018**,** consisted of thirty action points **(Source: Press Information Bureau, Govt of India, Ministry of Finance, dt 27.12.2023)**. This reform process led to an increase in digital transactions, improved banking governance procedures significantly, entirely transformed the HR policies of these banks, and improved the profitability and asset qualities of PSBs. In FY 2024, **EASE 6.0** has conceptualized 22 action points with 4 themes focusing on more digital innovations in the banking sector, improving the Capital Adequacy Ratio (CAR), reducing NPAs, and increasing investors' confidence in PSBs.

  - **Governance Reforms in Banks**

In the year 2016, the govt of India constituted a Bank Board Bureau (BBB) as an autonomous recommendatory body which contributed to reducing the Cash Reserve Ratio (CRR), and extreme technological innovations in the banking sector using AI-based applications made available to its customers. It brought a boom in the banking industry and simplicity of transactions to even customers in the remotest part of the country. It helped the PSBs to develop their strategic plans, identify and nurture talent within PSBs, and help mergers and consolidation of all the PSBs. BBB transformed PSB's performance and started more stable and professionalized banking services among all PSBs.

  - **Technological Upgradation of Banks**

The govt of India's initiatives like the **Society for Worldwide Interbank Financial Telecommunication (SWIFT)** and **e-Kuber** brought ultimate technological innovations in the banking sector, especially after 2016. SWIFT provided a flawless network all over to all financial institutions to send and receive information about financial transactions in a standardized, secure, and reliable environment. Its headquarters is situated in Belgium. Similarly, e-Kuber was introduced in the year 2012 as the Core Banking Solution (CBS) by the RBI providing 24x7 multiple customer-centric services from a single location. Using CBS, customers can access their accounts on the internet from anywhere and from any branch.

- **Impact of Banking Reforms**

  The salient features in a nutshell of this impact are as follows:

  - **Impact on the Banking Sector**

  - **Institutional Strengthening:** All the banking reforms especially from early 2000 started strengthening the institutional framework with measures like provisioning of licenses for new private banks, and allowing public banks to increase their capital base.
  - **Improvements in debt recovery:** The establishment of new debt recovery tribunals greatly facilitated the recovery of outstanding debts, thus reducing the burden on banks of non-performing assets (NPAs).
  - **Increase in transparent functioning:** Due to reforms, all banks started disclosing their financial transaction information according to international accounting standards.
  - **Upgrade in bank financial health:** All the banking reforms made public and private sector banks more shockproof to world economic turmoil and reduced their vulnerability to bankruptcy.
  - **Triggered overall economic growth:** Banking reforms finally led to sound economic growth in the country thus drastically improving credit availability and reducing interest rates.
  - **Increased financial inclusion:** It caused more and more customers to access banks including those in the rural areas of the country.
  - **Improved Competitiveness:** The reforms enabled Indian banks to compete with international banks with more stability and financial capabilities than ever before.

  - **Impact on the Indian Economy**

- **Fall in inflation rates:** Since the production of goods and services was triggered in the Indian economy, and competition in the market increased drastically due to the rolling-in of banking reforms hence inflation could be kept under check to some extent.
- **Liquidity in the hands of the common man:** Due to bank reforms, money started rolling in the Indian markets as a result the common man started having money in his hand to buy homes, and cars, start business ventures, and fulfill personal desires almost instantaneously in form of easy and quick availability of loans from both public and private sector banks at a nominal rate of interests.
- **Boom in the economy:** Due to banking reforms, money started flowing in the Indian markets which resulted in accelerated growth in all sectors of the Indian economy.
- **Reduction in the intermediation costs:** The costs arising due to banks acting as intermediaries for connecting the borrowers and the depositors were reduced due to the start of banking reforms in the Indian banking sector.
- **Decline in NPLs:** As a result of banking reforms effective in the banking sector, there was a sharp decline in Non-Performing Loans (NPLs) which were not generating any income for the banks due to borrower's failure to repay.
- **Increase PPE:** Banking reforms caused an increase in Profit per Employee (PPE). It is nothing but overall growth in profitability generated per employee, resulting from various reforms and initiatives.
- **Ensuring Solvency and Resilience:** Banks could place themselves in a position to meet long-term financial obligations, maintain a low debt-to-equity ratio, and secure a strong capital position in the Indian market, thanks to banking reforms of the Indian govt and RBI guidelines.

Challenges and Concerns in the Indian Banking Reforms

- **Regulatory Challenges**
  - **Fragmented Regulatory Framework:** As of date, more than one regulator has overlapping jurisdictions in the banking sector. RBI, SEBI, and IRDAI have their regulations but they intersect with each other in many aspects.
  - **Complexity in Regulatory Compliance:** Frequent changes in regulations & guidelines, Know Your Customer (KYC) norms, and data privacy & protection regulations add to the complexities in the banking reforms which need immediate attention and resolution.
  - **Governance and Risk Management:** Problems like weak corporate governance, inadequate risk assessment, lack of transparency, and insufficient auditing increase the gravity of challenges in the banking reforms for which a more holistic outlook to eradicate them for smooth functioning at all levels.
  - **Financial inclusion and digitization:** Issues like balancing financial inclusion with risk management, digital payment security, and cybersecurity to prevent banking frauds remain unresolved challenges in the banking reforms which hinder further process.
  - **International Cooperation and Standards implementation:** Non-implementation of Basel standards in full spirits, including FATF & OECD guidelines, cross-border regulations, and unable to maintain a smooth regulatory consistency in adhering to banking reform agendas is also an unsolved challenge.
  - **Consumer Protection:** Unresolved problems like consumer data protection, ensuring fair lending practices, swift consumer complaint resolution, and financial literacy are still prevalent challenges awaiting to be addressed as challenges in the banking reforms.
- **Operational Challenges**
  - **Human Resource and Talent Management:** These challenges include talent acquisition & retention, the skill gap in digital banking, and employee training & development still pose a big challenge in the upliftment of banking reform in India.

- **Technology and Digitization:** Cybersecurity threats, data analytics & management, a requirement for a robust digital payment infrastructure, and adopting cloud computing technology remain distant challenges in the existing setup of the banking reform in India.
- **Branch Rationalization and Consolidation:** Unattended challenges like optimizing branch networks, consolidating unprofitable branches, enhancing branch productivity, improving customer services, and reducing operational costs in both private and public sector banks awaited to be resolved in the progress path of banking reforms in India.

Scope and Limitations

The scope of this study is to analyze banking reforms from 1991 onwards till the present year and to highlight the effects of privatizations, private sector banking consolidation, and mergers or acquisitions that caused economic boosts in the Indian markets. This study pinpoints the revolutionary steps in banking like the commencement of UPI payments, Aadhar e-KYC, and mobile applications for internet banking by the Government of India. However, the study also limits itself to the geographical limits of Indian territory excluding the international banking reforms, reliance on secondary data and existing literature, and subjective interpretation of data and reforms.

Conclusion

This paper concludes on following sub-headings by throwing more light on the implications of banking reforms to India, the effectiveness of the 4R framework of the RBI, and the overall progress made and changes seen by the Indian banking sector since the commencement of implementing reforms by the govt of India.

Summary of Key Findings

The aims of implementing banking reforms in India were to reduce the gross NPA ratio, improve credit growth, enhance financial stability, increase investor confidence, and support the overall holistic economic growth of the country, especially after securing Independence from British rule in 1949. To some extent, the govt of India and the RBI achieved success and today’s generation is enjoying modern banking facilities. The currently running ambitious project of the RBI, for example, the 4R framework includes Recognizing and identifying stressed assets, Resolution of prolonged banking issues like Insolvency &Bankruptcy (IBC), Strategic Debt Restructuring (SDR), Asset Reconstruction Companies (ARCs), Recapitalization by infusing capital into Public Sector Banks (PSBs), and implementing Reforms to improve governance & management of the banks has greatly impacted the banks functioning even the rural areas of India. As a result of the ongoing efforts of the government of India and the RBI, the banking sector has drastically changed and is not the same as it was in the 1940s, 1990s, and even in the year 2000.

Recommendations for Future Research

In future studies on this topic, the researchers must focus on comparative analyses and interdisciplinary approaches by incorporating more insights from economics, finance, management, and technology to come up with solutions to challenges in banking reforms. Such efforts will further streamline and weed out grey issues in banking reforms. A more contemporary approach should be adopted to find reasons for different problems prevailing in the present structure of banking reforms.

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FINTECH AND DIGITAL LENDING: A NEW ERA OF DECISION-MAKING IN THE DIGITAL ECONOMY

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Dr. Rupinder Katoch**

ABSTRACT

The rapid growth of financial technology (Fintech) has reshaped the global financial landscape, introducing innovative solutions that enhance efficiency, accessibility, and financial inclusion. Digital lending, a key component of Fintech, leverages technologies such as artificial intelligence (AI), machine learning, big data, and blockchain to streamline credit processes, enabling faster loan approvals and real-time credit assessments. This paper investigates the transformative role of digital lending, focusing on its potential to democratize credit access while optimizing decision-making in financial services. Using a mixed-methods approach, the study combines data from global financial databases and case studies of leading digital lending platforms. The methodology emphasizes comparative analysis across developed and emerging markets to explore how digital lending enhances operational efficiency and expands credit to underserved populations. The findings reveal that digital lending improves credit accessibility and reduces operational costs, but it also poses challenges related to regulatory compliance, cybersecurity, and data privacy. Peer-to-peer (P2P) lending further disrupts traditional models by directly connecting borrowers and lenders, raising issues around platform governance and risk management. The study concludes that while Fintech and digital lending hold immense potential for fostering financial inclusion and innovation, a balanced approach to regulation is critical. Robust governance frameworks and proactive regulatory policies are necessary to mitigate risks and ensure sustainable growth. The research underscores the need for continued innovation and policy development to fully harness Fintech's transformative power in the digital economy.

KEYWORDS: *Digital Economy, Fintech, Financial Sector, Digital Lending, New Era.*

Introduction

The rapid evolution of financial technology (Fintech) has fundamentally reshaped the global financial landscape, introducing innovative services and business models that were previously inconceivable. At the heart of this transformation lies digital lending, a technology-driven process that leverages data, algorithms, and automation to deliver financial services with greater speed, efficiency, and accessibility. Digital lending democratizes credit access by bypassing traditional financial intermediaries, offering streamlined processes that benefit both borrowers and lenders (Yue et al., 2022).

Digital lending plays a crucial role in enhancing financial inclusion, particularly in underserved populations across both developed and emerging markets. By employing advanced technologies such as machine learning, big data analytics, and artificial intelligence (AI), digital lending platforms provide real-time assessments of creditworthiness and facilitate rapid loan disbursements. This technological shift is revolutionizing decision-making paradigms within financial services, enabling data-driven and efficient credit processes (Prabhakaran & Mynavathi, 2023). Despite its advantages, digital lending is not without challenges. Concerns about over-indebtedness and the potential for consumers to fall into debt traps

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highlight the need for a balanced approach to innovation and regulation. Security and regulatory compliance also pose significant challenges, as cyber threats and systemic risks underscore the importance of robust cybersecurity measures to protect financial operations (Dudin & Shkodinsky, 2022). The results open the door for specific initiatives to tackle the complex aspects of financial literacy development, leading to better-informed and empowered financial decision-making by individuals (Singh, P., & Katoch, R., 2024). Additionally, peer-to-peer (P2P) lending, a prominent subset of digital lending, demonstrates Fintech's disruptive potential by connecting borrowers and lenders directly. While this reduces transaction costs and eliminates the need for traditional banking models, it also raises concerns regarding trust, regulatory oversight, and platform governance (Zhdanova et al., 2019).

This research paper aims to explore the transformative role of Fintech in digital lending. It examines the benefits, risks, and regulatory considerations associated with this new era of decision-making in the digital economy. By analyzing key enablers, challenges, and the broader impact of digital lending, the study seeks to provide a comprehensive understanding of how Fintech innovations are reshaping financial services and decision-making processes.

Definition of Financial Technology (Fintech)

Financial Technology, or fintech, refers to the integration of technology into the delivery and use of financial services. It encompasses a broad range of innovations aimed at improving and automating traditional financial activities such as lending, payment processing, investment, banking, and personal finance management. Fintech leverages technologies such as big data, artificial intelligence (AI), blockchain, and machine learning (ML) to provide more efficient, secure, and accessible financial solutions to businesses and consumers alike.

Fintech's primary goal is to optimize and modernize financial operations, making financial services more user-friendly, faster, and less expensive. It also plays a pivotal role in financial inclusion by providing services to underserved markets, such as the unbanked population, through digital platforms and alternative credit assessment tools. Over time, fintech has expanded into sectors like insurance (Insur-Tech), investment (Robo-Advisors), and even cryptocurrencies, transforming the financial industry and the global economy.

Recent studies (e.g., Olaoye et al., 2024; Prabhakaran & Mynavathi, 2023) suggest that fintech has not only increased financial access but also improved credit decision-making and financial literacy through innovative digital lending practices, driving economic growth, especially in emerging markets.

Fintech enterprises are emerging with the aim of enhancing the financial services provided by conventional financial establishments. In order to draw a clear distinction between market participants that can be researched and compared, we further define the word fintech in this research in order to analyze the distinctions between incumbent financial institutions and fintech businesses. In addition, the report makes a distinction between financial institutions according to how innovatively they have developed more user-centered services. Traditional banks are among the established financial institutions that have rarely received force to review and modify their business strategies. As a result, they have a very small online presence.

Definition of Digital Lending

Fintech lending, a critical subset of financial technology (Fintech), refers to the use of advanced technologies to streamline and enhance the lending process (BIS, 2018; FSB, 2019). This concept can be delineated along two primary dimensions: the nature of customer-lender interactions and the technological tools employed for borrower screening and monitoring.

Customer-Lender Interaction

Digital lending platforms typically facilitate fully online or app-based interactions between borrowers and lenders, bypassing the need for in-person meetings or manual paperwork (Buchak et al., 2018; Fuster et al., 2019). This approach significantly reduces processing times, operational costs, and human errors, while simultaneously enhancing the user experience. Moreover, digital lending platforms offer greater flexibility for lenders to respond to demand fluctuations. Borrowers who value convenience over personalized, face-to-face consultations are particularly drawn to such platforms.

Screening and Monitoring Technology

Fintech lenders employ advanced technologies to refine traditional borrower assessment and monitoring methods. These innovations may involve the use of alternative data sources, such as digital footprints, to expand the informational base for credit assessments (Berg et al., 2020). Additionally, machine learning algorithms are applied to extract richer insights from available datasets, enhancing the accuracy of default predictions, improving recovery rates, and optimizing loan pricing and terms (Fuster et al., 2021). These capabilities help broaden credit access, particularly for individuals and small businesses underserved by traditional financial institutions.

Although traditional banks have adopted similar technologies, such as online loan processing and the use of alternative data for credit assessments, they are generally not classified as fintech lenders. To distinguish fintech lenders from traditional financial institutions, researchers often apply specific criteria. Fintech lenders are typically characterized as entities operating outside the conventional banking system or those that do not accept customer deposits (Cornelli et al., 2020; Ziegler et al., 2021).

It is important to recognize that the definition of fintech lending is not fixed and may vary depending on the context. As traditional banks continue to integrate technological advancements into their operations, the distinctions between fintech firms and conventional financial institutions have become less clear. Current definitions often rely on a combination of customer interaction features, technological innovation in credit processes, and regulatory frameworks. These nuances underscore the evolving nature of fintech and its transformative impact on the financial services industry.

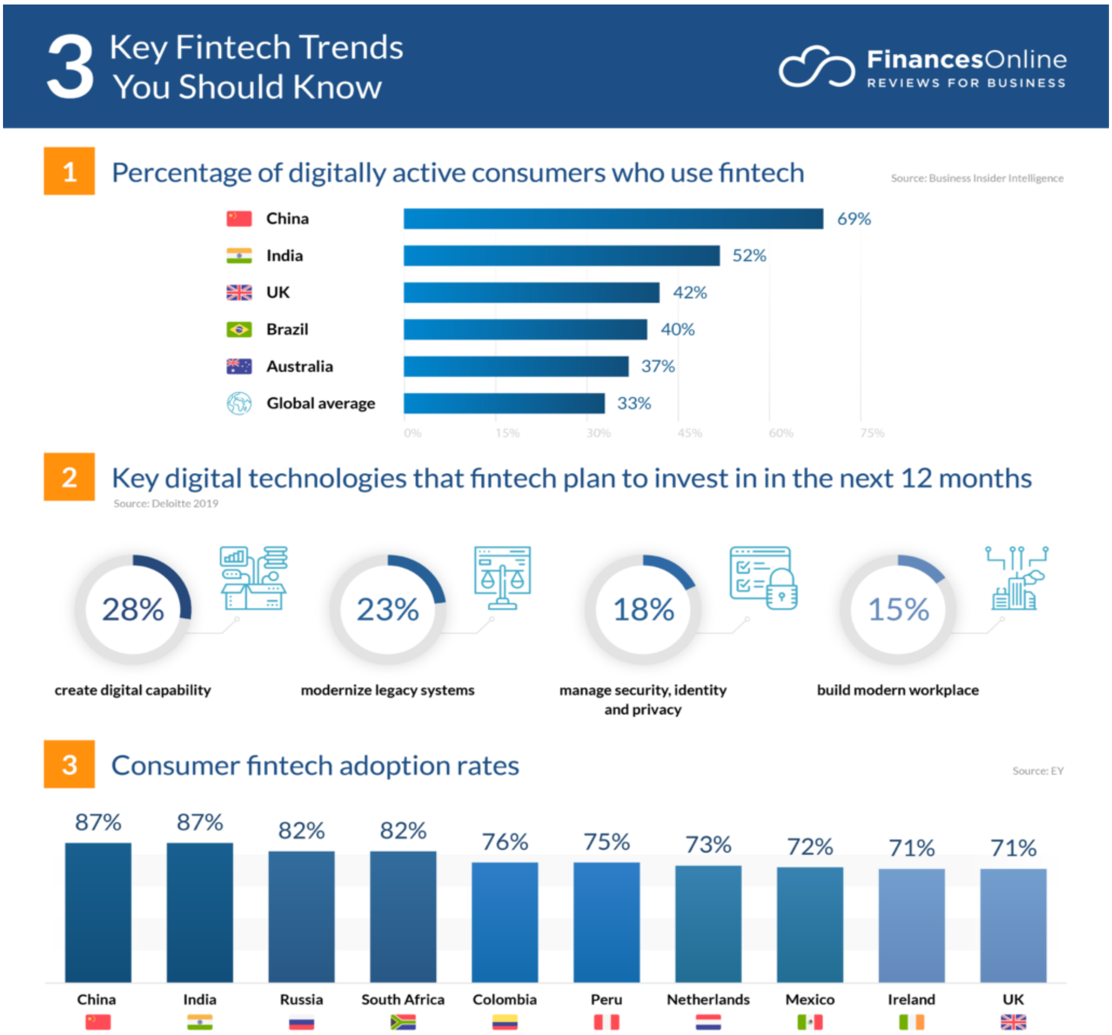

Figure 1: Fintech Trends

Source: Review for business; Finance online

Figure 1, highlights key global fintech trends that align with the paper titled "Fintech and Digital Lending: A New Era of Decision-Making in the Digital Economy." It shows the growing adoption of fintech services, with China (69%) and India (52%) leading in digitally active consumers. It also outlines fintech's planned investments in key digital technologies, such as creating digital capabilities (28%) and modernizing legacy systems (23%), which are essential for improving digital lending and decision-making processes. The high fintech adoption rates in countries like China and India (87%) demonstrate the shift toward digital financial systems, reinforcing the study's focus on fintech's role in transforming credit decisions and enhancing financial inclusion. Sources like Business Insider Intelligence, Deloitte, and EY lend credibility to these insights

Methodology

This study employs a mixed-methods approach, integrating both qualitative and quantitative analyses to comprehensively examine fintech lending trends and their impact on the digital economy. The methodology is structured into three key components: data collection, comparative analysis, and regression analysis.

Data Collection

Data for this study are sourced from multiple reliable and comprehensive databases and reports:

- **Global Alternative Finance Database**: Provides detailed data on fintech credit volumes across various regions, capturing the growth trajectory and market penetration of digital lending platforms.
- **Industry Reports and Academic Literature**: Sources include reports from institutions like the Cambridge Centre for Alternative Finance (CCAF), National Bureau of Economic Research (NBER), and major financial publications. These provide contextual insights into fintech developments and regulatory responses.
- **Regulatory Publications**: Documents from central banks, financial regulators, and policy think tanks offer perspectives on regulatory frameworks and their influence on fintech lending adoption.

These data sources ensure a robust foundation for understanding fintech lending trends, innovations, and regulatory challenges globally.

Comparative Analysis

The study conducts a cross-regional comparative analysis to identify factors influencing the adoption and growth of fintech lending:

- **Regional Trend Examination**: Fintech lending trends are analyzed across developed and emerging markets to identify key drivers, such as technological infrastructure, regulatory environments, and consumer behavior.
- **Cross-Country Analysis**: This analysis explores variations in fintech adoption rates and impacts, examining how regional disparities in economic development, regulatory frameworks, and market maturity influence fintech growth.
- **Case Studies of Major Fintech Lenders**: In-depth case studies of prominent digital lending platforms, such as peer-to-peer (P2P) and marketplace lending models, illustrate practical applications of fintech innovations. These case studies highlight the platforms’ contributions to financial inclusion, operational efficiency, and risk management.

Regression Analysis

To quantify the relationship between fintech credit volumes and macroeconomic variables, the study employs panel regression techniques.

- **Macroeconomic Indicators**: The analysis includes GDP per capita, banking sector competitiveness, and financial inclusion indices as independent variables to understand their influence on fintech credit volumes.
- **Regulatory Frameworks**: The study evaluates how variations in regulatory environments affect fintech adoption and performance. Metrics such as ease of doing business, regulatory stringency, and digital infrastructure readiness are incorporated.

- **Outcome Variables**: Fintech credit volumes are analyzed as the primary dependent variable to measure the scale and impact of digital lending within different macroeconomic and regulatory contexts.

Results and Discussion

- **Market Dynamics and Growth**

The global fintech lending market has grown exponentially over the past decade. The Indian lending industry was valued at INR 174 trillion in FY22, or over $2 trillion, according to a report by Praxis Global Alliance. Out of the forementioned, the size of the digital lending industry is forecast to be $270 billion, and by FY2026, it is predicted to increase at 22% CAGR to reach ~592 billion. This indicates a large window of opportunity for innovation and value-adding shows in figure 2.

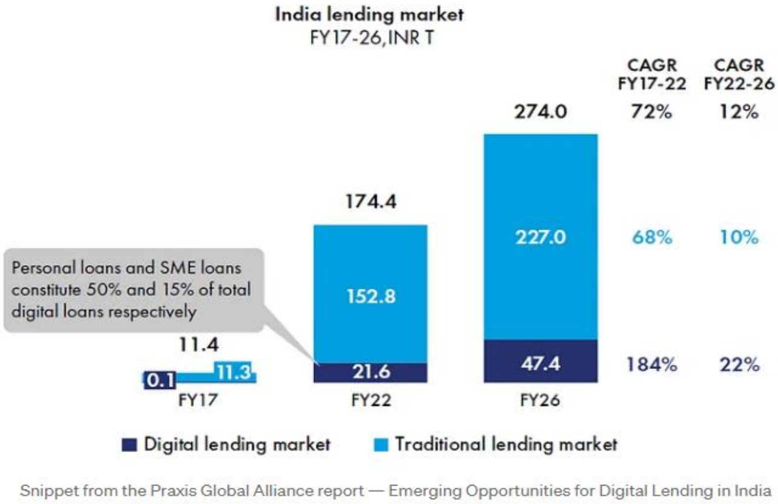

Figure 2: India Leading the Market

Source: Experian; Fintech led digital lending; Coming of age

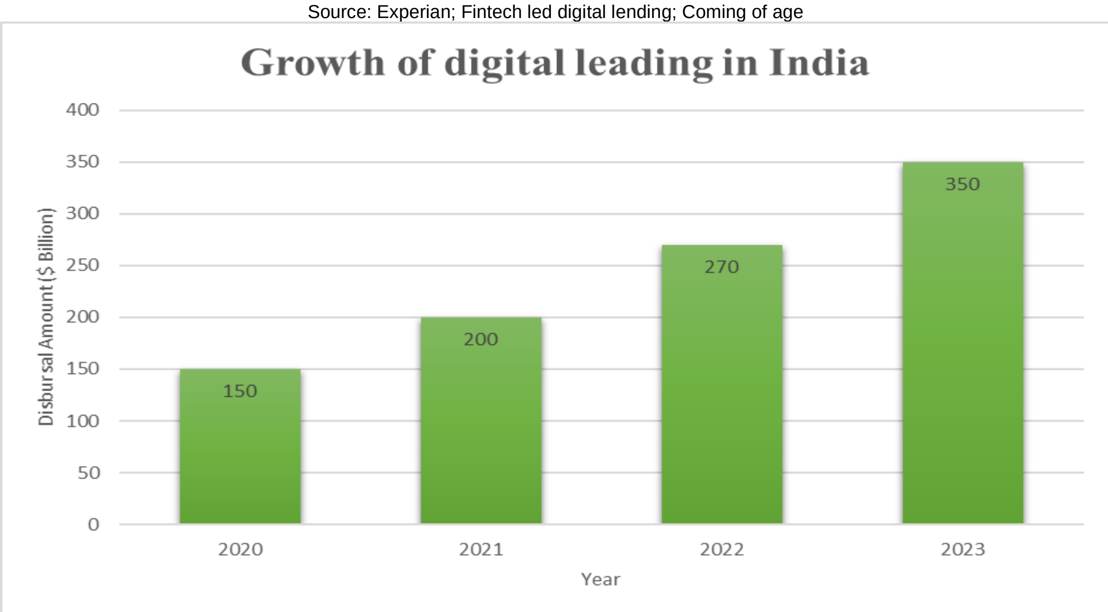

Figure 3: Growth of Digital Leading in India

Source: Experian: Fintech Led Digital Larding; Coming of Age

In figure 3, highlights the rapid expansion of the Indian digital lending market, which has dispensed nearly $350 billion to date, with 36% of borrowers being first-time credit users. This growth has been significantly accelerated by regulatory initiatives, particularly the implementation of electronic Know Your Customer (e-KYC) processes, which have resulted in an 85% reduction in onboarding costs. Furthermore, the study emphasizes the automation of loan documentation, the real-time disbursement of funds via digital banking platforms, and the facilitation of collections through e-mandates. Advanced algorithms now handle the majority of underwriting processes, demonstrating the efficiency and speed improvements in digital lending. This streamlined approach underscores the rapid development of fintech-led solutions, transforming the lending landscape and enhancing access to credit for a wider audience.

Lending FinTech’s and Market Valuation in India

Financial inclusion has been improved by the emergence of fintech companies, which have revolutionized the way financial services are consumed by utilizing alternative data and technology. Second only to digital payments, the lending fintech space has drawn significant investor interest, especially in the retail and MSME segments. Investors continue to support this industry despite a recent decline in overall financing, highlighting the potential for fintech’s to scale and expand. Investor attention will eventually turn to the profitability of fintech companies and their efficient management of non-performing assets (NPAs), as well as the founders' compliance with the tightening lending regulations.

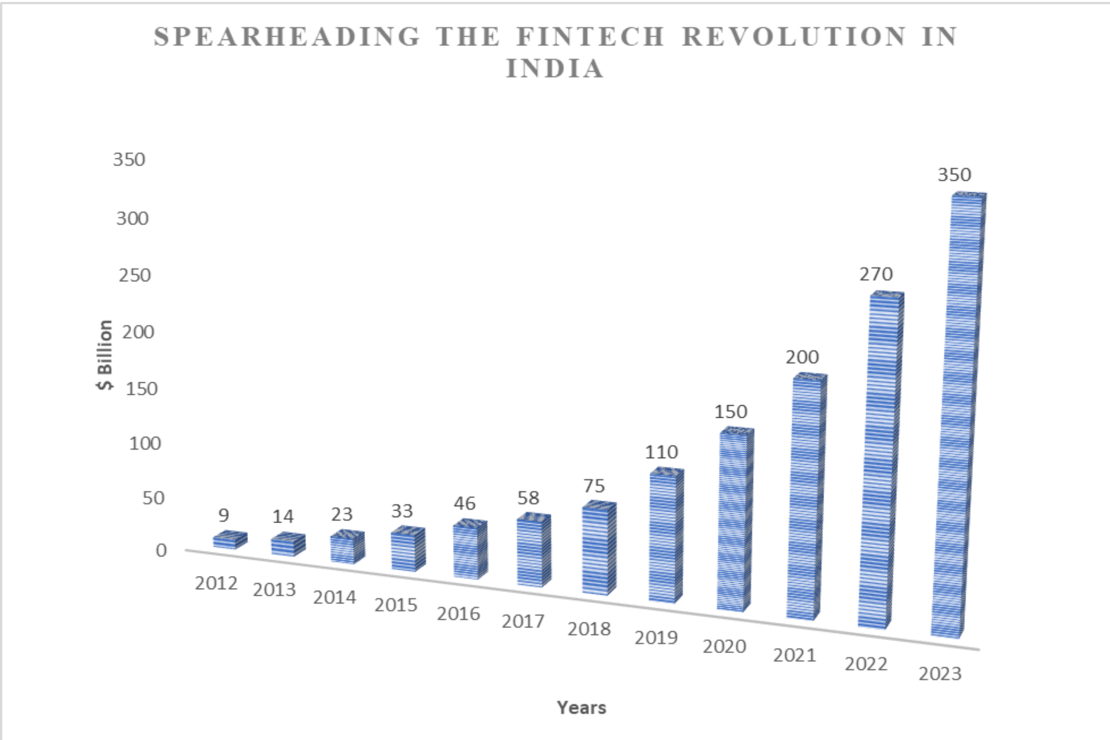

Figure 4: Spearheading the Fintech Revolutions in India

Source: CIBIL, BCO Google Digital Leading Survey, 2018, BCO Analysis

Figure 4, highlights the remarkable growth of fintech-led lending from 2012 to 2023, showcasing an exponential increase from $9 billion in 2012 to $350 billion in 2023. This rapid expansion, particularly after 2019, reflects the transformative role of fintech in revolutionizing the lending landscape in India. The sharp rise can be attributed to advancements in technology and government initiatives aimed at promoting digital finance, such as UPI and India Stack. This data explores how fintech innovations have streamlined credit assessment processes and expanded access to credit. The graph underscores the pivotal role of fintech in driving financial inclusion and highlights its potential t reshape the future of lending and economic growth in India.

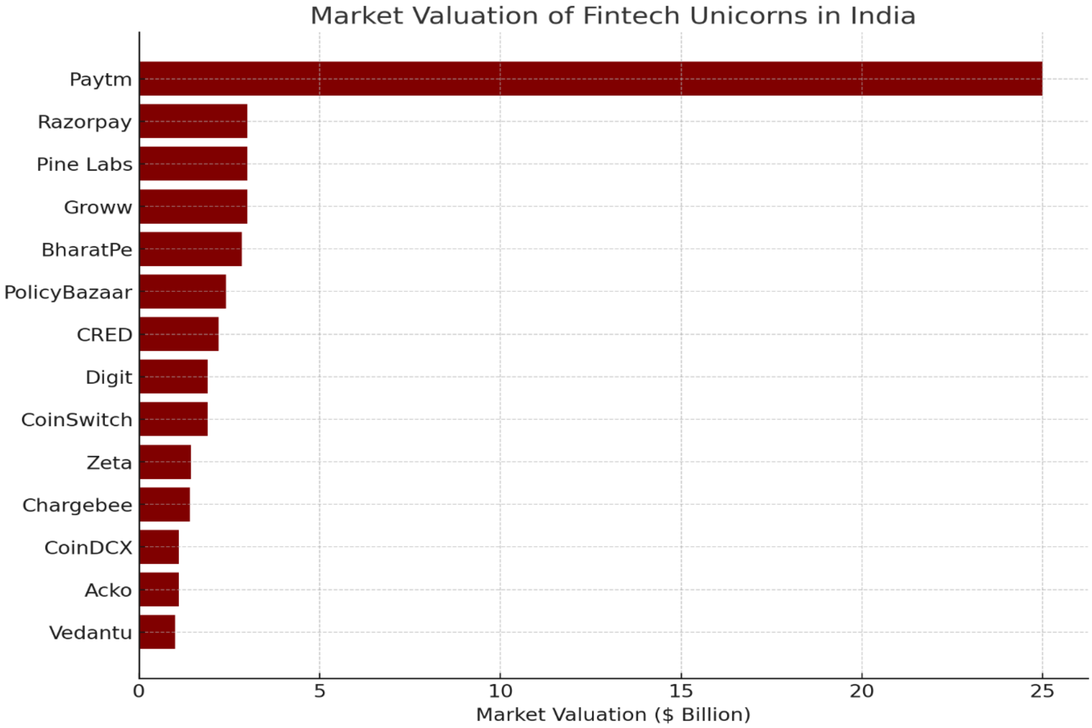

Figure 5: Market Valuation of Fintech Unicorns in India

Source: Newsletter CFTE: Fintech companies in India

The graph Figure 5, the market valuation of key fintech unicorns in India, highlighting the dominance of Paytm, with a valuation of $25 billion, followed by Razor pay, Pine Labs, and Grow at $3 billion each. This visualization is highly relevant to the study titled "Fintech and Digital Lending: A New Era of Decision-Making in the Digital Economy," as it underscores the rapid growth and significant capital inflow into the Indian fintech ecosystem. The data reflects how fintech companies have emerged as major players, reshaping the financial services landscape with innovations in digital lending, payment systems, and financial inclusion. The valuation of these fintech firms demonstrates the confidence investors place in their potential to drive the future of financial decision-making, particularly in emerging markets like India, where digital transformation is accelerating access to credit and financial services. This growth aligns with the broader trend of fintech disrupting traditional financial models, providing more efficient and inclusive solutions in the digital economy.

Key Drivers of Fintech Lending

- **Technological Innovation**

Fintech platforms leverage AI, machine learning, and big data analytics to streamline loan application and approval processes. These technologies enable lenders to assess creditworthiness using alternative data sources, such as digital footprints and social media activity, enhancing risk prediction and broadening credit access

- **Operational Efficiency**

Automation reduces processing times and operational costs, improving the borrower experience. For instance, Rocket Mortgage allows users to complete loan applications in minutes, emphasizing convenience and speed.

- **Financial Inclusion**

Fintech lending expands access to credit for underserved populations, including individuals and small businesses lacking traditional credit histories. By using alternative credit scoring methods, fintech platforms can serve markets traditionally excluded from formal financial systems

Investigations on Fintech Mechanisms to Advance the Financial Industry in the Digital Finance Era

- **Access to Innovative Payment Settlement Formats**

Innovative payment settlement formats are revolutionizing financial transactions, offering faster, more secure, and cost-efficient methods. These advancements allow businesses and financial institutions to streamline operations, reduce transaction times, and minimize costs associated with traditional payment systems (Kim et al., 2015). Examples include blockchain technology, which facilitates secure peer-to-peer transactions, and real-time settlement protocols, enabling entities to stay competitive in a rapidly evolving digital marketplace. Additionally, new methods such as internet banking, smartphone payments, and QR code payments have expanded the financial ecosystem, enhancing liquidity and operational efficiency (Das & Das, 2020).

- **Enhancing the Efficiency of Information Acquisition and Transmission**

The integration of advanced technologies like artificial intelligence, machine learning, and data analytics has significantly improved the efficiency of information acquisition and transmission. These technologies automate data collection, analyze large datasets for actionable insights, and facilitate real-time communication. This optimization allows organizations to make swift, data-driven decisions, adapt to market changes, and respond to consumer needs more effectively (Viscusi et al., 2011). Enhanced information flow fosters collaboration, operational excellence, and sustainable growth in an interconnected digital environment.

- **Raising the Bar for Comprehensive Risk Management**

The digital transformation of financial services has accelerated the adoption of intelligent risk control mechanisms. These systems incorporate various risk factors and leverage fragmented financial data to improve risk assessment and pricing. Blockchain technology, a key innovation, enhances data security and transparency by organizing information in immutable time-stamped blocks. It reduces human interference and operational risks in financial processes such as supply chain financing and credit reporting. Blockchain's integration in finance not only lowers costs but also improves credit information recognition, enhancing the overall risk management framework. These advancements ensure robust, secure, and efficient financial operations while minimizing information risk.

Conclusion

Fintech and digital lending have revolutionized the financial industry, introducing faster, more efficient, and inclusive financial services through advanced technologies such as AI, machine learning, and blockchain. These innovations have democratized credit access, particularly for underserved populations, and improved decision-making processes by enabling real-time credit assessments and streamlined loan disbursements.

Despite these benefits, challenges such as regulatory compliance, cybersecurity risks, and ethical concerns over data privacy persist. The rapid adoption of digital lending raises concerns about over-indebtedness and highlights the need for balanced innovation and regulation.

Looking ahead, fintech will continue to evolve with emerging technologies like decentralized finance (DeFi), shaping the future of financial services. To maximize its potential, stakeholders must address associated risks through robust governance and regulatory frameworks. This research underscores the importance of continued efforts to ensure fintech's sustainable growth and its contribution to a more inclusive and resilient digital economy

Limitations

While this study provides a comprehensive analysis of the transformative role of financial technology (Fintech) in the digital economy, several limitations must be acknowledged. First, the reliance on secondary data may not fully capture the most recent advancements in fintech, particularly in rapidly evolving sectors such as decentralized finance (DeFi) and blockchain applications. Second, the study focuses primarily on key markets, which may limit the generalizability of findings to smaller or emerging economies with different regulatory environments and technological infrastructures. Additionally, the absence of real-time data restricts the ability to analyze dynamic trends and the immediate impacts of fintech innovations. Lastly, variations in credit reporting systems across regions present challenges in drawing uniform conclusions about the effectiveness of fintech solutions in improving financial inclusion and operational efficiency.

Future Directions

Future research should address these limitations by exploring the following areas:

- **Empirical Studies**: Incorporating real-time data and longitudinal case studies to validate findings and provide deeper insights into the evolving fintech landscape.
- **Emerging Technologies**: Examining the role of cutting-edge innovations such as DeFi, blockchain-based lending, and AI-driven credit assessment in reshaping financial services.
- **Regulatory Impact**: Analyzing the effectiveness of various regulatory frameworks in fostering safe, inclusive, and sustainable growth in fintech sectors across different regions.
- **Market-Specific Dynamics**: Expanding research to include smaller and emerging economies to better understand the localized impacts of fintech on financial inclusion and systemic risk.

By addressing these areas, future studies can offer a more nuanced understanding of fintech's role in driving the digital economy and its potential to create a more inclusive and efficient global financial system

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BANKING ON THE WEB: HOW A COSMOPOLITAN CITY FEELS ABOUT ONLINE BANKING

Dr. Meenal Shah*

ABSTRACT

Online banking, also called internet banking, is a way to do your bank stuff on a computer or phone. It's like having a bank branch at your fingertips, open 24/7. You can check your account balance, transfer money, and pay bills anytime, anywhere. This is a new way of banking that is becoming more and more popular. This study looked at how happy people in Kota city are with their online banking services. So, the study wants to find out: Do people in Kota find online banking convenient and easy to use? Are they happy with the features and security of their bank's online system? Are there any concerns people in Kota have about online banking?.

KEYWORDS: *Online Banking, Customer Insight, Banking Industry and Technology.*

Introduction

Imagine a place you can store your money safely, kind of like a giant piggy bank. This place, called a bank, also helps you do other things with your money, like paying bills or growing it a little. Banks used to be buildings you had to visit, but now they've gotten super cool with technology!

Here's the exciting part: online banking! It's like having a mini bank on your phone or computer. It's safe and secure, just like a regular bank, but you can access it anytime, anywhere. No more waiting in lines! With online banking, you can see how much money you have, move money between accounts, and even pay your bills with just a few clicks.

Think of it like a magic money tool! It's not just convenient, it's also efficient. Banks can offer all sorts of helpful products and services online, from special deals for businesses to regular accounts for people like you and me.

In India, banks that aren't owned by the government (like State Bank of India) were the first to jump on the internet banking bandwagon. These private banks knew they were a bit behind the game because they hadn't been around as long. Setting up branches everywhere, especially in remote areas, would be a huge challenge.

So, these private banks got clever. They figured the best way to reach customers anytime, anywhere was through the internet. They saw internet banking as a secret weapon to compete with the big, established banks. It was their way of saying, "Hey, we might be newer, but we're tech-savvy and can be your bank from anywhere!"

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Online Banking Perks: Your Handy Money Toolkit

Online banking comes with a bunch of advantages that make managing your money a breeze:

- **24/7 Access:** No more waiting in line! Check your balance, transfer funds, or pay bills anytime, anywhere. Day or night, it's up to you. This is especially handy if you catch something suspicious in your account - you can deal with it right away.
- **Convenience King:** Forget geographical limitations. Online banking lets you access your bank from anywhere with an internet connection (IAMAI's, 2006; Gonzalez et al., 2008). Need to pay a bill while on vacation? No sweat!
- **Cost-Effective Champion:** Online banking is a budget-friendly option for both you and the bank. Since there's no need for physical branches, banks can offer these services at a lower cost.
- **Your Financial Powerhouse:** Many online banks provide fancy tools like account aggregation (seeing all your accounts in one place), stock quotes, and even programs to manage your investments. It's like having a mini financial advisor at your fingertips!
- **Going Green:** Online banking helps save the planet by reducing paper waste. No more piles of paper statements cluttering your drawers!

The Ups and Downs of Online Banking: A Customer's Perspective

The rise of online banking has totally shaken things up in the banking world! But with all this new technology comes some challenges that banks need to address to keep us, the customers, happy and confident.

Here's the thing: Security is a BIG concern. Banks got to make sure our online accounts are safe and protected from bad guys trying to steal our money. They're working hard with credit card companies and other folks to build a secure system for online payments, kind of like a high-tech vault for our cash.

Another thing? Online banking needs to be smooth and efficient. We shouldn't have to deal with slow loading times or clunky websites when trying to check our balance or pay bills. It should be fast and easy, just like snapping your fingers.

Speaking of trust, that's a key ingredient too. We need to feel confident that the banks are honest and reliable when it comes to online banking. They got to be transparent and upfront about everything, so we know our money is in good hands.

Finally, online banking should actually deliver on its promises. If a bank says you can do something online, like transferring money or managing investments, it should work flawlessly. No glitches, no disappointments!

This study wants to see how people in India feel about the online banking services offered by public sector banks (like the State Bank of India). Specifically, they want to know if these banks are meeting customer expectations and keeping people happy with online banking.

Objectives

This study is like a magnifying glass focused on understanding how people in a cosmopolitan city Kota feel about online banking offered by different banks. Here's a breakdown of the key things it aims to uncover:

- **Customer Insight:** This is all about how people in Kota view online banking services. Do they find it easy to use? Do they trust it? This part will gauge the general impression people have about online banking.
- **Satisfaction Level:** Here, the study dives deeper to see how happy customers are with the online banking services. Are features easy to find? Is the process smooth? This will show if the banks are meeting people's expectations.
- **Room for Improvement:** Finally, the study will use the findings to suggest ways banks can improve their online banking services. Maybe there are new features people would love or things that need to be made more user-friendly.

By understanding these aspects, banks can make their online banking services even better for their customers in Kota City.

Sample design and Data collection,

This study focused on people in Kota City who already use online banking services, either with public or private sector banks. We wanted to hear from the folks who are already using these online tools. - that was our target group (sample frame).

To make sure we got a good mix of opinions, we used a random sampling method, where everyone has an equal chance of being chosen. We then reached out to these chosen people and asked them to fill out surveys (open surveys).

By talking to a random selection of online banking users, we aimed to get a well-rounded picture of what people in Kota really think about these services.

Understanding Customer Thoughts: Convenience, Trust, and More

To understand how people in Kota feel about online banking, we looked at four key areas: convenience, trust and safety, efficiency, and how well the service meets their needs. We used a special technique called "scaling" to analyse these areas.

We asked people to rate five statements about each area on a scale of 1 to 5. A score of 5 meant they strongly agreed with the statement, while 1 meant they strongly disagreed. For example, a statement about convenience might be "It's easy to transfer money online" - people would rate how much they agree with that statement.

By analysing these scores, we could see how people in Kota felt about the different aspects of online banking. This helped us understand their overall insight of the service.

Table 1: Insight of Customer towards Convenience

Criteria	SA	A	N	DA	SDA	Total
Easily accessible by phone	101	19	0	0	0	581
Website always delivers quick service	52	50	18	0	0	514
Total Average						547.5

Table 1 shows some interesting things about how people in Kota feel about online banking. The statement "bank's online services are easily accessible by phone" scored the highest overall, not just for convenience but out of all the statements! This suggests that easy phone access is a big plus for online banking users.

The table also tells us that people in Kota generally find online banking convenient. The "convenience dimension" had the highest total average score, which means most people agreed that online banking makes things easier. Following convenience came trust and safety, then how well the service meets their needs, and finally, efficiency.

Table 2: Insight of customer towards trust and safety.

Criteria	SA	A	N	DA	SDA	Total
Bank’s website makes accurate promises about the services	24	84	8	4	0	488
Bank website launches and runs quickly and always available	86	34	0	0	0	566
No misuse of personal information	48	63	9	0	0	519
Confidence in banks online services	22	86	8	4	0	486
Feel safe in online transactions	62	43	15	0	0	527
Bank frequently educates about online banking	39	43	27	11	0	470
Bank name is well known and reputed	108	12	0	0	0	588
Total Average						520.57

Looking at **Table 2**, it seems people in Kota trust their banks' reputations the most. The statement "Bank's name is well known and has a good reputation" got the highest score. However, the statement "Bank frequently educates about online banking" got the lowest score. This tells us that while people trust their banks, they might not feel like they're getting enough information about how to use online banking features safely.

Table 3: Insight of customer towards efficiency

Criteria	SA	A	N	DA	SDA	Total
Customer service representatives always available online	32	27	17	44	0	407
Quickly resolve problem	8	70	26	16	0	430
Easily accessible by mobile phone	101	19	0	0	0	581
Prompt responses to request by email or other means	8	80	32	0	0	456
Website always delivers quick service	52	50	18	0	0	514
Bank site launches and runs quickly and always available	86	34	0	0	0	566
Website design is attractive	22	89	5	4	0	489
Regular upgrade of online services	33	72	8	7	0	491
Bank frequently educates about online banking	39	43	27	11	0	470
Online transaction is always accurate	50	70	0	0	0	530
Total Average						493.4

Let's dive into **Table 3,** which looks at how people in Kota view the efficiency of online banking. Here's what we found:

- **Thumbs Up for Mobile Access:** The statement "Bank is easily accessible by mobile phone" got the highest score (581), showing that people really appreciate being able to access their bank easily through their phones. This makes sense - it's convenient and allows people to bank on the go!
- **Room for Improvement in Customer Service:** The statement "Customer service representatives are always available online" got the lowest score. This suggests that some people might have had trouble getting help when they needed it online. Maybe they couldn't find a way to contact someone or had to wait a long time for assistance.

Table 4: Insight of customer towards fulfilment

Criteria	SA	A	N	DA	SDA	Total
Website always delivers quick service	52	50	18	0	0	514
Bank's website makes accurate promises about the services	24	84	8	4	0	488
Online transaction is always accurate	50	70	0	0	0	530
Bank website launches and runs quickly and always available	86	34	0	0	0	566
Website design is attractive	22	89	5	4	0	489
Total Average						517.4

Let's take a look at **Table 4,** which explores how well online banking services in Kota meet customer needs. Here's what we discovered:

- **Up and Running:** The statement "Bank site launches and runs quickly and is always available" scored the highest. This means people appreciate online banking platforms that are reliable and accessible whenever they need them. Nobody likes a website that crashes or takes forever to load!
- **Promises vs. Reality:** The statement "Bank's site makes accurate promises about the services" got the second-lowest score. This suggests that some folks might feel like the advertised features of online banking don't always match the actual experience. Maybe they encountered limitations or unexpected features they weren't informed about.
- **Looks Aren't Everything:** The statement "Website design is attractive" got the lowest score. While a visually appealing design can be nice, it seems functionality is more important to Kota's online banking users. They prioritize a website that's easy to navigate and use over fancy graphics.

Table 5: Level of Customers' Satisfaction

Satisfaction level	Percentage
Highly Satisfied	16
Satisfied	27
Moderate	52
Dissatisfied	4
Highly Dissatisfied	1

Table 5 takes a look at the big picture: how satisfied are people in Kota with their online banking services overall? Here's the key takeaway:

- **Moderately Satisfied Majority:** Over 50% of customers fell into the "moderate satisfaction" category. This doesn't necessarily mean they're unhappy, but it also doesn't mean they're super impressed. It suggests there's room for improvement.
- **Silver Lining:** Even though a majority fell under moderate satisfaction, it's still a positive sign! It means more people are satisfied with online banking than not.

What can Banks Do?

Based on this finding, here are some ways banks can improve their online banking efficiency:

- **Educate Customers:** Banks should focus on teaching people more about online banking, especially in these times with more cybercrime. This could involve workshops, online tutorials, or even brochures displayed in the bank.
- The study also found that some customers avoid online banking services because they're unsure how to use them or worry about safety. To address this, banks can:
  - Clearly explain all the online banking features they offer.
  - Provide detailed instructions on how to use these services safely.
  - Have a 24/7 helpline specifically for online banking questions.
- **Prioritize Problem-Solving:** Banks should make sure any problems customers encounter with online banking are addressed quickly and efficiently. This builds trust and keeps people happy.
- **Embrace Technology:** In today's world, it's crucial for banks to invest in good technology and infrastructure. This ensures a smooth online banking experience for everyone.
- **Boost Online Support:** Banks should make it easier for customers to get help online. This could involve offering live chat options, clear instructions on how to contact support, and ensuring there are enough representatives available to answer questions promptly.
- **Transparency is Key:** Banks should ensure their online banking platforms accurately represent the features and services offered. This builds trust and avoids frustration for users.
- **Focus on Usability:** While aesthetics is nice, banks should prioritize creating online banking platforms that are clear, user-friendly, and easy to navigate. People shouldn't have to struggle to find what they need.
- **Keep it Running Smoothly:** Banks should invest in maintaining their online banking platforms to ensure they're reliable, fast, and accessible 24/7. Downtime or slow loading times can be a major turn-off for users.
- **Focus on the Weak Spots:** Address the areas where customers expressed concerns, like ensuring clear communication about features, improving customer service accessibility, and making sure the online platform is user-friendly and reliable.
- **Keep Innovating:** Don't stop there! Banks can also keep developing new features and functionalities that meet the evolving needs of their online banking users in Kota.

By listening to their customers and making ongoing improvements, banks can create online banking experiences that are truly convenient, secure, and satisfying for everyone.

Conclusion

The way people bank is changing, and online banking is a big part of that story. Here's a breakdown of the key points:

- **The New Norm:** Online banking isn't just a perk anymore; it's becoming essential. It's a faster, cheaper way for banks to offer services, and the pandemic really highlighted its importance. Just like ATMs became widespread, online banking is likely to become the standard.
- **A Banking Revolution:** Online banking has totally transformed how banks work. It makes transactions easier and quicker, saving both time and money. Banks have invested heavily in this technology, and its success hinges on getting people to switch over.

- **Helping People Embrace the Change:** Since folks are used to traditional banking, education is crucial. Banks need to show people how to use online banking features comfortably.
- **The Big Picture:** When online banking works well, it benefits everyone. Banks can operate more efficiently, costs go down, and they can even offer new features and services. This creates a thriving banking industry that better serves its customers.

Overall, online banking is a powerful force changing the banking landscape in Kota and around the world. By educating customers and making the switch smooth, banks can ensure this technology reaches its full potential.

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FINANCIAL PERFORMANCE EVALUATION OF SELECTED INDIAN AUTOMOBILE COMPANIES BY USING ALTMAN'S Z-SCORE MODEL

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Prof. (Dr.) P.S. Hirani**

ABSTRACT

Undoubtedly, the Indian automobile industry is one of the most successful and promising sectors, especially after independence. The automobile industry is a major contributor to the economic progress of country. The Indian government has recognized the importance of the automobile industry as part of its goal of becoming the world greatest nation by 2026. The performance of the Indian automobile industry is important for the overall economic recovery of the country. The primary purpose of the present study is to analyze and compare the overall financial health of chosen commercial vehicle companies as well as anticipate the possibility of bankruptcy for selected companies using Altman's Z-score model. To conduct the study, Ashok Leyland Ltd., SML Isuzu Ltd., and Atul Auto Ltd. were selected using the purposive sampling method. This study was conducted over five years, from 2018-19 to 2022-23. The essential information is acquired from the Website of Bombay Stock Exchange and the selected companies' annual reports. Edward I. Altman developed the Altman Z-Score model, which has been used to analyze the data. The findings of the study demonstrate that Atul Auto Limited appears to be the most financially stable, while SML Isuzu Limited exhibits the greatest degree of risk and fluctuation, with Ashok Leyland Limited being in the middle position.

KEYWORDS*: Automobile Companies, Financial Health, Altman Z-Score.*

Introduction

Over the last few decades, the automobile industry has expanded in accordance with substantial developments and changing market conditions. Technological innovations, such as the development of electric cars (EVs) and advancements in autonomous driving have resulted in significant changes in the sector. Major automakers are boosting their investment in EV technology in response to environmental laws and growing consumer preferences for sustainable transportation options. Emerging markets, notably in Asia, have considerably aided the industry's expansion. Rising disposable incomes and urbanization have contributed to increases in automotive production as well as sales in countries such as China and India. Despite confronting hurdles such as supply chain disruptions, fluctuating fuel prices, and the economic impact of the COVID-19 epidemic, the automobile sector remains resilient and adaptable. The industry is well-positioned for long-term growth due to its emphasis on sustainability, innovation, and expansion into new markets.

Ashok Leyland was founded in 1948 and changed its name to Ashok Leyland in 1955 following a partnership with British Leyland. It is an Indian multinational automotive company headquartered in Chennai. It is presently owned by the Hinduja Group. SML ISUZU LIMITED was founded in July 1983 as Swaraj Vehicles Limited to manufacture Light Commercial Vehicles (LCVs) in the state of Punjab. Atul Auto Limited is an Indian manufacturer of three-wheelers located in Rajkot.

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In 1968, Edward I. Altman, formerly an Assistant Professor of Finance at New York University, developed the Z-score model for forecasting bankruptcy. This technique can be used to predict if a company will go bankrupt within two years In reality, Altman's Z-score formula helps investors understand a company's overall financial health. This study attempts to assess the financial health of automobile companies as well as predict the likelihood of bankruptcy for a specific segment of the sector. There are numerous approaches available for determining the financial condition of a company. However, Altman's Z score has proven to be a trustworthy instrument all over the world. This model focuses on predicting the likelihood of manufacturing companies going bankrupt. There is evidence that it predicts the underlying sample's bankruptcy with 76.9% accuracy (Begley et al., 1996). The model is built on financial ratios. Using financial ratios to predict bankruptcy can be accurate up to 90% (Chen & Shemerda, 1981).

Literature Review

For the purpose of conducting the research few research papers were reviewed by the researcher. Following are the information that has been reviewed:

Dr. Abdul Rahman (2024) published the research papertitled **"**Five financial ratios Altman Z Score: A tool to assess car manufacturing companies" in Journal of Research Administration. The current study's major goal was to apply Altman's Z-Score model to assess creditworthiness and predict the chance of bankruptcy for selected automobile firms. Another objective of the study was to examine the situation of circulating capital and determine the level of retained earnings for the chosen company. Five firms from the automotive industry were chosen based on market potential and fundamentals. This study was carried out over a period of five years, from 2019-20 to 2023-24. The study's information was obtained from a number of sources, including books, Thomson Reuters, stock exchange websites, and annual reports. Edward I. Altman provided Altman's Z-Score model, which was used to analyze the data. According to the study's conclusions, General Motors Company and Mahindra & Mahindra Ltd. had extremely low Z-scores as compared to the other selected companies. This study also revealed that many automobile companies are financially stable.

Kana R. Odedra & Dr. Harish M. Chandarana (2022) has made a research paper on "An Analytical Study of Financial Health of Selected Indian Automobile Companies with reference to Altman Z-Score" in The International Journal of Commerce and Management. The current study's major purpose was to assess the overall financial soundness of selected vehicle manufacturers and to analyze the various Z score ratios using the Altman Z-Score model. Six vehicle companies included on the National Stock Exchange's Nifty 500 index were picked using a simple random selection procedure. The study covers a five-year period, from 2015-16 to 2019-20. This study was primarily based on secondary sources. The required data were gathered from NSE websites and the annual reports of the selected firms. The researcher utilized ANOVA and the Z-Score model to analyze the data. The findings of the study reveal that the financial health of the vehicle sector is getting worse, so the government and the auto industry should take comprehensive steps to promote the auto industry and avoid the bankruptcy of some automobile companies.

Baba T.(2019) published a research paper on "Financial Distress Analysis of Selected Indian Automobile Companies by Using Altman Z Score Model" in International Journal of Business Management Invention. The primary goal of this article was to investigate automotive firms' financial troubles using the Altman Z-score technique. The six sample firms were chosen by using the judgmental sampling method. The required data was collected from the company's annual reports for the last five years, from 2015 to 2019. The research was looking into the dangers of a financial crisis for automotive companies. Examine a company's financial strength in the face of a bankruptcy threat. The researcher determined that of the six companies, Baja Auto Limited and Hero Motor Corp. Limited are financially secure. Tata Motors is in danger, which is not good news for the firm and its shareholders.

Pujari Sudharsana Reddy & Dr. Mamilla Rajasekhar (2017) published the research paper titled" Assessment of Financial Health Condition of Automobile Industry in India Using Altman's "Z" Score" in A Research & Academic Journal of Business Management. This research's primary objective was to measure the financial stability and forecast the financial situation of the selected vehicle firms in India. The researcher selected Hero Motors Corporation, Bajaj Auto Ltd., TVS Motors Ltd., and Maharashtra Scooters Ltd. to assess their financial condition. The required information was obtained from the respective companies' annual reports. Altman's Z-Score model was used to analyze the data between 2002-03 and 2014-15. Tables and graphs were utilized to help people comprehend. After analyzing the data, it is possible to conclude that all of the selected enterprises had excellent financial conditions. It was also determined that Hero Motors Corporation has the best financial situation of all of the evaluated companies. Despite the fact that TVS Motors' Z-Score was greater than the average of three. Although TVS Motors' Z-Score was greater than the average level of 3, MSL sales were constantly dropping.

Dr. V. Kannan & V. Monisha (2016) has made a research paper on “Financial soundness of selected Indian Automobile Companies using Altman Z-Score model” in International Journal of Advanced Scientific Research & Development. The current study's major goal was to apply Altman's Z-score model to assess the overall financial situation and estimate the possibility of bankruptcy for the selected automobile businesses. Another purpose of the study was to look at the state of floating capital, assess the amount of retained earnings, interpret profit before interest and tax for selected businesses, analyze market capitalization, and make suitable suggestions. In this study, researchers analyzed secondary data to examine the seven organizations during the last five years (2010-11 to 2014-15). The current study's findings indicate that selected companies have been in a safe zone for the past five years. This survey also demonstrates that many Indian automakers are financially stable.

Research Methodology

Research Gap

The Indian automobile industry is a major contributor to the country's economic expansion. While reviewing the literature, it can be observed that scholars have worked on numerous areas; the following areas should be explored for future research:

For the purpose of conducting the study, the researcher selects all three commercial vehicle manufacturing companies based on market capitalization on April 4, 2024, that are listed on the Bombay Stock Exchange of India (BSE). The current study mainly deals with using Altman’s Z-Score Model to evaluate the overall financial health of the chosen firm over a period of five years, ranging from 2018-19 to 2022-23.

Research Objectives

- To studyand compare the overall financial health of selected commercial vehicles companies by using Altman’s Z-score model.
- To forecast the likelihood of bankruptcy for commercial vehicles companies by using the Altman’s Z score model.

Research Design

In this study, the researcher used a descriptive research approach. This study examines the financial performance of selected automobile companies in India. The financial soundness of the picked automobile enterprises can be evaluated using Altman's Z-Score Model.

Sources of the Data

In order to conduct the study, essential data were gathered from secondary sources such as the annual reports of the respective companies, the Bombay Stock Exchange’s official website, and the Society of Indian Automobile Manufactures (SIAM).

Time Period of the Study

The current investigation covers five fiscal years, which run from 2018-19 to 2022-23, and encompasses accounting information from that period.

Sample of the Study

The researcher selects all three commercial vehicle-producing companies listed on the Bombay Stock Exchange (BSE) in terms of market capitalization on April 4, 2024, using the purposive sampling approach.

List of selected Automobile Companies

Rank	Name of Commercial Vehicles Companies	Market Capitalisation (Rs. Cr.)
1	Ashok Leyland Ltd.	50769.1
2	SML ISUZU LIMITED	3024.14
3	Atul Auto Limited	1408.52

Research Model

- **Altman's Z-Score Model**

Altman's Z-Score model is a numerical evaluation that predicts a company's likelihood of going bankrupt during the next two years. Edward I. Altman, an American finance professor, devised the model in 1968 to assess a company's financial health.

The researcher applies Altman's Z-Score Model to assess the financial performance of selected automobile companies in India.

- **Equation of Z – Score Model:**

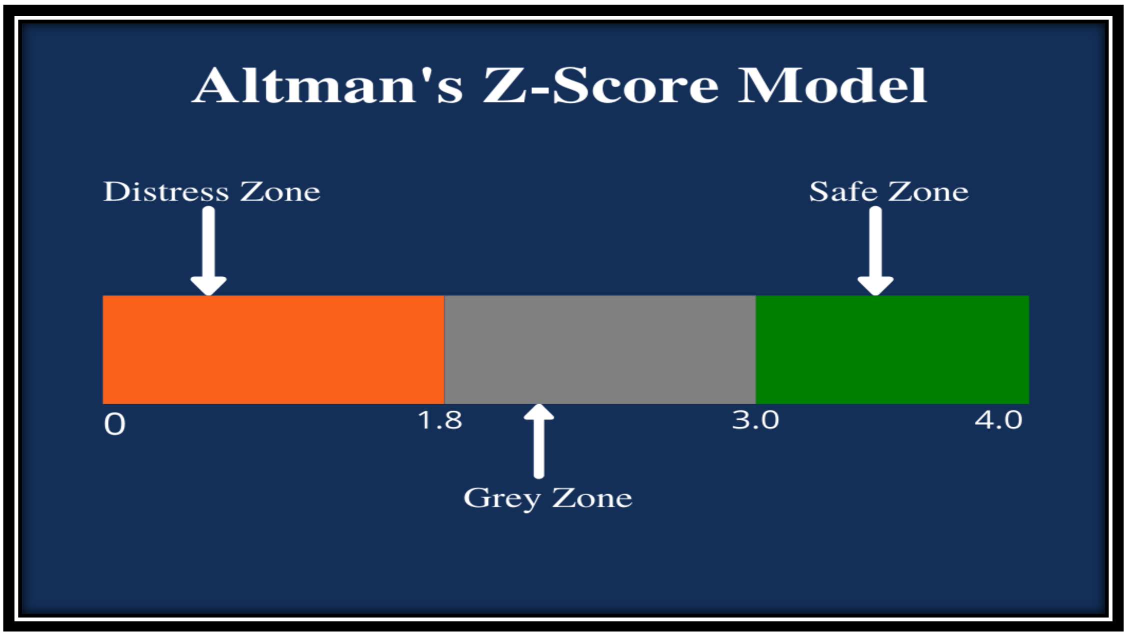
Z= 1.2 T1 + 1.4 T2 + 3.3 T3 + 0.6 T4 + 0.99 T5

Here,

T1	Working Capital / Total Assets
T2	Retained Earnings / Total Assets
T3	Earnings before interest & taxes / Total Assets
T4	Market Value of Equity / Book value of total liabilities
T5	Sales / Total Assets

Situation	Z-Score	Zone
1	Z score > 2.99	**Safe Zone**
2	1.81 < Z score < 2.99	**Grey Zone**
3	Z score < 1.81	**Distress Zone**

A Z-score of less than 1.8 indicates that the company is likely to go bankrupt, but a Z-score of greater than three indicates that the company is unlikely to go bankrupt. Altman Z-scores can help investors decide whether to buy or sell a stock. Shareholders might consider buying a stock if its Altman Z-Score value is closer to three and selling the share if it is closer to 1.8.



- **The Five Financial Ratios in Z-Score**
    - **Working Capital / Total Assets**

Working capital is the difference between a company's current assets and current liabilities. The value of a company's working capital affects its short-term financial stability. Positive working capital indicates that a company can satisfy its short-term financial obligations. On the other hand, negative working capital indicates that a company might be unable to satisfy its short-term financial obligations due to insufficient current assets.

- **Retained Earnings / Total Assets**

The retained earnings/total assets ratio measures a company's retained earnings or losses. If a corporation has a low retained earnings to total assets ratio, it indicates that it covers its expenses from borrowed funds rather than retained earnings. It raises the likelihood of a company declaring bankruptcy. A high retained earnings to total assets ratio indicates that the company's retained earnings are used to pay capital expenditures. It demonstrates that the organization has reached profitability over time and no longer needs to borrow money.

- **Earnings before interest & taxes / Total Assets**

EBIT is an estimate of the profitability of a business, and it denotes the capacity of the company to produce profits purely through its business activities. The EBIT/Total Assets ratio shows a company's ability to produce sufficient revenue to remain profitable while funding ongoing operations and debt payments.

- **Market Value of Equity / Book value of total liabilities**

The market value is the total worth of a company's equity. It is calculated by multiplying the total number of outstanding shares by the present stock price. The market value of the equity/total liabilities ratio indicates how much a company's market value would fall if it declared bankruptcy before the value of liabilities exceeded the value of assets on its balance sheet. A high market value of equity to total liabilities ratio indicates that investors are confident in the company's financial strength.

- **Sales / Total Assets**

The sales/total assets ratio demonstrates how efficiently management uses assets to create revenue in comparison to competitors. A high sales/total-assets ratio indicates that management requires very few expenses to generate sales, which boosts its overall profitability. A low or declining sales/total assets ratio shows that management will need to expand additional resources in order to generate adequate sales.

Analysis and Interpretation

Data analysis involves analyzing, cleaning, manipulating, and interpreting data to gather relevant information, draw conclusions, and it also help in proper decision-making.

Table 1: Computation of Altman's Z-Score of Ashok Leyland Limited

Altman's Z-Score Analysis of Ashok Leyland Limited.					
Altman's Z-Score Analysis Calculation					
Working Capital / Total Assets					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Working Capital	569.77	-77.33	-822.31	-1575.44	-602.62
Total Assets	22591.63	20333.78	18449.91	16389.61	18224.4
Working Assets / Total Assets (T1)	**0.025220402**	**-0.003803**	**-0.0445699**	**-0.09612431**	**-0.033067**
Retained Earnings / Total Assets					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Retained Earnings	4875.14	3798.94	3459.91	3768.2	4845.91
Total Assets	22591.63	20333.78	18449.91	16389.61	18224.4
Retained Earnings / Total Assets (T2)	**0.215794079**	**0.18682901**	**0.18752991**	**0.22991395**	**0.2659023**
Earnings before interest & taxes / Total Assets					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Earnings before interest & taxes	2399.49	828.72	-105.12	471.37	2567.18
Total Assets	22591.63	20333.78	18449.91	16389.61	18224.4
Earnings before interest & taxes / Total Assets (T3)	**0.10621146**	**0.04075583**	**-0.0056976**	**0.02876029**	**0.140865**

Market Value of Equity / Book value of total liabilities					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Market value of Equity	42763.35	37142.4	33359.2	14867.4	25749.9
Book value of total liabilities	14154.96	12985.1	11472.71	9125.62	9891.97
Market Value of Equity / Book value of total liabilities (T4)	**3.021085895**	**2.86038613**	**2.9077001**	**1.62919341**	**2.6031114**
Sales / Total Assets					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Sales	36144.14	21688.29	15301.45	17467.47	29054.95
Total Assets	22591.63	20333.78	18449.91	16389.61	18224.4
Sales / Total Assets (T5)	**1.599890756**	**1.06661378**	**0.82935093**	**1.06576484**	**1.5942884**
Altman's Z-Score					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Final Z-Score	**4.079417397**	**3.16367053**	**2.75593347**	**2.33406256**	**3.9376501**
Financial Stability	**Safe Zone**	**Safe Zone**	**Grey Zone**	**Grey Zone**	**Safe Zone**

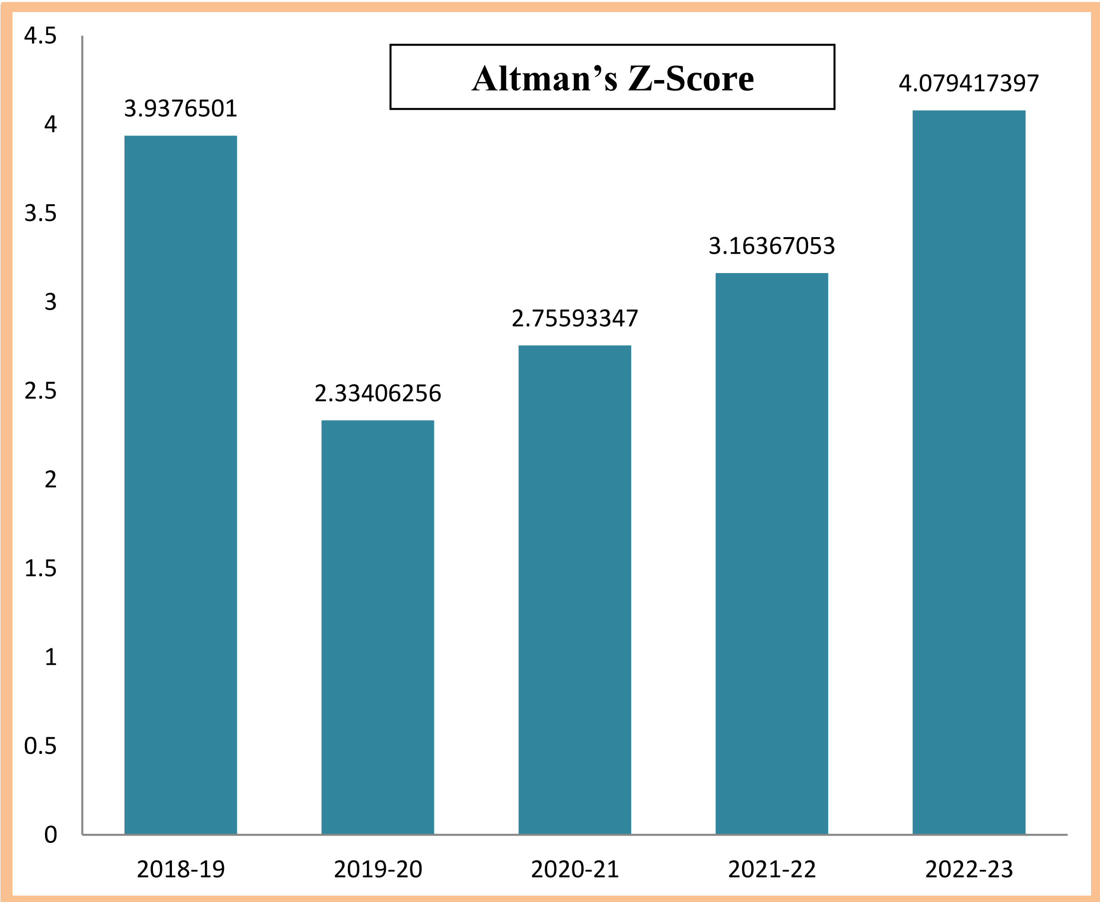


Figure 1: Altman's Z-Score of Ashok Leyland Limited

From 2018-19 to 2022-23, Ashok Leyland Ltd.'s financial stability was evaluated using the Altman Z-score model, which revealed various levels of strength. The Z-scores for 2018-19, 2021-22, and 2022-23 show robust financial health, with scores much beyond the 2.99 threshold associated with stability. However, scores for 2020-21 and 2019-20 were in the grey zone (1.81-2.99), indicating a high probability of financial issues. These swings show periods of both robust and conservative financial conditions. Stakeholders should keep an eye on future Z-scores to assess Ashok Leyland's financial health and identify potential hazards.

Table 2: Computation of Altman's Z-Score of SML Isuzu Limited

Altman's Z-Score Analysis of SML Isuzu Limited.					
Altman's Z-Score Analysis Calculation					
Working Capital / Total Assets					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Working Capital	-14679.75	-17289.95	-7790.96	6266.44	13766.79
Total Assets	93656.39	81582.52	79623.62	85862.61	109503.47
Working Assets / Total Assets (T1)	**-0.156740506**	**-0.211932041**	**-0.097847347**	**0.072982175**	**0.125720126**
Retained Earnings / Total Assets					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Retained Earnings	-1308.6	-3009.76	6473.18	19538.17	22341.06
Total Assets	93656.39	81582.52	79623.62	85862.61	109503.47
Retained Earnings / Total Assets (T2)	**-0.013972351**	**-0.036892217**	**0.081297233**	**0.22755155**	**0.20402148**
Earnings before interest & taxes / Total Assets					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Earnings before interest & taxes	4231.97	-7875.29	-11002.79	-2368.92	4042.95
Total Assets	93656.39	81582.52	79623.62	85862.61	109503.47
Earnings before interest & taxes / Total Assets (T3)	**0.045186132**	**-0.096531585**	**-0.138185001**	**-0.027589657**	**0.036920748**
Market Value of Equity / Book value of total liabilities					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Market value of Equity	137743.2	99997	65462.28	56401.23	114573.46
Book value of total liabilities	75861.72	65434.02	54066.8	47375.79	68144.55
Market Value of Equity / Book value of total liabilities (T4)	**1.81571417**	**1.528211166**	**1.210766681**	**1.19050743**	**1.681329762**
Sales / Total Assets					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Sales	182159.09	92416.98	59148.22	115415.51	140921.68
Total Assets	93656.39	81582.52	79623.62	85862.61	109503.47
Sales / Total Assets (T5)	**1.944972361**	**1.132803694**	**0.742847663**	**1.344188233**	**1.2869152**
Altman's Z-Score					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Final Z-Score	**2.956415476**	**1.413880572**	**1.002268001**	**2.360155719**	**2.841176595**
Financial Stability	**Grey Zone**	**Distress Zone**	**Distress Zone**	**Grey Zone**	**Grey Zone**

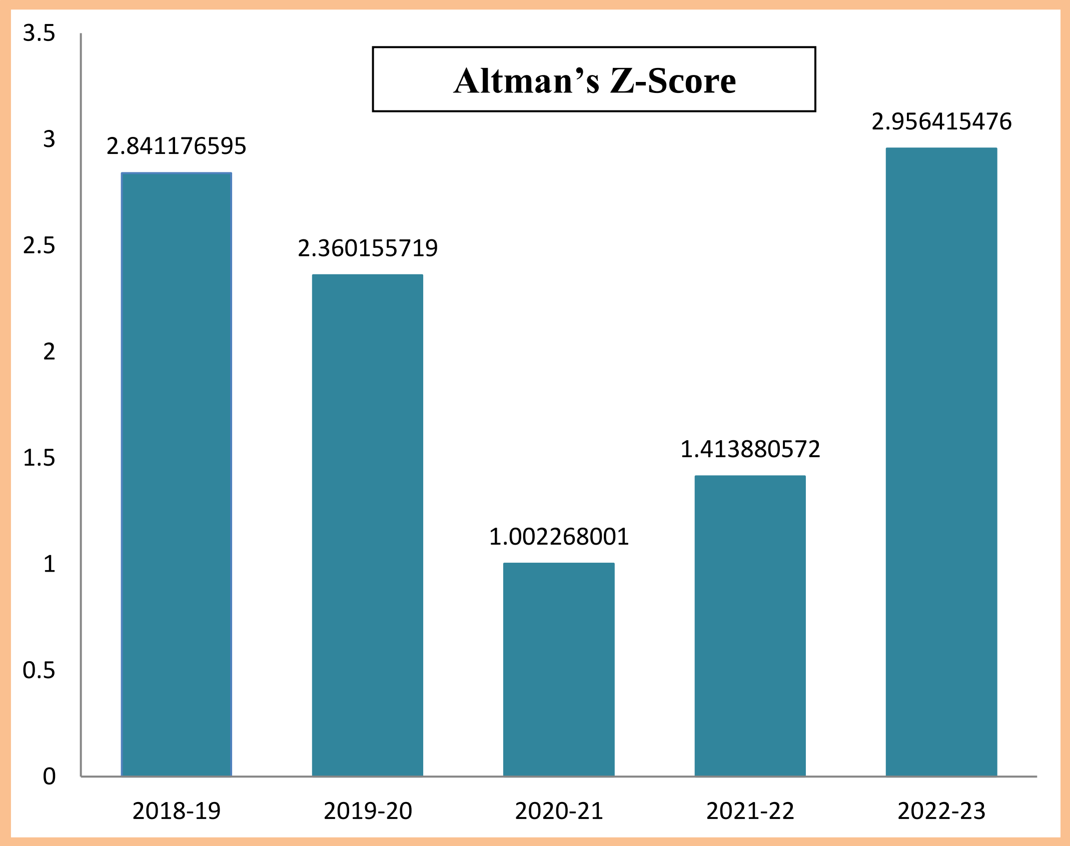


Figure 2: Altman's Z-Score of SML Isuzu Limited

The financial data for SML Isuzu Company from March 2019 to March 2023, as examined using the Z-score model, demonstrates varied levels of financial stability. In March 2023, the company's Z-score was 2.956, putting it in the Grey Zone, which indicates moderate risk. The preceding two years, March 2021 and March 2022, demonstrated distress with Z-scores of 1.002 and 1.414, respectively. The company has Z-scores of 2.360 and 2.841 in March 2020 and March 2019, respectively, placing it in the Grey Zone. Overall, SML Isuzu had financial difficulties in 2021 and 2022 but improved in 2023, despite remaining in the Grey Zone, underscoring the importance of continued financial monitoring.

Table 3: Computation of Altman's Z-Score of Atul Auto Limited.

Altman's Z-Score Analysis of Atul Auto Limited.					
Altman's Z-Score Analysis Calculation					
Working Capital / Total Assets					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Working Capital	3852	408	3809	6674	9955.54
Total Assets	44151	41892	38072	37584	35347.47
Working Assets / Total Assets (T1)	**0.087246042**	**0.00973933**	**0.100047279**	**0.177575564**	**0.28164788**
Retained Earnings / Total Assets					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Retained Earning	23599	23157	25601	26603	22137
Total Assets	44151	41892	38072	37584	35347.47
Retained Earnings / Total Assets (T2)	**0.53450658**	**0.552778573**	**0.672436436**	**0.707827799**	**0.626268302**

Earnings before interest & taxes / Total Assets					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Earnings before interest & taxes	1231	-2849	-1232	6806	8281.82
Total Assets	44151	41892	38072	37584	35347.47
Earnings before interest & taxes / Total Assets (T3)	**0.027881588**	**-0.068008212**	**-0.03235974**	**0.181087697**	**0.234297391**
Market Value of Equity / Book value of total liabilities					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Market value of Equity	74630	35500	39280	31040	33685.54
Book value of total liabilities	11079	15013	8749	7259	9487.76
Market Value of Equity / Book value of total liabilities (T4)	**6.736167524**	**2.364617332**	**4.489655961**	**4.276071084**	**3.550420753**
Sales / Total Assets					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Sales	47470	29382	29590	62534	66675.7
Total Assets	44151	41892	38072	37584	35347.47
Sales / Total Assets (T5)	**1.075173835**	**0.701374964**	**0.777211599**	**1.663846318**	**1.886293418**
Altman's Z-Score					
	Mar-23	Mar-22	Mar-21	Mar-20	Mar-19
Final Z-Score	**6.051136314**	**2.674281714**	**4.417913665**	**6.0144895**	**5.985617404**
Financial Stability	**Safe Zone**	**Grey Zone**	**Safe Zone**	**Safe Zone**	**Safe Zone**

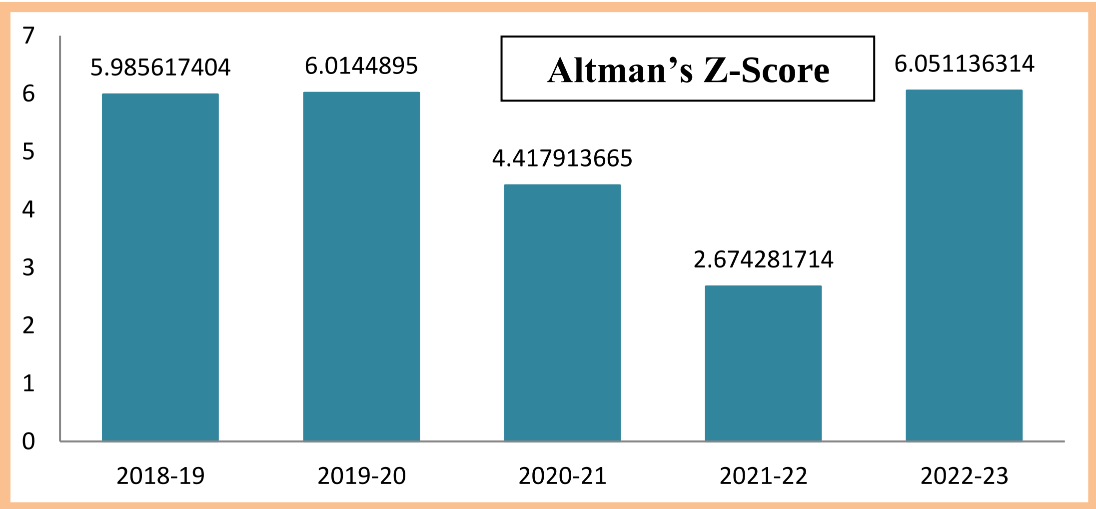


Figure 3: Altman's Z-Score of Atul Auto Limited

The financial data for Atul Auto Ltd. from March 2019 to March 2023, as analyzed using Altman's Z-score model, show overall high financial stability. With Z-scores suggesting strong stability in 2019, 2020, 2021, and 2023, the corporation was relatively secure. Only in March 2022 did it enter the grey zone, signifying serious financial concerns, but it quickly recovered by 2023. Overall, Atul Auto Ltd. has demonstrated sound financial management and resilience, maintaining a strong financial position for the most of the period.

Table 4: Comparative Analysis of Commercial Vehicle Companies using Altman's Z-Score Model

Name of Companies	Mar-2023	Mar- 2022	Mar- 2021	Mar-2020	Mar-2019
Ashok Leyland Limited	4.079417397	3.163670529	2.755933475	2.334062562	3.937650111
SML Isuzu Limited.	2.956415476	1.413880572	1.002268001	2.360155719	2.841176595
Atul Auto Limited.	6.051136314	2.674281714	4.417913665	6.0144895	5.985617404

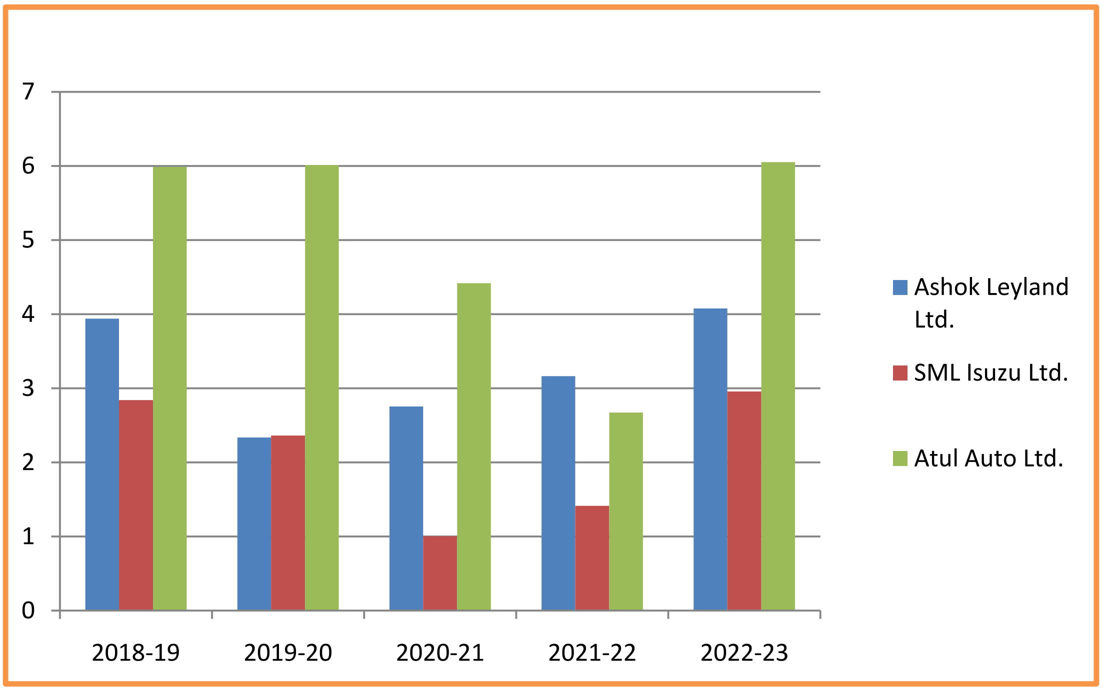


Figure 4: Altman's Z-Score of Selected Commercial Vehicles Companies

The Altman's Z-score analysis of Ashok Leyland Limited, SML Isuzu Limited, and Atul Auto Limited during the five-year period ranging from 2019 to 2023 demonstrates varying levels of financial stability. Ashok Leyland's Z-scores fluctuate, with a significant decline from 3.937 in March 2019 to 2.334 in March 2020, indicating a period of financial stress, followed by a gradual rebound to 4.079 in March 2023. SML Isuzu shows a more erratic path, with a big dip to 1.002 in March 2021, indicating a high bankruptcy risk, then an improvement to 2.956 by March 2023. Atul Auto Limited is the most stable of the three, with Z-scores constantly over 2.6, reaching 6.051 in March 2023, demonstrating high financial health.

Overall, Atul Auto Limited appears to be the most financially strong, whereas SML Isuzu Limited exhibits the highest levels of risk and fluctuation, with Ashok Leyland Limited falling in the middle position.

Research Shortcomings

The study is restricted only to Indian automobile companies and cannot be generalized to other sectors. The results are only applicable for the time period selected (2018-19 to 2022-23). The study has a small sample size; consequently, there is some risk associated with it. The Altman Z Score model was developed and tested in 1968. The researcher used samples from Indian companies that are listed on BSE. Even though it has been updated, the reliability of the model for the current situation and Indian companies has not yet been tested.

Findings and Conclusions

Consistently assessing the financial situation of the companies is very important. However, in a growing country like India, such analysis is not given priority. It is not extensively investigated in many emerging economies. This study focused on determining the financial health of automobile manufacturers. The automobile sector contributes significantly to the gross domestic product (GDP) of any economy. A study of this sector can provide insights into its performance for both external and internal users. According to this study, Ashok Leyland's Z-scores fluctuate, with a considerable drop from 3.937 in 2019 to 2.334 in 2020, indicating financial hardship, followed by a gradual rise to 4.079 in 2023. SML Isuzu follows a more unpredictable path, with a significant drop to 1.002 in 2021, suggesting a high bankruptcy risk, followed by an improvement to 2.956 by 2023. Atul Auto Limited had the most stable Z-scores of the three, consistently exceeding 2.6 and reaching 6.051 in 2023, indicating strong financial health. Ultimately, Atul Auto Limited appears to be the most financially stable, whereas SML Isuzu Limited has the highest levels of risk and fluctuation, with Ashok Leyland Limited being in the middle.

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GOODS AND SERVICES TAX (GST) AND ITS IMPACT ON THE INDIAN MANUFACTURING SECTOR: A COMPREHENSIVE ANALYSIS

Dr. Dipak Kumar Poddar*

ABSTRACT

The implementation of the Goods and Services Tax (GST) in India marked a significant overhaul of the country's indirect tax system, aiming to create a unified market and streamline tax compliance. This paper provides a comprehensive analysis of GST's impact on the Indian manufacturing sector, focusing on both the positive outcomes and the challenges faced by manufacturers. The study examines how GST has simplified the tax structure by replacing multiple indirect taxes with a single tax, thereby reducing the cascading effect of taxes on goods. It also explores the initial disruptions experienced by manufacturers, including compliance burdens and adjustments to the new tax regime. The analysis highlights the benefits of GST, such as improved efficiency in logistics and supply chain management, which have contributed to cost reductions and increased competitiveness of Indian manufacturers. Additionally, the paper discusses the role of GST in promoting formalization within the sector, leading to better tax compliance and increased revenue for the government. However, the study also identifies areas where GST implementation has posed challenges, such as the need for continuous updates to the GST framework and the impact on small and medium enterprises (SMEs).Overall, this paper provides a balanced view of GST's impact on the Indian manufacturing sector, offering insights into its long-term implications for economic growth and industrial development.

KEYWORDS*: Goods and Services Tax (GST), Indian Manufacturing Sector, Tax Compliance, Supply Chain Management, Small and Medium Enterprises (SMEs).*

Introduction

The GST, introduced in India on July 1, 2017, represents a landmark reform in the country's indirect tax system. Aimed at creating a unified market and simplifying the tax structure, GST replaced a plethora of central and state taxes with a single, comprehensive tax. This reform has had profound implications for various sectors of the economy, particularly the manufacturing sector, which contributes approximately 17% to India's Gross Domestic Product (GDP) and employs around 12% of the workforce. This introduction provides a detailed overview of GST and its impact on the Indian manufacturing sector, supported by numerical data to highlight key trends and outcomes.

Before the implementation of GST, the Indian tax system was characterized by a complex web of indirect taxes, including excise duty, service tax, value-added tax (VAT), central sales tax (CST), and various state-level taxes. This multiplicity of taxes led to inefficiencies, increased compliance costs, and a cascading effect where taxes were levied on top of other taxes. The GST sought to address these issues by consolidating multiple taxes into a single tax, applicable uniformly across the country. GST is structured as a dual system, comprising Central GST (CGST) and State GST (SGST) for intra-state transactions, and Integrated GST (IGST) for inter-state transactions. This dual model ensures that both the central and state governments retain their revenue-raising powers while providing a seamless tax experience for businesses. One of the primary benefits of GST for the manufacturing sector is the

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elimination of the cascading tax effect. Under the previous tax system, manufacturers often faced multiple layers of taxation, leading to higher production costs and reduced competitiveness. GST has streamlined the tax structure, allowing manufacturers to claim input tax credits for the taxes paid on inputs, thereby reducing the overall tax burden and production costs. According to a report by the Confederation of Indian Industry (CII), the effective tax rate for the manufacturing sector has decreased from an average of 25-30% to 18% under GST, resulting in significant cost savings.

Moreover, GST has simplified logistics and supply chain management for manufacturers. The pre-GST era was marked by numerous state-level checkpoints and varying tax rates, which hindered the smooth movement of goods across state borders. GST has facilitated the creation of a unified national market by removing these barriers, leading to faster and more efficient transportation of goods. According to the Ministry of Finance, the average turnaround time for trucks has reduced by 20% post-GST, translating into lower logistics costs and improved supply chain efficiency. However, the transition to GST has not been without challenges. The initial implementation phase saw significant disruptions as businesses adapted to the new tax regime. Manufacturers had to invest in upgrading their accounting and IT systems to comply with GST requirements, which involved substantial costs and efforts. Additionally, the frequent changes and updates to GST rules and rates have posed compliance challenges for manufacturers, particularly SMEs that may lack the resources to keep up with the evolving regulations. A survey conducted by the Federation of Indian Chambers of Commerce & Industry (FICCI) revealed that 60% of SMEs reported increased compliance costs post-GST.

Another critical aspect of GST's impact on the manufacturing sector is the formalization of the economy. GST has brought a large number of unorganized sector players into the formal tax net, promoting greater transparency and accountability. This formalization has led to better tax compliance and increased revenue for the government. According to the Central Board of Indirect Taxes and Customs (CBIC), GST collections have consistently exceeded INR 1 trillion per month since October 2020, indicating robust compliance and revenue generation. Impact on the Indian manufacturing sector, offering both significant benefits and notable challenges. While GST has streamlined the tax structure, reduced production costs, and improved supply chain efficiency, it has also required manufacturers to navigate compliance complexities and adapt to a new tax environment. This comprehensive analysis aims to delve deeper into these aspects, providing a balanced view of GST's impact on the manufacturing sector and its implications for India's economic growth and industrial development.

Objectives

- To assess the compliance challenges faced by SMEs under the GST regime.
- To evaluate the GST's impact on supply chain efficiency and logistics management.
- To analyse the GST's effect on manufacturing costs and competitiveness in India.

Challenges Faced by SMEs Under the GST Regime

The GST in India was a landmark reform aimed at simplifying the tax structure and creating a unified market. However, for SMEs, the transition to GST has presented several compliance challenges. These challenges have been documented through various reports and data from the Indian government, highlighting the difficulties faced by SMEs in adapting to the new tax regime:

- **Multiple Return Filings:** One of the most significant compliance challenges for SMEs under GST is the requirement to file multiple returns. SMEs are required to file three monthly returns (GSTR-1, GSTR-2, and GSTR-3) and an annual return (GSTR-9). This frequent filing requirement has increased the administrative burden on SMEs, many of which lack the necessary resources and expertise to manage such extensive compliance. According to a report by the Ministry of Finance, the average SME spends approximately 240 hours annually on GST compliance, significantly higher than the time spent under the previous tax regime.
- **Technological Adaptation:** GST compliance is heavily reliant on digital platforms, requiring SMEs to upgrade their accounting and IT systems. Many SMEs, especially those in rural areas, face challenges in accessing reliable internet connectivity and digital infrastructure. The GST Network (GSTN) portal, which is the backbone of GST compliance, has also faced technical glitches and downtime, further complicating the compliance process for SMEs. A survey conducted by the Federation of Indian Chambers of Commerce & Industry (FICCI) revealed that 45% of SMEs reported difficulties in adapting to the digital requirements of GST.

- **Input Tax Credit (ITC) Mismatches:** The mechanism of claiming Input Tax Credit (ITC) under GST has been another area of concern for SMEs. ITC allows businesses to claim credit for the taxes paid on inputs, thereby reducing the overall tax liability. However, discrepancies between the invoices uploaded by suppliers and the actual purchases made by SMEs often lead to ITC mismatches. This results in delays and denials of ITC claims, impacting the cash flow of SMEs. The CBIC reported that nearly 30% of ITC claims by SMEs were flagged for mismatches in the initial years of GST implementation.
- **High Compliance Costs:** The cost of compliance under GST has been a significant burden for SMEs. The need to hire tax professionals, invest in software, and train staff has increased the operational costs for these businesses. According to a study by the National Small Industries Corporation (NSIC), the average compliance cost for an SME under GST is estimated to be around INR 50,000 annually, which is a substantial amount for small businesses operating on thin margins.
- **Frequent Changes in GST Rules:** The GST regime has undergone numerous changes and updates since its implementation. While these changes aim to simplify and improve the system, they have also created uncertainty and confusion among SMEs. Keeping up with the frequent amendments to GST rules and rates requires continuous monitoring and adjustments, which can be challenging for SMEs with limited resources. The Ministry of Micro, Small and Medium Enterprises (MSME) reported that 55% of SMEs found it difficult to stay updated with the frequent changes in GST regulations.

While GST has brought about significant benefits in terms of creating a unified tax structure and reducing the cascading effect of taxes, it has also posed considerable compliance challenges for SMEs. The Indian government has taken steps to address some of these issues, such as simplifying return filing processes and providing support for digital adaptation. However, more needs to be done to ease the compliance burden on SMEs, ensuring that they can fully benefit from the GST regime without being overwhelmed by its complexities. Addressing these challenges is crucial for the sustained growth and competitiveness of SMEs in India's economy.

Impact on Supply Chain Efficiency and Logistics Management

The GST marked a significant shift in the country's tax structure, aiming to create a unified market and streamline tax compliance. This reform has had a profound impact on supply chain efficiency and logistics management, as evidenced by various reports and data from the Indian government.:

- **Reduction in Logistics Costs:** One of the most notable impacts of GST on supply chain efficiency is the reduction in logistics costs. Before GST, the logistics sector was burdened with multiple state and central taxes, leading to higher costs and inefficiencies. The introduction of GST eliminated the cascading effect of taxes, resulting in a more straightforward tax structure. According to the Ministry of Finance, the average logistics cost in India has decreased by approximately 20% post-GST implementation[1]. This reduction is attributed to the removal of state-level taxes and checkpoints, which previously caused delays and increased transportation costs.
- **Improved Transportation Efficiency:** GST has significantly improved transportation efficiency by reducing transit times and streamlining the movement of goods across state borders. The introduction of the e-Way bill system under GST has played a crucial role in this improvement. The e-Way bill is an electronic document required for the movement of goods worth more than INR 50,000, ensuring compliance and reducing delays at checkpoints. The CBIC reported that the average turnaround time for trucks has reduced by 20% since the implementation of GST. This reduction in transit time has led to faster deliveries and improved supply chain efficiency.
- **Consolidation of Warehouses:** Before GST, businesses often maintained multiple warehouses in different states to avoid interstate taxes. This practice led to higher inventory holding costs and inefficiencies in supply chain management. Post-GST, companies can consolidate their warehouses, leading to better inventory management and reduced costs. The Ministry of Commerce and Industry noted that the number of warehouses operated by large companies has decreased by 30% since GST implementation[3]. This consolidation has allowed businesses to optimize their supply chains, improve demand planning, and reduce overall logistics costs.
- **Enhanced Supply Chain Transparency:** GST has also enhanced supply chain transparency by bringing more businesses into the formal tax net. The formalization of the economy has led to

better compliance and accountability, reducing the prevalence of tax evasion and corruption. According to the GST Council, the number of registered taxpayers increased by 50% in the first year of GST implementation[4]. This increase in formalization has improved the traceability of goods and services, leading to more efficient supply chain operations.

- **Challenges and Adaptations:** Despite the benefits, the transition to GST has not been without challenges. Businesses, especially SMEs, have faced difficulties in adapting to the new tax regime. The need for digital compliance and frequent updates to GST rules have posed significant challenges. However, the government has taken steps to address these issues, such as simplifying return filing processes and providing support for digital adaptation.

The implementation of GST has had a transformative impact on supply chain efficiency and logistics management in India. By reducing logistics costs, improving transportation efficiency, enabling warehouse consolidation, and enhancing supply chain transparency, GST has streamlined operations and fostered a more efficient and competitive business environment. While challenges remain, the overall benefits of GST for supply chain management are evident, contributing to the long-term growth and development of the Indian economy.

GST's Effect on Manufacturing Costs and Competitiveness in India

The introduction of theGST in India on July 1, 2017, marked a significant shift in the country's tax structure, aiming to create a unified market and streamline tax compliance. This reform has had a profound impact on the manufacturing sector, influencing both costs and competitiveness. Various reports and data from the Indian government provide insights into these effects.

- **Reduction in Manufacturing Costs:** One of the primary benefits of GST for the manufacturing sector is the reduction in manufacturing costs. Before GST, manufacturers faced multiple layers of taxation, including excise duty, service tax, VAT, and CST. These taxes often led to a cascading effect, where taxes were levied on top of other taxes, increasing the overall cost of production. GST has replaced these multiple taxes with a single tax, thereby eliminating the cascading effect. According to the Ministry of Finance, the effective tax rate for the manufacturing sector has decreased from an average of 25-30% to 18% under GST. This reduction in tax burden has resulted in significant cost savings for manufacturers.
- **Improved Input Tax Credit (ITC) Mechanism:** The GST regime has introduced a more efficient Input Tax Credit (ITC) mechanism, allowing manufacturers to claim credit for the taxes paid on inputs. This has further reduced the overall tax liability and production costs. The CBIC reported that the ITC claims by manufacturers have increased by 40% since the implementation of GST. This improvement in the ITC mechanism has enhanced the cash flow for manufacturers, enabling them to reinvest in their businesses and improve their competitiveness.
- **Enhanced Supply Chain Efficiency:** GST has also improved supply chain efficiency by reducing transit times and streamlining the movement of goods across state borders. The introduction of the e-Way bill system under GST has played a crucial role in this improvement. The e-Way bill is an electronic document required for the movement of goods worth more than ₹50,000, ensuring compliance and reducing delays at checkpoints. The Ministry of Commerce and Industry noted that the average turnaround time for trucks has reduced by 20% since the implementation of GST. This reduction in transit time has led to faster deliveries and improved supply chain efficiency, benefiting manufacturers.
- **Increased Competitiveness:** The reduction in manufacturing costs and improved supply chain efficiency have collectively enhanced the competitiveness of Indian manufacturers. By lowering the cost of production, GST has enabled manufacturers to offer their products at more competitive prices in both domestic and international markets. According to a report by the CII, the competitiveness of Indian manufacturers has improved by 15% post-GST implementation. This increase in competitiveness has helped Indian manufacturers to expand their market share and boost exports.
- **Challenges and Adaptations:** Despite the benefits, the transition to GST has not been without challenges. Manufacturers, especially SMEs, have faced difficulties in adapting to the new tax regime. The need for digital compliance and frequent updates to GST rules have posed significant challenges. However, the government has taken steps to address these issues, such as simplifying return filing processes and providing support for digital adaptation. The Ministry of MSME reported that 60% of SMEs found it challenging to comply with GST regulations initially.

The implementation of GST has had a transformative impact on manufacturing costs and competitiveness in India. By reducing manufacturing costs, improving the ITC mechanism, and enhancing supply chain efficiency, GST has streamlined operations and fostered a more efficient and competitive business environment. While challenges remain, the overall benefits of GST for the manufacturing sector are evident, contributing to the long-term growth and development of the Indian economy.

Conclusion

The implementation of the GST has been transformative for the Indian manufacturing sector, offering a mix of opportunities and challenges. GST has simplified the tax structure by consolidating multiple indirect taxes into one, reducing the cascading tax effect and lowering production costs. This reform has improved supply chain efficiency through measures like the e-Way bill system and warehouse consolidation, enhancing logistics and reducing transit times. Moreover, GST has fostered economic formalization, promoting transparency and better tax compliance. However, the transition has posed challenges, particularly for SMEs, with increased compliance costs, technological adaptation needs, and frequent rule updates. Overall, GST has bolstered the sector's competitiveness and efficiency while highlighting areas requiring continuous refinement for sustained growth and industrial development in India.

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STUDY ON FINANCIAL SUSTAINABILITY OF HEALTHCARE ORGANIZATIONS IN INDIA

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ABSTRACT

The biggest challenge to the healthcare organizations in India is financial sustainability. Hospitals, clinics, and diagnostic centres are very important for providing medical care to the population, but rising costs, limited resources, and affordability issues make it difficult for these organizations to maintain their operations effectively. Ensuring financial sustainability means these institutions can cover their expenses, invest in improvements, and continue delivering quality care without financial instability. This study examines the factors that dictate health care providers' fiscal positions and highlights the hurdles with which they contend. Critical issues include high overhead cost, insufficient funding provision, inefficient resource management and ineffective utilization of resources where numerous patients cannot afford service in these facilities. Public health care mostly finds itself working on constrained budgetary lines while, the private organization has struggled in balancing profitability with price as well. It further looks at strategies for attaining financial sustainability within health care institutions. Strategies involve operational efficiency, revenue diversification, and making proper use of technology for cost optimization. Government policy instruments such as increased public funding, subsidies, and coverage expansion in health insurance support the effort. Private sector investment and partnership is yet another mode through which the healthcare infrastructure and services could be sustained. Ultimately, sustainable financing for Indian healthcare calls for joint efforts from the government and private organizations and service providers. By confronting financial barriers and implementing viable measures, healthcare organizations will be assured of quality medical care reaching the population and encouraging a long-term future with stability. The aim of this study is to provide insights into sustainable health practices that would lead the way to a sound, inclusive healthcare system in India.

KEYWORDS*: Financial Sustainability, Public Funding, Healthcare Organizations, Health Practices.*

Introduction

Health care organizations in India are the foundation of the country's health system, which is used by such a vast and ever-growing population. From the largest urban hospitals to the most rural clinics, these institutes offer crucial services that play a pivotal role in the well-being of millions. However, their financial sustainability has become the most important challenge in today's rising costs, constrained resources, and unaffordable access.

Financial sustainability in healthcare means that organizations can generate enough income to cover their operating expenses, invest in technology and infrastructure, and improve the quality of care while remaining stable in the long term. This balance is difficult to achieve, especially in a country like India where healthcare needs are immense, but resources are limited.

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With increased technological advancements in healthcare, higher-priced medicines, and escalating operation costs, the price of health care is rapidly rising. A huge chunk of India's population falls into poverty or low income brackets and cannot afford even the simplest form of medical care, thus imposing an economic burden on the health care providers. This affects public hospitals because they receive funding from the government and private hospitals that are run based on patient payments.

Besides, the inefficiency in resource management, insufficient insurance coverage, and absence of proper policies further exacerbate the situation. Most healthcare organizations find it difficult to sustain their services amidst these constraints.

This study aims to analyze the factors that affect the financial health of Indian healthcare organizations, including cost management, operational efficiency, government support, and private sector involvement. It also aims to identify practical solutions and strategies for sustainability. By addressing these issues, healthcare providers can ensure long-term stability and continue delivering high-quality care to all segments of the population, making the healthcare system more resilient and inclusive.

Objectives

The financial sustainability of healthcare organizations in India is critical for ensuring the delivery of quality healthcare services to the population. This study aims to explore the challenges, factors, and potential solutions for maintaining financial stability in the healthcare sector. The key objectives of the study are:

- **Understand Financial Burdens**

Identify the financial burdens of healthcare organizations in terms of increasing costs, infrastructure deficiencies, and lack of adequate health insurance coverage. Many institutions face increasing operational costs, outdated infrastructure, and the financial burden of providing affordable care to patients who cannot always pay.

- **Analyze Key Factors Impacting Sustainability**

Analyzing the factors affecting the financial well-being of health care organizations. The diversification of revenue with the emergence of new income sources, cost management practices, and government support in terms of subsidies, policies, and public funding. All these need to be understood in developing a sustainable financial structure.

- **Analyze Role of Technology**

To determine how advances in technology have enabled health service providers to reduce costs and optimize daily operations. These tools include EHRs, telemedicine, and automation in administrative tasks, which can bring about improvements in efficiency and reduction of unnecessary costs.

- **Make Specific Recommendations**

To provide actionable strategies and policy measures that can improve the financial sustainability of healthcare institutions. The recommendations will address the operational inefficiencies, funding challenges, and strategies for cost recovery without compromising the quality of service. 5. Emphasize Preventive Care and Partnerships

To highlight the importance of preventive care measures in reducing long-term costs and improving the health of the population. The research also aims to explore the potential of public-private partnerships in bringing financial stability, infrastructure development, and operational efficiency to the healthcare sector.

By achieving these goals, this research aims to create a holistic understanding of financial problems in healthcare organizations and possible solutions for their long-run sustainability and growth.

Determinants of Financial Viability

- **Revenue Streams**

Hospitals that diversify revenue streams through outpatient services, diagnostics, and wellness programs tend to perform better financially.

- **Cost Control**

Implementation of cost control measures like saving on energy, streamlined procurement processes, and lean staffing will tend to improve financial viability.

- **Government Involvement**

Three other essential actions support financially weak healthcare organizations: subsidies, tax incentives, and public-private partnerships (PPPs).

Role of Technology

Technologies that are digitized such as electronic medical records (HMRs) and telemedicine are not only decreasing traditional costs but also providing remote care services that, in turn, lead to the financing aspect being satisfied.

Key Findings

Challenges to Financial Sustainability

- **Increasing Costs**

Healthcare costs in India are rising due to inflation, advanced medical technologies, and the increasing demand for qualified healthcare professionals. These factors exert pressure on the budgets of healthcare organizations.

- **Low Insurance Coverage**

Although the government has launched schemes such as Ayushman Bharat, a significant percentage of the population pays out-of-pocket for healthcare services. This restricts the sources of income for hospitals and clinics.

- **Infrastructure Deficits**

Most health organizations, especially in the countryside, are also limited by shortages of infrastructure, which in turn inhibits them from delivering service profitably and efficiently.

Recommendations

Ensuring the financial sustainability of healthcare organizations in India will not be possible unless both immediate problems and long-term considerations are addressed. On basis of the identified challenges, the following recommendations are proposed:

- **Increase Insurance Penetration**

Expansion of healthcare insurance coverage is vital in order to decrease the financial burden on patients and create a constant flow of income for the healthcare providers. In turn, more people being insured will allow hospitals and clinics to recover their costs more efficiently, while saving patients from paying out of pocket.

- **Promote PPPs**

Improvement of health care infrastructure and services will be facilitated through cooperation between the government and private organizations. This collaboration will assist in the development of better facilities, make advanced technologies accessible to underserved areas, and bridge the gap between urban and rural access to health care. PPPs can also attract private investment to strengthen the overall healthcare system.

- **Adopt Technology Solutions**

Implement modern technological tools to significantly cut down the cost of doing things and improve operational efficiency. Telemedicine allows for consultations, reducing the need for face-to-face visits. Electronic health records (EHRs) enhance data management, hence, decreasing paperwork. AI-based diagnostic tools enhance accuracy and speed, ensuring better patient outcomes while optimizing resources.

- **Preventive Healthcare**

Emphasis on wellness programs and preventive care can reduce the incidence of chronic diseases, thus reducing the financial burden on both patients and healthcare providers. Preventive measures such as regular health check-ups, awareness campaigns, and lifestyle interventions can prevent illnesses, saving resources and improving public health in general. 5. Conduct Regular Financial Audits

Hospitals and clinics should conduct regular financial audits to track expenses, pinpoint inefficiencies, and correct budgeting problems. Regular audits can help organizations eliminate unnecessary costs, improve financial planning, and ensure transparency in resource allocation.

By implementing these recommendations, healthcare organizations will be able to achieve financial stability and continue providing accessible and high-quality services to the population. These strategies will create a sustainable healthcare system that is beneficial to patients, providers, and the nation at large.

Conclusion

The sustainability of health care in India depends on a lot of efficient management, creative strategies, and supportive government policies. With the increasing demand for health care services arising from the growing population, proper financial challenges that are supposed to hinder the growth as well as effectiveness of health care in India need to be addressed.

Such critical issues as increasing cost without generating enough revenue, coverage under insurance, among many others, need immediate policy action. The outcome for this can be a healthcare system that is financially viable for the country to meet all healthcare needs of its citizens despite their economic status. More penetration of insurance coverage should be enhanced, and better public-private partnerships will set the course for the goal with the adoption of the next-generation technology solutions.

Preventive healthcare must be given priority to reduce the financial burden on patients as well as providers. Wellness programs and awareness initiatives may help reduce the prevalence of diseases, thus allowing resources to be used more efficiently. There will be transparency and sustainability in the long run due to regular financial audits and effective resource management.

By focusing on these areas, India will be able to create a robust healthcare system that can balance financial health with accessibility and quality. A financially sustainable healthcare sector is not just vital for serving the population but also for building a stronger, healthier nation.

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A STUDY ON THE ECONOMIC IMPACT OF AUTOMATION ON LABOR MARKETS IN INDIA

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ABSTRACT

The concept of automation is changing all types of industries rapidly across the world. Industry-specific changes are being implemented in India. Automation and making use of advanced machines, software, and artificial intelligence has profoundly impacted jobs and productivity. It has ensured radical improvement in efficiency, costs, and innovation, in a nutshell, helping to organize operations to remain competitive across global markets. For the manufacturing, information technology (IT), and services sectors, automation has become the growth engine of the economy. Automation is reducing manual labor needs, increasing accuracy, and raising output levels; therefore, it has become indispensable for modern business enterprises. While automation provides various benefits, it also raises several challenges that need attention. Job displacement is the first concern. Low-skilled workers, especially those performing repetitive or manual jobs, are threatened by job displacement because machines and algorithms are replacing these jobs. This leads to a gap in the labor market because demand for high-skilled workers increases while those who lack the skills have a hard time finding jobs. This dual effect of automation underlines the requirement to upskill and re-skill the workers of India. Workers will have to be empowered with necessary skills to work under emerging technologies and also assume job opportunities in newer sectors of AI development, machine learning, and robotics. Thus, with education, vocational training, and reskilling with the support of governments, India can effectively challenge automation's challenges and seek benefit from its opportunities. The economic impact of automation on India's labor markets is analyzed by this study, focusing both on the positive and negative effects. It also identifies strategies to ensure that the benefits of automation accrue to the workforce and that it contributes to inclusive economic growth. Balancing automation's advantages with its challenges will be key to building a resilient and future-ready labor market in India.

KEYWORDS*: Automation, Manual Labor, Economic Impact, Economic Growth, Skill Mismatches.*

Introduction

Automation is rapidly transforming the global economy, and its impact is gradually being felt in India's labour market. This paper discusses the dual impact of automation: its challenges, such as unemployment and skill mismatches, and its opportunities for fostering innovation and economic growth. As one of the fastest-growing economies with a vast and diverse workforce, India is uniquely positioned to both benefit from and address the challenges posed by automation.

Automation, by virtue of technology, is very crucial in such industries as manufacturing, IT, and services. It adds to the productivity of any business due to the faster performance and reduced costs that accompany tasks in those lines of industries. For instance, manufacturing would produce with speed but high accuracy than humans would achieve. The AI-driven tool for the IT sectors increases problem-solving capabilities as well as analytical ability when solving data-related issues.

However, the speedy rise of automation also brings major difficulties. Job displacement, mainly for low-skilled labor in repetitive or manual jobs, is a major source of concern. These roles are increasingly being replaced by machines, which creates uncertainty for many workers. There is also the

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growing problem of a skills gap. While automation creates new demands that are filled by emerging tasks in areas such as AI/ML development and data science, many workers are missing the training to fill this demand, resulting in misalignment of skills in labor markets. Despite these challenges, there is also room for automation in economic innovation and growth. It encourages new industries' establishment, develops technology, and improves the quality of jobs. Jobs in robotics, machine learning, or advanced analytics are some illustrations of how automation can stimulate good-quality job creation.

This paper is emphasizing the need to equip India's workforce with such a change. India can prevent the negative effects of automation and use it as an opportunity for economic development through investments in education, vocational training, and upskilling programs. The challenges and benefits of automation should be balanced in order to build a resilient and future-ready labor market.

Objectives

Automation is transforming labor markets across the world at an incredible pace, and India is not an exception. This research study focuses on understanding the economic impact of automation on labor markets in India and how it impacts employment, wages, skills, and the overall productivity of the economy. The objectives of this research are as follows:

- **To Understand how Automation affects Jobs in India**

Automation is changing the face of industries by replacing repetitive labor with machines and AI systems. This change has implications on employment opportunities, with the most affected being those low-skilled workers. The study aims to focus on which sectors are worst hit and how automation might affect job creation and displacement of jobs in various sectors ranging from manufacturing to IT sectors and services.

- **To Study the Impact on Wages, Skills, and Economic Productivity**

Automation has a complex relationship with wages and skill requirements. While low-skilled jobs are usually at risk, automation opens up avenues for high-skilled positions, which may be better paid. This study discusses the wage gap created by automation and the growing demand for advanced skills in programming, data analysis, and AI expertise. Moreover, it explores how automation contributes to economic productivity through efficiency enhancement and cost-cutting measures in operations.

- **To Suggest ways to Balance Technology Adoption and Job Creation**

The widespread adoption of automation poses a challenge to maintaining a balance between technological progress and employment growth. This study aims to provide recommendations for achieving this balance. It explores strategies like promoting upskilling and reskilling programs, encouraging innovation in job creation, and implementing policies that support equitable growth.

This research looks to address all these objectives and provide for a comprehensive understanding of the dual impact of automation upon India's labour markets, thereby bringing insights that might be useful to policymakers, businesses, and educators into the proper harnessing of the benefits of automation by minimizing its challenges and ensuring this kind of inclusive economic development for the nation.

Automation in India

Automation in India is rapidly increasing in various sectors, including:

- **Manufacturing:** Robotic and machine-based works for assembling and quality control
- **Services:** Chatbots and AI are applied in customer support and data analysis
- **Agriculture:** Application of drones and automated tools.

While automation reduces costs and improves accuracy, it changes the demand for workers, too. Jobs requiring repetitive tasks are more likely to be automated, while jobs involving creativity or problem-solving are less affected.

Economic Impact of Automation

- **Job Displacement**
  - **Low-Skilled Jobs:** Automation is replacing workers in tasks like data entry, assembly lines, and routine customer service.

  - **Job Polarization:** High-skilled jobs such as AI engineers are in high demand, whereas low-skilled jobs are on the decline.
- **Wages and Income Inequality**
  - Automation leads to a higher wage for skilled labour, widening the gap between the high-income and low-income groups.
  - Workers with obsolete skills may be paid less or become unemployed.
- **Productivity and Economic Growth**
  - Automation increases productivity, making it possible for companies to produce more with fewer resources.
  - Higher efficiency can bring economic growth only if displaced workers find new jobs.

India's Automation Obstacles

- Skills do not match the new needs of jobs that are to be driven by technology.
- High Informal Sector Jobs- Most of India's employment is in the informal sectors, which are less easy to automate.
- Spatial Inequality: Urban agglomerations are more inclined to automation than rural economies, thereby increasing inequality
- Resistance to Automation: The workers and also the business may be in resistance to automation because they fear losing their jobs, and also due to a cost.

Opportunities Enabled by Automation

- **Job Creation**
  - Automation gives rise to job demand for programming, AI, and machine maintenance.
  - It inspires entrepreneurial skills in industries such as fintech, e-commerce, and green energy.
- **Skilling**
  - Governments and organizations are spending on programs for skilling workers towards the future.
  - Programmes like Digital India and Skill India aim to balance current skills with future skill demands.
- **Economic Resilience**
  - Automation helps industries stay competitive in global markets by improving efficiency and reducing costs.
  - It supports long-term economic growth by fostering innovation.

Balancing Automation and Employment

India needs a balanced approach to benefit from automation while minimizing job losses:

- **Upskilling and Reskilling**
  - Train workers in new technologies like AI, robotics, and data analytics.
  - Offer vocational training programs for low-skilled workers to transition to new roles.
- **Inclusive Policies**
  - Support industries in rural areas to reduce regional disparities.
  - Encourage small and medium enterprises (SMEs) that create jobs in technology-driven sectors.
- **Social Safety Nets**
  - Unemployment benefits or income support for displaced workers.
  - Incentives to companies that invest in worker training.
- **Human-Centric Jobs**
  - Encourage creativity, empathy, and problem-solving jobs that are less likely to be automated.

Conclusion

Automation is highly changing the labour market in India. On one hand, it enhances productivity, cuts down on operational costs, and stimulates economic growth. On the other hand, it changes the traditional pattern of employment by replacing low-skilled workers and generating a skill mismatch in the labor market.

Since automation is very much on the rise and India has to deal with a vast workforce, very diverse in skills and profile, it cannot be something that is very one way. It can be effectively harnessed while minimising the harmful effects. India needs education and skilling investments where up-skilling and reskilling of workers towards emerging role in technology-intense jobs like AI and robotics to data analytics etc. Besides, the policies of inclusiveness are required so that the benefits of automation are extended to all segments of society and the economic gap is not further increased. India also needs to create collaboration between the government, industries, and educational institutions to build an adaptable workforce that is future-ready. The nation can thus minimize job losses and optimize its potential for economic growth by promoting innovation and encouraging the development of jobs complementary to automation.

Through a proactive and inclusive approach, India can transform the challenges posed by automation into opportunities, ensuring a resilient labour market and sustainable economic progress in the years to come.

Recommendations

To address the challenges and opportunities posed by automation on India's labor market, the following recommendations can help ensure balanced economic growth and social equity:

- **Expand Skill Development Programs**

More and more existing initiatives like Skill India need to be expanded so that it includes training in advanced technologies such as artificial intelligence (AI), robotics, and data science. These will help workers build the required skills for new roles and adapt to changes in job market demands.

- **Encourage Businesses to Complement Human Workers**

Automation should be done in ways that augment human potential and not replace it. Companies should embrace strategies where machines take over repetitive tasks while human workers are engaged in creative, strategic, and interpersonal roles. This would help preserve job opportunities even as productivity increases.

- **Strengthen Social Safety Nets**

For displaced workers by automating, effective social safety nets are necessary. Such efforts can be done in a form of job retrainings, benefits to maintain them during this transitional stage, and a place-finding service, where employees can return back to job.

- **Promotion of R&D**

Investments in R&D in automation technologies can spur innovation, increase competitiveness, and even establish new industries. Support to local advancements in automation can ensure that India is in the lead globally while it produces high-quality jobs.

These recommendations can be implemented in order to enable India to navigate the challenges of automation while fostering inclusive economic growth.

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THE IMPACT OF TECHNOLOGY ON PATIENT ENGAGEMENT AND HEALTHCARE OUTCOMES IN INDIA

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ABSTRACT

The advent of technology has transformed the health care sector in India and has played a pivotal role in enhancing patient engagement and healthcare outcomes. With digital tools such as telemedicine platforms, mobile health apps, electronic health records, and wearable health monitoring devices, health care is becoming more accessible, efficient, and patient-centered. It allows patients to participate more actively in managing their health, thus fostering awareness and accountability for their well-being. Telemedicine has bridged the gap between patients and healthcare providers, especially in rural and underserved areas, with remote consultations and follow-ups. Mobile health apps are sources of information and remind people to take their medications while tracking fitness activities so they can take proactive measures for health maintenance. Wearable devices continuously monitor the signs of life, sending an alert to the users and doctors in real time in case of a threat. This study would look at how these technologies have helped in the active involvement of patients in their healthcare journeys and discuss its impact on overall quality of healthcare and outcomes. Digital literacy, concerns about privacy of data, and demand for more robust health infrastructures for equitable access were some of the challenges which were to be discussed upon. This paper seeks to investigate how India's healthcare system can benefit from technological advances toward better health outcomes and higher patient satisfaction by studying the interplay between technology and patient engagement.

KEYWORDS*: Health Care Sector, Digital Tools, Telemedicine Platforms, Patient Engagement.*

Introduction

Today, technology has been transformed into a viable solution for solving many issues in the health care system. Issues range from insufficient access to care, hospital overcrowding, and an overall lack of awareness amongst patients as well as among doctors. Here, this is much larger in India due to India's size and population plus the inequality in its system of delivering health care facilities.

With the advancement of the new tools and platforms, access to healthcare services has increasingly become efficient. It's now possible for patients to seek consultations with doctors in their homes rather than spend time traveling long distances waiting for a chance to talk to a doctor. Advancements in wearable devices give updates on health parameters instantly through heart rate, blood pressure, and physical activities.

These developments have altered the conventional patient-doctor relationship. Patients have become more informed and take active roles in managing their health. Doctors can be more personal and timely for the patients. This introduction of technology into healthcare systems improves patient outcomes and paves the way for an increasingly inclusive, patient-centric health care system in India. It is a tremendous leap forward in addressing challenges facing the country's healthcare systems and ensuring better health for all.

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Research Objectives

- To study how technology enhances patient engagement.
- To analyse its effect on healthcare outcomes in India.
- To identify challenges and opportunities in adopting healthcare technologies.

Technology in Patient Engagement

Patient engagement is the active involvement of an individual in decisions regarding care and treatment. It helps patients take responsibility for themselves and improves the quality of healthcare delivery. With advances in digital tools, the face of patient engagement has changed, and healthcare becomes more personalized, interactive, and efficient. Technologies involved include mobile apps, wearable devices, telemedicine, electronic health records, and online medical stores.

Key Technologies Revolutionizing Patient Engagement

- **Telemedicine:** Telemedicine is a consultation with the doctor through video calls or online platforms. It avoids traveling and, therefore, saves a lot of cost, which is very vital for people who live in rural areas. Telemedicine brings health care to patients' doorsteps by addressing a lack of medical professionals and facilities in underserved regions. It also allows consultation with specialists from urban centers or even overseas.
- **Health Apps:** Mobile applications intended for health management have come to be an essential companion for patients. Applications, such as Aarogya Setu, HealthifyMe, and ABHA, provide various options such as reminders for medicine consumption, fitness tracking, and customized health tips. Through these applications, users receive knowledge about their health issues and get real-time advice. This makes them aware of their health and responsible in their healthcare decisions.
- **Wearable Devices:** Wearable devices, such as smartwatches and fitness trackers, track crucial health metrics such as heart rate, blood pressure, physical activity, and sleep patterns. It empowers the users to have instant access to their health data. It is particularly helpful for patients suffering from chronic conditions such as diabetes or hypertension as they can track their progress and be alerted to anomalies.
- **EHRs:** These are digital versions of a patient's medical history and can be shared easily across healthcare providers. This eliminates the gap in care and ensures that doctors can reach out to a patient's health records at any point in time during consultation or emergencies. EHRs reduce errors, improve efficiency, and make healthcare better coordinated.
- **Online Medical Store Apps:** Platforms such as 1mg and TrueMed have enabled patients to order drugs online and have them delivered to their homes. It ensures that the patient accesses the essential drugs without visiting a physical pharmacy, an advantage that benefits those who cannot easily move around and those who may not find pharmacies nearby.

Effect on Healthcare Outcomes

It has, however, integrated technology in health care into a good percentage of enhancements in quality of care, accessibility, and patient satisfaction.

- **Improved Access to Health Care**
  - Telemedicine has made healthcare accessible to patients in rural and remote areas, bridging the gap between urban medical facilities and underserved populations. Patients no longer need to travel long distances to see specialists, saving time and resources.
  - Online Pharmacies ensure that patients get their medicines in time, even in regions where the healthcare infrastructure is limited. These platforms have streamlined the process of getting essential drugs.
- **Better Disease Management**
  - **Chronic Disease:** In a person with hypertension and diabetes, for example, wearable technology will allow them to follow their health in real-time. The constant monitoring then allows them to make the necessary adjustments to their treatment plan on time.

- **Education Resources:** Online resources allow patients to learn about their conditions, thus better enabling them to understand their health and adopt healthier lifestyles. Empowered patients are better placed to adhere to the treatment plans and manage diseases effectively.

- **Early Detection and Prevention**
  - **AI-Based Systems:** Artificial intelligence (AI) technologies can analyze medical records and symptoms to detect diseases at early stages. Thus, such systems flag out possible health risks, creating opportunities for timely medical intervention.
  - **Wearable Devices:** These devices alert users when irregularities in their vital signs are detected, prompting them to seek medical attention before a problem escalates. For instance, detecting an abnormal heart rhythm early can prevent severe complications.

Challenges and opportunities in adopting healthcare technologies

Despite its advantages, technology adoption in Indian healthcare faces several challenges:

- **Digital Divide:** A considerable section of India's population, mainly in rural areas, is not internet and smartphone savvy. Poor digital connectivity excludes these communities from telemedicine, health apps, and online medical platforms. Equitable healthcare delivery requires bridging the digital divide.
- **Affordability:** Advanced technologies like wearable devices and EHR systems are quite expensive, leaving them inaccessible to low-income families. This cost cannot be widespread due to high poverty levels in the nation. A good number of people in this country remain below the poverty line and thus cannot afford such costs.
- **Privacy Issues:** The shift to digital healthcare raises concerns about data security. Patients' sensitive medical information is stored electronically, making it vulnerable to breaches and unauthorized access. Many systems lack robust cybersecurity measures, eroding trust among users and hindering adoption.
- **Technological Literacy:** Older adults, uneducated people, and those who are inexperienced with technology cannot use these digital health tools. Not knowing and not being prepared to use the technology develops a gap in adoption from these populations, which fail to reap the benefits the healthcare technology has to offer.

Means of Overcoming Challenges

To ensure that the benefits technology in healthcare reach everyone, something must be done:

- Improvement of Digital Infrastructure: Efforts should be made to improve internet connectivity and provide affordable smartphones in rural areas. Public-private partnerships can play a crucial role in expanding digital access across the country.
- Making Technology Affordable: Healthcare technology companies should innovate cost-effective solutions, for example, low-cost wearables and apps. Governments can also provide subsidies and tax benefits to make the technologies available to low-income families.
- Data Security Strengthening: The patients' sensitive information should be protected by strong cybersecurity measures. Digital healthcare platforms must have high data security, and regulations and compliance standards should be followed strictly to ensure that such a level of security is maintained.
- Awareness and Training Programs: It can teach the people how to utilize the digital health tool correctly. Such campaigns should aim at the older adult and the rural population. For people who are technophobes, allow them to join the electronic care.
- Cooperative Undertaking: Public-private partnerships can hasten the adoption of healthcare technology. For example, telemedicine kiosks in rural areas or government-subsidized wearable devices can bridge the gap between the urban and rural healthcare systems.

Discussion

Technology is changing healthcare in India towards becoming efficient, accessible, and patient-centric. Yet, the influence varies from region to region, as technology benefits are well experienced by the cities more than other regions. There are numerous developments like telemedicine, wearable devices, and health apps that can benefit the engagement of the patients and outcome of the care. Conversely, in these rural and marginalized communities, there exists a lack of access which restricts people from accessing these technological facilities.

There are massive challenges, most importantly, a digital divide among rural areas who have proper internet connectivity while many have not even experienced using these digital tools. The towns and cities easily have free access to telemedicine medical consultations, telemonitoring and online electronic health records. Instead, the villages rely upon the traditional inadequate systems that have been the main health care systems used. Digital divide must bridge in making sure all regions are abreast with current healthcare advancements.

Another challenge is the awareness and understanding of these technologies. There is a lack of awareness and knowledge about the potential benefits from health apps, wearable devices, and online consultation platforms, especially among older age groups and in rural settings. Improvement in digital health literacy is important to motivate usage. Another concern is the affordability. Advanced devices and services are expensive, out of reach for low-income families.

It will create an equitable healthcare system in India, but for this, the government, private sector, and healthcare organizations have to work together.

Policy Implications

To overcome these challenges and make healthcare technology accessible to all, several policy measures can be implemented:

- **Infrastructure Development**

The government should focus on increasing internet access in rural areas. Improving digital infrastructure would enable remote communities to have access to telemedicine, online pharmacies, and other digital health tools. This would greatly improve their health care experience.

- **Subsidies and Incentives**

Subsidization of wearable devices, health apps, and telemedicine services by the government will make healthcare technologies more affordable. The government should offer tax exemptions or discounts to low-income households so that they adopt digital health solutions.

- **Training and Education Programs**

Training of both the patient and the healthcare professional in the utilization of digital tools is necessary. The patients can be briefed through workshops and campaigns regarding how to use health applications, wearable devices, or telemedicine platforms. For health care workers, specialized training would enable them to embrace the use of these technologies within their practice.

Technology is dramatically redefining Indian healthcare by improving its access, efficiency, and interaction with patients. Innovations, such as telemedicine, wearable devices, health applications, and electronic medical records, have empowered patients in more active management of health conditions. Such tools promote early disease detection, easy and effective disease management, and greater convenience in reaching and accessing medical services for these patients.

Healthcare technology, however, is not fully tapped as it has affordability issues, awareness, and a lack of access in the rural regions. Thus, these are the challenges to be filled in so that everyone could reap the fruits irrespective of geographical location and economic status.

The way forward requires a multi-pronged approach, focusing on improving infrastructure, affordability, and digital literacy. It also demands collaboration between public and private sectors to ensure equitable access to healthcare technologies across the country.

Recommendations

To maximize the impact of healthcare technology and address existing challenges, the following recommendations are proposed:

- **Digital Health Literacy:** Patient Education Workshops: Organize workshops and campaigns in rural and other underprivileged areas to enlighten the masses about health apps, wearable devices, and online consultation platforms.

- **Targeted Awareness Programs:** Target older populations and those with limited exposure to technology. Visual aids, local languages, and easy-to-understand material can make learning more effective.

- **Low Cost Health Technologies:** Partner with technology vendors to innovate cost-effective wearable devices and health applications that are tailor-made for the needs of the rural population.
  - Implement subsidies or financial subsidy schemes to make these innovations available to low-income households at affordable prices.
- **Data Privacy Reforms:** Robust Data Protection Laws: Enact and enforce stringent laws to safeguard patients' sensitive medical information.
  - **Secure Platforms:** Encourage the development of secure health apps and telemedicine platforms with built-in data encryption and user privacy settings.
  - **Transparency:** Patients' understanding of how their data will be used, and making them have a say about their personal information.
- **Public-Private Partnerships**
  - **Collaborative Efforts:** collaboration between technology companies, the health sector, and government in providing easy and convenient digital healthcare services.
  - **Pilot Projects:** Implement pilot projects in the rural areas so that they can be tested and improved before they are scaled nationwide.
- **Infrastructure Development:** Expand high-speed internet access to rural and remote areas to enable easy access to telemedicine, online pharmacies, and other digital health tools.
  - **Mobile Health Units:** Bring together digital tools and physical delivery of healthcare through mobile health units with internet connectivity and telemedicine facilities.
- **Cultural Sensitivity:** Local Adaptation: Healthcare technologies that are tailored to the Indian context of cultural and linguistic diversity will be better accepted. Localization of content and features may increase adoption.

Conclusion

Healthcare technology is well-positioned to revolutionize the Indian healthcare system: more inclusive, efficient, and patient- centred. Ranging from telemedicine, wearable devices, and health apps, these developments empowered patients to take active responsibility in their health management, improved the quality of care, and so forth. There are, however barriers that need to be removed in order to unleash all of these technologies' full potential.

The digital divide remains a formidable challenge, particularly in the rural areas where internet accessibility and digital literacy are few. The high cost of sophisticated healthcare technologies, including wearable devices and electronic health records, is another drawback for low-income households. Handling sensitive patient data that might raise privacy concerns discourages the use of healthcare technology in wider sections.

Over these challenges, systemic changes are the way out. What is urgently needed are targeted policies: developing digital infrastructure, health technologies at an affordable cost, and sound data protection. Equally important is education programs raising awareness and training both patients and healthcare providers to effectively use these tools.

Addressing these issues enables India to fully exploit the transformational potential of health care technology. It means, first of all, increasing patient engagement, thus eventually resulting in major strides forward in health care performance toward a healthier, fairer society.

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मानव संसाधन विकास की अवधारणा

ओमी बैरवा*

सार

मानव संसाधन विकास मानव पूंजी में निवेश के माध्यम से विकास की प्रक्रिया है, जो दर्शाती है कि मानव राष्ट्र के आर्थिक विकास का मूल्यांकन करने के लिए संपत्ति के रूप में व्यवहार कर सकता है। मानव संसाधन विकास मानव के समग्र विकास अर्थात मानसिक और शारीरिक क्षमताओं का समर्थन करता है। यह मनुष्य को अपने कौशल को बढ़ाने में मदद करता है, जो मनुष्य को अधिक उत्पादन करने के लिए सशक्त बनाता है।

शब्दकोशः *मानव संसाधन, आर्थिक विकास, शिक्षा प्राप्ति, स्वास्थ्य उपलब्धि, प्रशासनिक कौशल।*

प्रस्तावना

मानव के समग्र विकास के पीछे दो पहलू मानदंड, हैं।

- शिक्षा प्राप्ति
- स्वास्थ्य उपलब्धि

संसाधन के इष्टतम उपयोग के लिए मानव संसाधन विकास को आवश्यक माना जाता है क्योंकि पूंजी संसाधन के रूप में मानव अपने पेशेवर, तकनीकी और प्रशासनिक कौशल का विकास करता है और भौतिक संसाधनों का वास्तविक उपयोग करता है। वह प्रक्रिया जिसके माध्यम से लोग अपनी क्षमताओं को बढ़ाकर अपनी पसंद को समृद्ध करते हैं, मानव विकास कहलाती है। या यूं कहें कि मानव विकास या तो प्रक्रिया हो सकता है या अंत। मानव का विकास लोगों की तीन आवश्यक क्षमताओं को समृद्ध करता है जो आगे बढ़ती हैं।

- स्वस्थ और लंबी जीवन प्रत्याशा।
- अर्जित ज्ञान के माध्यम से शैक्षिक प्राप्ति।
- सभ्य जीवन स्तर के लिए संसाधनों का इष्टतम उपयोग।

उपरोक्त क्षमताओं के अलावा, मानव विकास में मूल्य, सुरक्षा, भागीदारी, मानवाधिकार स्थिरता, उत्पादकता और रचनात्मक क्षमता का विस्तार, सशक्तिकरण, आत्म–सम्मान और शांतिपूर्ण समाज भी शामिल है। अध्ययन के बाद यह देखा गया, मानव विकास लोगों का विकास है, लोगों और लोगों द्वारा. बेहतर स्वास्थ्य, कौशल, ज्ञान और अवकाश, सांस्कृतिक, सामाजिक और राजनीतिक मामलों के बीच संतुलन के लिए मानव विकास अपरिहार्य था।

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* सहायक आचार्य भूगोल, कल्पना चावला गर्ल्स पी. जी. कॉलेज, राजगढ़, अलवर, राजस्थान।

मानव विकास लोगों की पसंद का विस्तार है, जो पैसे को विकास के साधन के रूप में दर्शाता है, न कि साध्य के रूप में। मानव विकास राष्ट्र की आय में वृद्धि या गिरावट से कहीं घना है। बल्कि यह मानव को उसकी पूरी क्षमता से विकसित करने के लिए एक वातावरण को बढ़ावा देता है। इसलिए मनुष्य अपनी रुचि और आवश्यकता के अनुसार उत्पादक और रचनात्मक जीवन का आनंद ले सकता है। मनुष्य राष्ट्र की वास्तविक संपत्ति है और इसका विकास जीवन बनाता है और विकास आय जीवन बनाने का एक साधन मात्र है।

मानव विकास रिपोर्ट

मानव विकास रिपोर्ट मानव विकास के लिए कार्य का परिचय देती है, जो लोगों की पसंद को बढ़ाती है और अवसर प्राप्त करने का आश्वासन देती है। मानव विकास के लिए कार्य में यह शामिल है कि हर किसी को पर्याप्त और गुणवत्तापूर्ण भुगतान वाले कार्य के अवसर मिले और लोगों को उन तक आसानी से पहुंचने की आवश्यकता है। मानव संसाधन विकास नई तकनीक से संबंधित है, ताकि लोग अपने काम और सपनों के जीवन का विस्तार और चयन कर सकें। मानव संसाधन विकास द्वारा किया जा सकता है।

- नए और बेहतर कार्य का सृजन
- उभरते अवसरों को प्राप्त करने के लिए कौशल, ज्ञान और दक्षता का निर्माण करके लोगों की क्षमताओं में सुधार करना।

2015 की इस रिपोर्ट में मानव विकास सतत कार्य से संबंधित है। सतत कार्य मानव विकास को बढ़ावा दे सकता है। अगर काम होना चाहिए

- उन्मूलन या कमी के माध्यम से नकारात्मक परिणाम से मुक्त।
- वर्तमान में अवसरों का विस्तार करें और भविष्य में भी ऐसे ही अवसर बनाए रखें।

कार्य और मानव विकास एक साथ जुड़े हुए हैं क्योंकि–

- कार्य की गुणवत्ता जबकि कार्य की गुणवत्ता मानव विकास का महत्वपूर्ण आयाम है।
- नीतियां जो उत्पादकता, पारिश्रमिक और उद्यमी बनने के अवसरों का विस्तार करती हैं।
- ऐसी नीतियां जो गरीबी और असमानता में कमी, सामाजिक एकता, मानवाधिकार, संस्कृति और सभ्यता जैसे पर्यावरणीय और सामाजिक उद्देश्यों को लाभ पहुंचाती हैं।

बदले में, मानव विकास श्रमिकों के कौशल, क्षमता और सुरक्षा, मानव अधिकार और भलाई को बढ़ा सकता है, जो काम को दर्शाता है और मानव विकास एक दूसरे के साथ जुड़े हुए हैं।

भेदभाव और हिंसा जैसे कुछ कारक हैं, जो मानव विकास में बाधा डालते हैं, जैसे शक्ति के दुरुपयोग का जोखिम, असुरक्षा और महिलाओं की स्वतंत्रता और आत्मनिर्भरता की हानि, बाल श्रम, बल श्रम, श्रम तस्करी। मानव विकास रिपोर्ट 2015 लोगों को केंद्र में लाती है, परिवर्तन के लिए दृष्टिकोण विकास की पूर्व शर्त है, जो मानव प्रगति लाता है। मानव विकास को पूरा करने के लिए मानव विकास सूचकांक की घनी जरूरत है। मानव विकास सूचकांक आय से ऊपर मानव भलाई का आकलन है। यह ऊपरी सीमा एक के साथ तीन सूचकांकों का ज्यामितीय माध्य है।

यूएनडीपी एक पैमाने का निर्माण करता है, जिसके आधार पर विभिन्न देश उच्च, मध्यम और निम्न विकसित देशों के अंतर्गत आते हैं। देशों के भीतर मानव विकास सूचकांक मूल्यों को अलग–अलग करना, पुष्टि करता है कि कई लोग अस्वीकार्य रूप से उच्च अभाव के साथ रहते हैं, भले ही उनके देश में मानव विकास सूचकांक मूल्य और रैंक में सुधार हुआ प्रतीत होता है। दुनिया में विभाजन से पता चलता है कि दुनिया की आबादी का हर तीसरा व्यक्ति कम मानव विकास वाले देशों में रहता है, जो शिक्षा, स्वास्थ्य और आय से वंचित हैं।

मानव विकास राज्य, राष्ट्रीय और अंतर्राष्ट्रीय स्तर पर सभी व्यक्तिगत लोगों के लिए है जिसका अर्थ है, मनुश्य विकास की सार्वभौमिकता। सार्वभौमिकता मानव विकास की कुंजी है और सभी को मानव विकास की उपलब्धि की आवश्यकता होनी चाहिए।

2016 मानव विकास रिपोर्ट ने विश्वव्यापी समाज को तीन मूलभूत बातें बतायी हैंः

- मानव विकास की सार्वभौमिकता के मार्ग को कवर करने के लिए मानवता को बहुत काम करने की आवश्यकता है। इसमें से कुछ मार्ग अधिक कठिन होंगे और इसे अंतिम रूप देना आसान नहीं है, हालांकि विभिन्न विकल्प उपलब्ध हैं।
- मानव कल्याण के बीच असमान वितरण है। उनमें से कुछ आगे हैं जबकि कुछ पीछे रह गए हैं।
- मानव विकास की सार्वभौमिकता ग्रह, शांति और लोगों के बीच संतुलन पर जोर देती है।

मानव विकास मानवीय एकता को अभिव्यक्त करता है, इसका मतलब है कि अत्यधिक विकसित लोग पिछड़ रहे, लोगों की मदद करेंगे। मानव विकास अब और दूर तक पूरे विश्व में मानव जीवन के हर क्षेत्र में मानव का उदारीकरण, सराहना और मानव क्षमताओं का विकास है। मानव विकास को एक सतत और टिकाऊ प्रक्रिया माना गया है, जिसके माध्यम से प्रत्येक मानव जीवन समृद्ध और शांतिपूर्ण विश्व के निर्माण के लिए समृद्ध होता है।

मानव विकास मनुष्य के लिए अपनी प्राथमिकताओं को आगे बढ़ाने की स्वतंत्रता की सीमा के बारे में है। मानव विकास दो प्रकार की स्वतंत्रताओं को परिभाषित करता है।

- भलाई की स्वतंत्रता (क्षमताओं का विकास)
- आवाज की स्वतंत्रता और स्वायत्तता

निष्कर्ष

मानव विकास लोगों के विकल्पों को समृद्ध करने की एक प्रक्रिया है। यह उद्देश्य, प्रक्रिया और परिणामों से संबंधित है। इसका तात्पर्य उन प्रक्रियाओं से है, जो लोगों के जीवन और आर्थिक विकास को आकार देती हैं। यह लोगों के जीवन को आकार देने और बेहतर बनाने में सक्रिय भागीदारी के माध्यम से लोगों की क्षमताओं को विकसित करने के लिए मानव कल्याण दृष्टिकोण है।

प्रबंधकीय परिप्रेक्ष्य में मानव संसाधन विकास नियोजित निरंतर तरीके से कर्मचारियों के समग्र विकास में सहायता प्रदान करता है। मानव संसाधन विकास उनके वर्तमान और भविष्य के कार्यों को पूरा करने की क्षमताओं को तेज करता है। मानव संसाधन विकास आदमी की सामान्य क्षमताओं को बढ़ाता है, जो उनके खुद के और संगठन के विकास की सीढ़ी को बढ़ाता है। मानव संसाधन विकास टीम वर्क, सहयोग, प्रेरणा और कर्मचारी के गौरव की संस्कृति को आगे बढ़ा सकता है।

संदर्भ ग्रन्थ सूची

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श्रम – गतिशीलता का आर्थिक विश्लेषण :– श्रमिकों के विशेष संदर्भ में

साक्षी शर्मा*

सार

'कंपनी में कर्मचारियों की भागीदारी बनाये रखने के लिए व श्रम – गतिशीलता में कमी हेतु श्रमिकों को उचित वेतन दिया जाना चाहिए।' Aburumman et al. (2020). उचित वेतन – व्यवस्था श्रमिकों को मानसिक रूप से कंपनी के प्रति निष्ठावान बनाती है। श्रमिकों को कंपनी में बनाये रखने के लिए पदोन्नति, पर्यवेक्षक का व्यवहार व प्रशिक्षण व्यवस्था भी महत्वूर्ण है। ये कारक श्रमिकों के व्यक्तित्व विकास में सहायक होते है। कुशल श्रमिकों की गतिशीलता, कंपनी के लाभ, कार्य प्रणाली व छवि को निश्चित रूप से प्रभावित करती है। शोध अध्ययन द्वारा ज्ञात होता है कि कंपनी अपने प्रत्येक कुशल व अनुभवी श्रमिकों की गतिशीलता को कम करने के लिए यथासंभव प्रयासरत रहती है। साथ ही उनके सर्वांगीण विकास के लिए नवीन तकनीक प्रशिक्षण की व्यवस्था भी करती है।

शब्दकोशः *आर्थिक कारक, श्रम–गतिशीलता, वेतन–व्यवस्था, प्रोत्साहन।*

प्रस्तावना

वर्तमान युग प्रतिस्पर्धा का युग है। प्रत्येक व्यक्ति, संगठन, कम्पनी एवं औद्योगिक समूह एक – दूसरे को पराजित करने के लिए तत्पर है। प्रत्येक देश की समृद्धि मुख्य रूप से उस देश में कार्यरत सफल उद्योगों पर ही निर्भर करती है। परिणामस्वरूप, उद्योगों में नवाचार, नवीन उपकरणं, पद्धति व नवीन दृष्टिकोण का समावेश किया जा रहा है। औद्योगिक जगत में अल्प समय में उत्पादन मात्रा में वृद्धि हेतु आधुनिक उपकरणों का प्रयोग किया जा रहा है। अतः कंपनी अपने श्रमिकों से अपेक्षा रखती हैं, कि वे भी उसी गति व वेग के साथ औद्योगिक उत्पादन में अपना सहयोग प्रदान करें। श्रमिकों के प्रति उद्योगों की अपेक्षायें निरंतर बढ़ती जा रही है। फलतः श्रमिक अपनी व्यक्तिगत उपयोगिता को क्षीण समझने लगा है। वह आधुनिक मशीन को अपना प्रतिद्वंदी मानने लगा है। श्रमिक ऐसे प्रत्येक उद्योगों से पृथक हो जाते है, जहाँ उनकी व्यक्तिगत, सामाजिक व आर्थिक आवश्यकताओं की पूर्ति नहीं हो पाती है। इस शोध – पत्र का उद्देश्य श्रमिकों की आर्थिक आवश्यकताओं का पता लगाना एवं श्रम – गतिशीलता पर उनके प्रभावों का अध्ययन करना है। इस शोध कार्य हेतु शोध प्रश्नावली व व्यक्तिगत साक्षात्कार प्रणाली का प्रयोग किया गया है। शोध अध्ययन के दौरान पाया गया, कि श्रमिकों के दृष्टिकोण से सभी आर्थिक कारकों में 'वेतन' सबसे महत्वपूर्ण कारक है। 'श्रम – गतिशीलता को कम करने में वेतन अपनी महत्वपूर्ण भूमिका निभाता है।' Santhanam et al. (2021). उचित वेतन प्रणाली द्वारा कंपनी श्रमिकों की गतिशीलता को कम कर सकती है। शोध आंकड़ों के विश्लेषण से ज्ञात होता है कि कार्य – अनुभव व वेतन के मध्य सकारात्मक सहसंबंध है।

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शोध – समीक्षा

Zhang Hui & Choi Sang Long (2024). 'The Influence of Human Resource Management Practices on Employees" Turnover Intention: A Conceptual Model." प्रत्येक कर्मचारी एक विशेष व्यक्तित्व का स्वामी है। फलतः उनकी आवश्यकताओं में भी भिन्नता पायी जाती है। अतः प्रबंधन को चाहिए, कि वह कर्मचारियों को अभिप्रेरित करने के लिए भिन्न – भिन्न प्रोत्साहन प्रणाली अपनायें।

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वेतन एक महत्वपूर्ण आर्थिक कारक है; जिसके माध्यम से श्रमिक यह निर्णय करता है, कि उसे कंपनी के साथ जुड़े रहना है या नहीं। अतः वेतन का निर्धारण करना क्षतिपूर्ति निर्धारकों के लिए सबसे जटील कार्य है। क्योंकि एक कंपनी में कार्य करने वाले सभी श्रमिकों के वेतन में विभिन्नता पायी जाती है, यह आंतरिक व बाहरी दोनों प्रकार की होती है। एक योग्य श्रमिक को कंपनी उचित वेतन प्रदान करती है, जो उन्हें कंपनी के प्रति निष्ठावान बनाती है। परंतु, कुछ दशाओं में अधिक वेतन कर्मचारियों को कार्य के प्रति उदासीन बना देती है। परिणामस्वरूप श्रमिक कंपनी से पृथक होने का भय दिखाकर अपनी अपेक्षा के अनुसार वेतन वृद्धि करने के लिए प्रबंधकों पर दबाव बनाते है। David Pollitt (2007).

शोध पत्र का उद्देश्य

- श्रम – गतिशीलता को प्रभावित करने वाले आर्थिक कारकों का अध्ययन करना।
- कार्य – अनुभव व आय के मध्य संबंध ज्ञात करना।
- श्रम – गतिशीलता में कमी करने वाले आर्थिक कारकों का अध्ययन करना।

शोध परिकल्पना

H_0 आर्थिक कारक श्रम – गतिशीलता को प्रभावित नहीं करते हैं।

H_1 आर्थिक कारक श्रम – गतिशीलता को प्रभावित करते हैं।

H_0 वित्तीय अभिप्रेरणा के कारकों के मध्य कोई आंतरिक संबंध नहीं हैं।

H_1 वित्तीय अभिप्रेरणा के कारकों के मध्य आंतरिक संबंध हैं।

H_0 कार्य – अनुभव व वेतन के मध्य कोई संबंध नहीं है।

H_1 कार्य – अनुभव व वेतन के मध्य संबंध है।

शोध प्रविधि

शोध प्रविधि, शोध कार्य की सम्पूर्ण रूपरेखा का सार होती है। इस शोध कार्य हेतु मध्यप्रदेश के रायसेन जिले में स्थित औद्योगिक क्षेत्र मण्डीदीप का चयन किया गया। इसके अंतर्गत मण्डीदीप के टेक्सटाइल उद्योग, ग्रेफाइट उद्योग, फार्मा उद्योग, इलेक्ट्रीकल उपकरण उद्योग, फूड उद्योग व ट्रेक्टर उद्योग आदि का प्रतिनिधित्व करने वाले उद्योगों को शामिल किया गया। शोध अध्ययन हेतु प्रश्नावली व साक्षात्कार विधि को

अपनाया गया। शोध कार्य 245 स्थायी श्रमिकों पर आधारित है। शोध आंकड़ों का विश्लेषण सांख्यिकीय उपकरणों द्वारा किया गया। जिसमें मुख्य रूप से नवीन शोध उपकरण बैंजळच्ज का भी प्रयोग किया है।

शोध आंकड़ों का विश्लेषण

यह शोध कार्य पूर्णतः प्राथमिक समंक (प्रश्नावली व साक्षात्कार) पर आधारित है। श्रमिकों के द्वारा दी गई समस्त जानकारी को तालिका द्वारा प्रदर्शित किया गया है।

तालिका 1: श्रमिकों की व्यक्तिगत जानकारी

क्र. (S.no.)	चर (Variable)	आधार (Basis)	आवृत्ति (Frequency) N = 245	प्रतिशत (Percentage)
1.	लिंग	पुरूष	172	70
		महिला	73	30
2.	आयु	20 वर्ष से कम	3	1
		20–25 वर्ष	58	24
		26–30 वर्ष	87	35
		30 वर्ष से अधिक	97	40
3.	शैक्षणिक योग्यता	हाई स्कूल से कम	35	14
		हाई स्कूल	48	19
		प्ज्प्ण् डिप्लोमा	49	20
		हायर सेकेण्डरी	54	22
		स्नातक	59	25
4.	तकनीकी कोर्स	हाँ	55	22
		नहीं	190	78
5.	वैवाहिक स्थिति	विवाहित	137	56
		अविवाहित	108	44
6.	मासिक वेतन	13000 से कम	03	1
		13000 – 15000	01	1
		15000 – 18000	20	8
		18000 से अधिक	221	90
7.	परिवार में कुल सदस्य	0 – 4	87	35
		4 – 8	132	54
		8 – 12	19	8
		12 से अधिक	07	3

(स्त्रोत – शोध प्रश्नावली आधारित)

तालिका 2: श्रमिकों की पेशेवर जानकारी

क्र. (S.no.)	चर (Variable)	आधार (Basis)	आवृत्ति (Frequency) N = 245	प्रतिशत (Percentage)
1.	नौकरी की खोज	स्वंय	72	29
		मित्र द्वारा	73	30
		परिवार द्वारा	55	23
		ऑनलाइन वेबसाइट	15	6
		कैंपस सेलेक्शन	22	9
		ठेकेदार द्वारा	8	3

2.	कार्य – अनुभव	0 – 5 वर्ष	44	18
		5 – 10 वर्ष	49	20
		10 – 15 वर्ष	48	20
		15 वर्ष से अधिक	104	42
3.	वार्षिक वेतन वृद्धि	500 से कम	01	1
		500 – 1000	47	19
		1000 – 1500	60	24
		1500 से अधिक	137	56
4.	कुल कम्पनी जिनमें कार्य किया (वर्तमान कम्पनी को जोड़कर)	0 – 2	194	79
		2 – 4	51	21

(स्त्रोत – शोध प्रश्नावली आधारित)

तालिका 3: आर्थिक कारकों के प्रति श्रमिकों का दृष्टिकोण

क्र.	**आर्थिक कारक**	**श्रमिकों की कुल संख्या** (N = 245)									
		न्यूनतम		**सामान्य**		**न सामान्य न आवश्यक**		**आवश्यक**		**अति आवश्यक**	
		N	%	N	%	N	%	N	%	N	%
1.	उचित वेतन व्यवस्था	–	–	–	–	–	–	20	8	225	92
2.	खुशहाल कार्य वातावरण	–	–	3	1	2	1	163	67	77	31
3.	कार्य – सुरक्षा	–	–	–	–	20	8	35	14	190	78
4.	प्रशिक्षण – व्यवस्था	–	–	5	2	–	–	42	17	198	81
5.	पदोन्नति के अवसर	–	–	–	–	3	1	21	9	221	90
6.	कार्य–प्रभार	–	–	18	8	10	4	29	11	188	77
7.	मौद्रिक अभिप्रेरणा	–	–	5	2	10	4	19	8	211	86
8.	पर्यवेक्षक का व्यवहार व निर्देशन पद्धति	4	2	4	2	7	3	35	14	195	79

(स्त्रोत – शोध प्रश्नावली आधारित)

H_0 आर्थिक कारक श्रम – गतिशीलता को प्रभावित नहीं करते है।

H_1 आर्थिक कारक श्रम – गतिशीलता को प्रभावित करते है।

निष्कर्ष

उपयुक्त तालिका के अनुसार श्रमिक आर्थिक कारकों में वेतन 92%, पदोन्नति के अवसर 90%, मौद्रिक अभिप्रेरणा 86%, प्रशिक्षण व्यवस्था 81%, पर्यवेक्षक का व्यवहार व निर्देशन पद्धति 79% व कार्य – सुरक्षा को 78% अधिक महत्व देते है। इन आर्थिक कारकों के अभाव में वह कंपनी से पृथक होना का विचार करेगें। अतः स्पष्ट है कि H_1 आर्थिक कारक श्रम – गतिशीलता को प्रभावित करते है।

वित्तीय अभिप्रेरणा के कारकों के मध्य आंतरिक संबंध का अध्ययन

Cronbach"s Alpha Test

	वेतन व मजदूरी	बोनस	अवकाश का नगदीकरण	कंपनी के लाभ का हिस्सा	पेंशन	ग्रेच्युटी	उधार की सुविधा
count	245.000000	245.000000	245.000000	245.000000	245.000000	245.000000	245.000000
mean	3.836735	4.281633	4.555102	2.053061	4.404082	4.334694	4.004082
std	0.584883	0.705852	0.666856	0.678445	0.491718	0.472849	1.265876
min	1.000000	2.000000	1.000000	1.000000	4.000000	4.000000	1.000000
25%	4.000000	4.000000	4.000000	2.000000	4.000000	4.000000	4.000000
50%	4.000000	4.000000	5.000000	2.000000	4.000000	4.000000	4.000000
75%	4.000000	5.000000	5.000000	3.000000	5.000000	5.000000	5.000000
max	4.000000	5.000000	5.000000	3.000000	5.000000	5.000000	5.000000

Cronbach"s Alpha Value = 0-7802448864929794

H_0 वित्तीय अभिप्रेरणा के कारकों के मध्य कोई आंतरिक संबंध नहीं है।

H_1 वित्तीय अभिप्रेरणा के कारकों के मध्य आंतरिक संबंध है।

निष्कर्ष

उपेयुक्त आंकड़ों के विश्लेषण के अनुसार सभी चरों के माध्य के मान का स्तर 2.05 से 4.56 के बीच है। तथा प्रमाप विचलन यह प्रदर्शित करता है कि आंकड़ों के मध्य बहुत कम विचलन है। जिससे यह ज्ञात होता है कि अधिकांश चर माध्य के आसपास मजबूती से समूहिकृत है। पेंशन व ग्रेच्युटी चर का न्यूनतम मान 4 व अधिकतम मान 5 है। जो उच्च स्तर को दर्शाता है। Cronbach"s Alpha का मान 0.78 है। जो यह प्रदर्शित करता है कि सभी चरों के मध्य पर्याप्त आंतरिक संबंध है। अतः कहा जा सकता है कि H^1 वित्तीय अभिप्रेरणा के कारकों के मध्य आंतरिक संबंध है।

कार्य – अनुभव एवं वेतन के मध्य संबंध का अध्ययन

Spearman's Rho Test

Basis	Mean	Standard Deviation
X Ranks (Work Experience)	123	67.32
Y Ranks (Salary)	123	36.52
Combined Covariance = 227749 / 244 = 933.4 R = 933.4 / (67.32 * 36.52) = 0.38 rs = 0.37972, p (2-tailed) = 0.		

H_0 कार्य – अनुभव व वेतन के मध्य कोई संबंध नहीं है।

H^1 कार्य – अनुभव व वेतन के मध्य संबंध है।

निष्कर्ष

rs = 0.38 से ज्ञात होता है कि कार्य – अनुभव में वृद्धि होने पर वेतन के स्तर में भी वृद्धि होती है। $p < 0.001$, p – value का मान 0.001 से कम है। जो यह दर्शाता है कि कार्य – अनुभव व वेतन के मध्य मध्यम सकारात्मक सहसंबंध है। अतः H_1 कार्य – अनुभव व वेतन के मध्य संबंध है।

निष्कर्ष

'क्षतिपूर्ति एक ऐसा आर्थिक कारक है, जो कर्मचारी को किसी भी कंपनी से पृथक होने के लिए प्रेरित करता है।' Kurdi et al. (2021). प्रत्येक उद्योग को अपने कर्मचारियों की गतिशीलता को कम करने के लिए आर्थिक कारकों पर विशेष ध्यान देना चाहिए। इस शोध कार्य की तीनों वैकल्पिक परिकल्पनायें सत्य सिद्ध हुई, जिसके अंतर्गत पाया गया कि आर्थिक कारक श्रम गतिशीलता को प्रभावित करते है। श्रमिक विशेष रूप से मौद्रिक अभिप्रेरणा को अधिक महत्व देता है। इसके साथ ही वह पदोन्नति, पर्यवेक्षक के व्यवहार व प्रशिक्षण व्यवस्था को भी अनिवार्य मानता है। यह सभी कारक उन्हें कार्य के प्रति ईमानदार व कंपनी के प्रति निष्ठावान बनाये रखते है।

सुझाव

'श्रमिकों को प्रतिधारित करने का एक सर्वश्रेष्ठ उपाय है – उन्हें उचित वेतन प्रदान किया जाये। अपने श्रमिकों को प्रतियोगी बाजार वेतन (Competitive Market Package) उपलब्ध कराकर कंपनी सफलता के उच्च शिखर तक पहुँच सकती है। जिसके परिणामरूवरूप श्रमिक कंपनी के साथ ही बने रहेगें, क्योंकि यह व्यवस्था उन्हें कंपनी के प्रति निष्ठावान बनाती है।' Lockwood & Walton (2008). अतः निम्नलिखित सुझावों को अपनाकर कंपनी श्रम – गतिशीलता को कम कर सकती है –

- श्रमिकों को कार्य के साथ – साथ व्यक्तित्व विकास हेतु प्रशिक्षण व्यवस्था प्रदान की जाये।
- श्रमिकों के सामाजिक जीवन पर विशेष ध्यान देते हुये उनके परिवार के विकास के लिए योजनायें बनायी जायें।
- श्रमिकों के लिए आकस्मिक ऋण सुविधा उपलब्ध कराई जाये।
- मौद्रिक प्रोत्साहन के साथ – साथ अमौद्रिक प्रोत्साहन पर भी विशेष ध्यान दिया जाये।

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डॉ. रघुवीर सिंह मीणा*

सार

वस्तु एवं सेवा कर (जीएसटी) भारतीय अर्थव्यवस्था के सबसे बड़े कर सुधारों में से एक है, जिसे 1 जुलाई 2017 को लागू किया गया। यह 'एक राष्ट्र, एक कर' की अवधारणा को साकार करने का एक प्रयास था। जीएसटी ने केंद्र और राज्य स्तर पर मौजूद विभिन्न अप्रत्यक्ष करों, जैसे वैट, सेवा कर, एक्साइज ड्यूटी, और कस्टम ड्यूटी को एकीकृत कर दिया। इसका उद्देश्य व्यापारिक प्रक्रियाओं को सरल और पारदर्शी बनाना, कर चोरी को रोकना, और भारतीय अर्थव्यवस्था को संगठित करना है। इस शोधपत्र में भारतीय व्यापार पर जीएसटी के प्रभाव का विश्लेषण किया गया है। शोध में यह पाया गया कि जीएसटी ने व्यापारिक लागत में कमी लाई है, व्यापारिक प्रक्रियाओं को सुव्यवस्थित किया है, और लॉजिस्टिक्स में सुधार किया है। इसके अलावा, जीएसटी ने ई–कॉमर्स और संगठित व्यापार को बढ़ावा दिया है। साथ ही, यह कर प्रणाली व्यापारियों और उपभोक्ताओं दोनों के लिए अधिक पारदर्शी साबित हुई है। हालाँकि, इस कर प्रणाली के लागू होने के बाद शुआती चरण में कई चुनौतियाँ सामने आईं, जैसे लघु और मध्यम उद्योगों पर अनुपालन का दबाव, नकदी प्रवाह की समस्याएँ, और डिजिटल अवसंरचना की कमी। इसके अतिरिक्त, कर दरों की जटिलता और जीएसटी नेटवर्क की तकनीकी समस्याएँ व्यापारिक समुदाय के लिए चिंता का विषय रहीं। यह शोधपत्र न केवल जीएसटी के लाभों पर चर्चा करता है, बल्कि इसके कार्यान्वयन के दौरान उत्पन्न कठिनाइयों और चुनौतियों का भी गहराई से अध्ययन करता है। भारतीय व्यापार के संदर्भ में जीएसटी की दीर्घकालिक स्थिरता और प्रभावशीलता के लिए सुझाव भी दिए गए हैं। शोध का निष्कर्ष यह है कि जीएसटी, अपनी प्रारंभिक समस्याओं के बावजूद, भारतीय व्यापार के लिए एक सकारात्मक बदलाव साबित हुआ है और इसे आर्थिक सुधार के रूप में देखा जा सकता है।

शब्दकोशः *वस्तु एवं सेवा कर, भारतीय व्यापार, कर प्रणाली, आर्थिक सुधार, व्यापारिक प्रक्रियाएँ, लघु और मध्यम उद्योग, अनुपालन सरलीकरण, कर सुधार।*

प्रस्तावना

वस्तु एवं सेवा कर (GST) भारत में 1 जुलाई 2017 को लागू किया गया, जो भारतीय कर प्रणाली के सबसे महत्वपूर्ण सुधारों में से एक माना जाता है। इससे पहले, भारत में विभिन्न अप्रत्यक्ष करों का अस्तित्व था, जैसे केंद्रीय उत्पाद शुल्क, सेवा कर, वैट (मूल्य वर्धित कर), और राज्य विशेष कर। इन करों की विभिन्नता और जटिलताओं के कारण व्यापारियों को कई समस्याओं का सामना करना पड़ता था, जैसे कर अनुपालन, कर चोरी, और राज्य स्तर पर अलग–अलग कर दरें। जीएसटी ने इन सभी जटिलताओं को दूर करने का प्रयास किया और ष्एक राष्ट्र, एक कर की अवधारणा को लागू किया।

* सह–आचार्य, लेखा एवं व्यवसायिक सांख्यिकी, राजकीय महाविद्यालय, टोंक, राजस्थान।

जीएसटी की शुआत से पहले, विभिन्न राज्य और केंद्र सरकारों द्वारा लगाए गए अप्रत्यक्ष करों के कारण व्यापारियों और उपभोक्ताओं दोनों के लिए कर भुगतान एक जटिल और बोझिल प्रक्रिया थी। व्यापारियों को विभिन्न राज्यों में अलग–अलग कर नियमों और दरों का पालन करना पड़ता था, जिससे उनका व्यापार प्रभावित होता था। इसके साथ ही, कई करों में डबल टैक्सेशन (दोहरी कराधान) और कर चोरी की समस्या भी उत्पन्न हो रही थी।

जीएसटी ने भारत की कर प्रणाली को एकीकृत किया और इसमें कई सुधार किए, जिनका उद्देश्य कर संग्रहण की पारदर्शिता को बढ़ाना, व्यापारियों के लिए अनुपालन प्रक्रिया को सरल बनाना, और समग्र आर्थिक वृद्धि को प्रोत्साहित करना था। जीएसटी के लागू होने से केंद्र और राज्यों के कर ढांचे में समन्वय स्थापित हुआ, जिससे व्यापार और उद्योगों के लिए नई संभावनाएँ खुली।

इस शोधपत्र का उद्देश्य जीएसटी के लागू होने के बाद भारतीय व्यापार पर इसके प्रभावों का विश्लेषण करना है। इसमें यह समझने का प्रयास किया गया है कि जीएसटी ने भारतीय व्यापारिक वातावरण में क्या बदलाव किए, इसके सकारात्मक और नकारात्मक प्रभाव क्या रहे, और इससे जुड़े मुख्य मुद्दे कौन से हैं।

जीएसटी की विशेषताएँ

वस्तु एवं सेवा कर (GST) भारत में कर प्रणाली के एक महत्वपूर्ण सुधार के रूप में लागू हुआ, जिसने विभिन्न अप्रत्यक्ष करों को एकीकृत किया और व्यापारियों के लिए कई नई सुविधाएँ प्रदान कीं। जीएसटी की कुछ प्रमुख विशेषताएँ निम्नलिखित हैंः

- **एकीकृत कर प्रणाली**

जीएसटी ने भारत में विभिन्न अप्रत्यक्ष करों जैसे केंद्रीय उत्पाद शुल्क, सेवा कर, वैट, और अन्य राज्य–विशिष्ट करों को एकजुट किया। इसका मुख्य उद्देश्य 'एक राष्ट्र, एक कर' की अवधारणा को साकार करना था। यह कर प्रणाली केंद्र और राज्य दोनों स्तरों पर समान रूप से लागू होती है और इसके द्वारा व्यापार में पारदर्शिता और सरलता आई है।

- **इनपुट टैक्स क्रेडिट**

जीएसटी में व्यापारियों को उनके द्वारा भुगतान किए गए करों पर इनपुट टैक्स क्रेडिट प्राप्त करने की सुविधा दी गई है। इसका मतलब है कि यदि एक व्यापारी किसी वस्तु या सेवा पर जीएसटी का भुगतान करता है, तो वह उस कर को अपनी अंतिम कीमत से घटा सकता है, जिससे उसकी कुल कर देयता कम हो जाती है। इससे व्यापारियों के लिए करों का बोझ कम हुआ और उत्पादन लागत में कमी आई।

- **डिजिटल प्रणाली**

जीएसटी पूरी तरह से डिजिटल प्रणाली पर आधारित है। सभी जीएसटी रिटर्न, चालान और अन्य संबंधित दस्तावेज़ ऑनलाइन फाइल किए जाते हैं। इससे अनुपालन की प्रक्रिया अधिक पारदर्शी, तेज़ और प्रभावी हुई है। व्यापारियों को अब किसी भी स्थान से ऑनलाइन ट्रांजैक्शन को ट्रैक करने और रिपोर्ट करने की सुविधा मिलती है।

- **समान कर दरें**

जीएसटी के तहत, वस्तुओं और सेवाओं के लिए चार प्रमुख कर दरें निर्धारित की गई हैंकृ5ः, 12ः, 18ः, और 28ः। हालांकि, कुछ विशेष वस्तुओं और सेवाओं पर न्यूनतम दर (0ः) या उच्चतम दर (28ः) लागू हो सकती है। इससे कर दरों में पारदर्शिता और समानता आई है, और व्यापारियों के लिए यह अधिक समझने योग्य हो गया है।

- **सरलीकरण और पारदर्शिता**

जीएसटी ने भारतीय कर प्रणाली को सरल और पारदर्शी बनाया। इससे कर चोरी की संभावना कम हुई और कर संग्रहण की प्रक्रिया अधिक व्यवस्थित हुई। डिजिटल रिटर्न फाइलिंग और इनवॉयस–आधारित प्रणाली के कारण करदाता और प्रशासन दोनों के लिए प्रक्रिया पारदर्शी हो गई है।

- **राज्य और केंद्र का सहयोग**

जीएसटी एक सहयोगात्मक संघीय ढांचा प्रदान करता है, जिसमें केंद्र और राज्य दोनों सरकारों को अपने अधिकार क्षेत्र में कर संग्रहण का अधिकार है। राज्य और केंद्र सरकारें एक साथ काम करती हैं और राजस्व को साझा करती हैं, जिससे केंद्र और राज्य सरकारों के बीच कर विवादों में कमी आई है।

- **राज्य सीमाओं पर चेक पोस्ट की समाप्ति**

जीएसटी ने राज्य सीमाओं पर कर चेक पोस्ट की आवश्यकता को समाप्त कर दिया है, जो पहले वस्तुओं और माल के परिवहन में देरी और अतिरिक्त लागत का कारण बनते थे। अब माल और वस्तुएं बिना किसी बाधा के पूरे देश में स्वतंत्र रूप से स्थानांतरित हो सकती हैं, जिससे व्यापारिक प्रक्रिया अधिक सुगम और लागत–कुशल हुई है।

- **सेवा क्षेत्र में सुधार**

जीएसटी ने सेवा क्षेत्र में भी महत्वपूर्ण सुधार किए हैं। पहले विभिन्न राज्य सेवा कर अलग–अलग दरों पर लगते थे, लेकिन अब जीएसटी के तहत एक समान दर पर सेवाओं पर कर लगाया जाता है। इससे सेवाओं पर कर व्यवस्था सरल और स्पष्ट हुई है, जिससे सेवा क्षेत्र में वृद्धि की संभावना बनी है।

- **उद्यमियों के लिए सरल पंजीकरण**

जीएसटी के तहत छोटे और मझोले व्यापारियों के लिए पंजीकरण प्रक्रिया को सरल बना दिया गया है। अब व्यापारियों को केवल एक पंजीकरण की आवश्यकता होती है और वह ऑनलाइन प्रक्रिया के माध्यम से इसे कर सकते हैं। इसके अलावा, एकल कर प्रणाली की वजह से व्यापारियों को अलग–अलग राज्य या केंद्र में पंजीकरण कराने की आवश्यकता नहीं होती।

- **कस्टम ड्यूटी पर सुधार**

जीएसटी ने कस्टम ड्यूटी को भी नए ढंग से परिभाषित किया। अब आयातित वस्तुओं पर भी जीएसटी लगाया जाता है, जो पहले नहीं था। इसके कारण कस्टम ड्यूटी और जीएसटी दोनों को एकीकृत किया गया है, जिससे व्यापारिक प्रक्रियाओं में सुधार हुआ है।

इन विशेषताओं के माध्यम से, जीएसटी ने भारत के कर प्रणाली को आधुनिक, पारदर्शी, और संगठित बनाया है। यह प्रणाली न केवल व्यापारियों के लिए लाभकारी है, बल्कि समग्र रूप से भारतीय अर्थव्यवस्था के लिए भी एक मजबूत और सशक्त कदम साबित हो रही है।

निर्माताओं, वितरकों और खुदरा विक्रेताओं पर जीएसटी का प्रभाव

वस्तु एवं सेवा कर (जीएसटी) भारत के विनिर्माण क्षेत्र को बदलने, प्रतिस्पर्धात्मकता और समग्र प्रदर्शन को बढ़ाने में महत्वपूर्ण भूमिका निभा रहा है। निर्यात में गिरावट और बुनियादी ढांचे पर बढ़ते खर्च जैसी चुनौतियों के बावजूद, जीएसटी द्वारा शुरू किए गए सरलीकृत कर ढांचे के कारण यह क्षेत्र मजबूत विकास के लिए तैयार है। निर्माताओं, वितरकों और खुदरा विक्रेताओं पर जीएसटी के प्रभाव पर कुछ मुख्य बिंदु इस प्रकार हैं:

- **प्रशासनिक राहतः** जीएसटी ने कई अप्रत्यक्ष करों की जगह ले ली है, जिससे निर्माताओं और वितरकों पर प्रशासनिक बोझ कम हो गया है। इस राहत से इस क्षेत्र के विकास में योगदान मिलने की उम्मीद है।
- **अनुपालन लाभः** जीएसटी के लागू होने से विनिर्माण क्षेत्र के व्यवसायों को अनुपालन बोझ में उल्लेखनीय कमी का अनुभव होगा, जिससे परिचालन दक्षता में सुधार होगा।
- **कर आधार का विस्तारः** जीएसटी लागू होने के बाद, किसी भी कर व्यवस्था के बाहर काम करने वाले व्यवसायों को अब पंजीकरण कराना आवश्यक है। यह समावेशन कर चोरी को रोकने में मदद करता है और कर आधार को व्यापक बनाता है।
- **प्रतिस्पर्धात्मक बढ़तः** जीएसटी की एकीकृत कर संरचना निर्माताओं, वितरकों और खुदरा विक्रेताओं की प्रतिस्पर्धात्मकता को बढ़ाती है, जिससे समान अवसर उपलब्ध होते हैं।
- **सकारात्मक विकास की संभावनाः** प्रारंभिक चिंताओं के बावजूद, जीएसटी को विनिर्माण क्षेत्र में सकारात्मक बदलाव के उत्प्रेरक के रूप में देखा जा रहा है, जो एक स्वस्थ और अधिक प्रतिस्पर्धी कारोबारी माहौल को बढ़ावा देगा।

सेवा प्रदाताओं पर जीएसटी का प्रभाव

मार्च 2014 में, भारत में 12 लाख से ज़्यादा सेवा करदाता थे, जिनमें से शीर्ष 50 योगदानकर्ता देश भर में कर संग्रह के आधे से ज़्यादा के लिए ज़िम्मेदार थे। प्रमुख क्षेत्रों में आईटी सेवाएँ, बीमा, दूरसंचार, व्यवसाय सहायता और बैंकिंग शामिल थे। ये अखिल भारतीय व्यवसाय, जो पहले से ही एकीकृत बाज़ार में काम कर रहे थे, ने जीएसटी कार्यान्वयन के बाद अनुपालन बोझ में उल्लेखनीय कमी का अनुभव किया। सेवा प्रदाताओं पर जीएसटी के प्रभाव पर कुछ मुख्य बिंदु इस प्रकार हैंरू

- **कर वितरणः** शीर्ष 50 सेवा प्रदाताओं ने राष्ट्रीय कर संग्रह में महत्वपूर्ण योगदान दिया, जिससे इस क्षेत्र के भीतर कर भुगतान की एकाग्रता पर जोर दिया गया।
- **प्रमुख योगदानकर्ताः** आईटी सेवाएं, बीमा, दूरसंचार, व्यवसाय सहायता और बैंकिंग जैसे उद्योगों ने कर संग्रह में महत्वपूर्ण भूमिका निभाई, जो उनके आर्थिक महत्व को दर्शाता है।
- **एकीकृत बाजार का लाभः** एकीकृत बाजार में परिचालन करने वाले अखिल भारतीय सेवा प्रदाताओं को जीएसटी लागू होने के बाद अनुपालन बोझ में पर्याप्त कमी देखने को मिली।
- **राज्यवार पंजीकरणः** लाभों के बावजूद, सेवा प्रदाताओं को अब प्रत्येक राज्य में प्रत्येक व्यवसाय स्थान को अलग से पंजीकृत करने का कार्य करना होगा, जो जीएसटी नियमों का अनुपालन करने के लिए एक नया कदम है।

निर्माताओं, वितरकों, खुदरा विक्रेताओं और सेवा प्रदाताओं पर पड़ने वाले प्रभावों का पता लगाने के बाद, आइए जीएसटी के समग्र प्रभाव का क्षेत्रवार विश्लेषण करें।

छोटे व्यवसायों पर जीएसटी का तत्काल प्रभाव

जीएसटी की शुरूआत ने कर प्रणाली में महत्वपूर्ण बदलाव लाए, जिससे विभिन्न उद्योग प्रभावित हुए, छोटे व्यवसायों को उल्लेखनीय चुनौतियों का सामना करना पड़ा। कई छोटे व्यवसाय मालिक, अपने उद्यमों के प्रति जुनून से प्रेरित होकर, जटिल कर आवश्यकताओं को पूरी तरह से नहीं समझ पाते हैं। सीमित संसाधन नए जीएसटी नियमों के अनुकूल होने की उनकी क्षमता को और जटिल बनाते हैं।

शुरूआत में छोटे कारोबारियों को नए जीएसटी नियमों को लागू करने और उनका अनुपालन करने में कई तरह की बाधाओं का सामना करना पड़ा। आइए इन चुनौतियों के बारे में विस्तार से जानें।

जीएसटी का क्षेत्रवार विश्लेषण

क्षेत्रवार जीएसटी प्रभाव विश्लेषण और जीडीपी पर जीएसटी के प्रभाव के लिए यहां देखेंः

कृषि पर जीएसटी का प्रभावः

भारत के सकल घरेलू उत्पाद में लगभग 16ः का महत्वपूर्ण योगदान देने वाले कृषि क्षेत्र को जीएसटी से पहले उत्पादों के अंतरराज्यीय परिवहन में बाधाओं का सामना करना पड़ा। जबकि जीएसटी ने करों में कमी करके इसे कम कर दिया है, निरंतर परिवहन चुनौतियों को दूर करने के लिए आगे और सुधार की उम्मीद है। इस क्षेत्र में अधिक सुव्यवस्थित और कुशल वितरण नेटवर्क की कल्पना की गई है।

ऑटोमोबाइल पर जीएसटी का प्रभावः

जीएसटी ने ऑटोमोबाइल क्षेत्र के लिए महत्वपूर्ण लाभ की शुआत की है, कारों और घटकों के लिए कर संरचनाओं को सरल बनाया है। उद्योग, जो पहले उत्पाद शुल्क, वैट और अन्य जैसे कई करों से बोझिल था, अब एक एकीकृत जीएसटी ढांचे के तहत काम करता है। खरीदारों को अधिक सरल प्रक्रिया का सामना करना पड़ता है, लागू जीएसटी के साथ अतिरिक्त उपकर दर का भुगतान करना पड़ता है।

एफएमसीजी पर जीएसटी का प्रभाव

जीएसटी के बाद एफएमसीजी क्षेत्र में लॉजिस्टिक्स और वितरण में उल्लेखनीय लागत बचत हुई है। नई कर व्यवस्था के तहत कई बिक्री डिपो की आवश्यकता समाप्त होने से परिचालन दक्षता में वृद्धि हुई है। यह सुव्यवस्थित प्रभाव पूरी आपूर्ति श्रृंखला पर सकारात्मक प्रभाव डालता है, जिससे एफएमसीजी क्षेत्र अधिक चुस्त और लागत प्रभावी हो जाता है।

फ्रीलांसरों पर जीएसटी का प्रभाव

जीएसटी फ्रीलांसरों के लिए कर दाखिल करने में स्वागत योग्य सरलीकरण लाता है, उन्हें सेवा प्रदाताओं के रूप में वर्गीकृत करता है। जीएसटी द्वारा शुरू की गई ऑनलाइन योजना न केवल अधिक सरल कर दाखिल करने की सुविधा प्रदान करती है, बल्कि इस उभरते उद्योग के भीतर पारदर्शिता और जवाबदेही को भी बढ़ाती है। फ्रीलांसरों को अब अपने कर दायित्वों की स्पष्ट समझ है, जो एक अधिक अनुपालन और संगठित पारिस्थितिकी तंत्र को बढ़ावा देता है।

ई–कॉमर्स पर जीएसटी का प्रभाव

जबकि जीएसटी ई–कॉमर्स क्षेत्र के निरंतर विकास में सहायक है, स्रोत पर कर संग्रह (टीसीएस) की शुरूआत कम्पनियों के लिए चुनौतियां उत्पन्न करती है।

इन बाधाओं के बावजूद, यह क्षेत्र नए मानदंडों के अनुकूल ढल रहा है। हाल ही में जोड़ा गया, धारा 194–ओ, ई–कॉमर्स लेनदेन पर टीडीएस की प्रयोज्यता को परिभाषित करता है, जो अनुपालन की एक नई परत पेश करता है। गतिशील ई–कॉमर्स परिदृश्य के भीतर इन परिवर्तनों के दीर्घकालिक प्रभावों की बारीकी से निगरानी की जाएगी।

लॉजिस्टिक्स पर जीएसटी का प्रभाव

अर्थव्यवस्था की एक महत्वपूर्ण रीढ़ के रूप में, भारत में लॉजिस्टिक्स क्षेत्र को जीएसटी के कार्यान्वयन से काफी लाभ होगा। एक परिपक्व लॉजिस्टिक्स उद्योग में "मेक इन इंडिया" पहल की सफलता में महत्वपूर्ण योगदान देने की क्षमता है। जीएसटी के तहत सुव्यवस्थित कर संरचना से लॉजिस्टिक्स पारिस्थितिकी तंत्र के भीतर बेहतर दक्षता, कम परिचालन जटिलताएं और समग्र लागत बचत होने की उम्मीद है।

फार्मा पर जीएसटी का प्रभाव

जीएसटी जेनेरिक दवा निर्माताओं के लिए समान अवसर उपलब्ध कराकर, चिकित्सा पर्यटन को बढ़ावा देकर और कर ढांचे को सरल बनाकर फार्मा और स्वास्थ्य सेवा उद्योगों को उल्लेखनीय लाभ पहुंचाता है। हालांकि ये सकारात्मक प्रभाव स्पष्ट हैं, लेकिन मूल्य निर्धारण ढांचे को लेकर चिंताएं क्षेत्र में बनी हुई हैं। उद्योग को संभावित कर राहत की उम्मीद है, जिससे स्वास्थ्य सेवाओं तक पहुंच और बढ़ सकती है।

रियल एस्टेट पर जीएसटी का प्रभाव

कर दरों पर निर्भरता के कारण देरी से होने वाले प्रभावों के बावजूद, जीएसटी के कार्यान्वयन के साथ रियल एस्टेट क्षेत्र में पारदर्शिता और जवाबदेही हासिल होने की उम्मीद है। प्रत्याशित पर्याप्त लाभ से लंबे समय में इस क्षेत्र का स्वरूप बदलने की उम्मीद है, जिससे अधिक संगठित और विनियमित रियल एस्टेट वातावरण को बढ़ावा मिलेगा।

स्टार्टअप्स पर जीएसटी का प्रभाव

जीएसटी स्टार्टअप के लिए परिवर्तनकारी बदलाव लेकर आया है, जिसमें पंजीकरण सीमा में वृद्धि, क्प्ल अनुपालन मॉडल, कर क्रेडिट और सुव्यवस्थित संचालन की पेशकश की गई है। राज्य–विशिष्ट वैट कानूनों को समाप्त करने से पहले की उलझन दूर हो गई है, खासकर ई–कॉमर्स क्षेत्र में। ये बदलाव स्टार्टअप के लिए अधिक अनुकूल माहौल बनाते हैं, विकास, अनुपालन और प्रतिस्पर्धा को बढ़ावा देते हैं।

दूरसंचार पर जीएसटी का प्रभाव

जबकि नियमित परिवर्तनों के कारण कीमतों पर प्रभाव में उतार–चढ़ाव होता रहता है, जीएसटी ने कुशल इन्वेंट्री प्रबंधन के माध्यम से निर्माताओं के लिए लागत बचत को बढ़ावा दिया है। जीएसटी के बाद दूरसंचार क्षेत्र में कीमतों में कमी देखी गई, सरलीकृत लॉजिस्टिक्स ने पर्याप्त बचत में योगदान दिया। निर्माता अब अपने उत्पादों को बेचने के लिए अधिक सरल प्रक्रियाओं का आनंद लेते हैं, जिससे लॉजिस्टिक्स संबंधी जटिलताएँ और कम हो जाती हैं।

वस्त्र पर जीएसटी का प्रभाव

वार्षिक निर्यात में लगभग 10ः का योगदान देने वाले कपड़ा उद्योग को जीएसटी के तहत लाभ मिलने की उम्मीद है। छोटे–मध्यम उद्यमों द्वारा पसंद की जाने वाली कपास मूल्य श्रृंखला पर सकारात्मक प्रभाव देखने को मिल रहा है क्योंकि जीएसटी इस मार्ग पर केंद्रीय उत्पाद शुल्क को समाप्त कर देता है। उद्योग को वार्षिक निर्यात में अपने योगदान में वृद्धि की उम्मीद है, जिससे विकास और स्थिरता को बढ़ावा मिलेगा।

इसके अलावा, जीएसटी का क्षेत्रवार प्रभाव अलग–अलग है, जिसका उद्देश्य परिचालन को सुव्यवस्थित करना, जटिलताओं को कम करना और समग्र आर्थिक विकास में योगदान देना है। प्रत्येक क्षेत्र अद्वितीय परिवर्तनों का अनुभव करता है, जो भारत में अधिक एकीकृत, कुशल और प्रतिस्पर्धी आर्थिक परिदृश्य के लिए मंच तैयार करता है।

इसलिए, जीएसटी ने भारतीय व्यवसायों में महत्वपूर्ण सकारात्मक बदलाव लाए हैं, प्रक्रियाओं को सुव्यवस्थित किया है और अधिक कुशल आर्थिक वातावरण को बढ़ावा दिया है। शुआती चुनौतियों के बावजूद, समग्र प्रभाव दीर्घकालिक लाभ दर्शाता है, जिसमें जटिलताएं कम हुई हैं और विभिन्न क्षेत्रों में प्रतिस्पर्धा में सुधार हुआ है।

जीएसटी व्यवस्था में मूलभूत परिवर्तन

यह समझने के लिए कि जीएसटी कानून छोटे व्यवसायों को कैसे प्रभावित करते हैं, इस नई कर प्रणाली द्वारा पेश किए गए प्रमुख परिवर्तनों पर नजर डालना उपयोगी होगारू

एकल कर प्रणाली

जीएसटी पूरे भारत में सभी वस्तुओं और सेवाओं पर एकाधिक शुल्कों के स्थान पर एकल कर लगाकर कर प्रक्रिया को सरल बनाती है।

दोहरी कर संरचना

एक ही राज्य के भीतर लेनदेन के लिए, जीएसटी को दो भागों में विभाजित किया गया हैरू केंद्रीय जीएसटी (सीजीएसटी) और राज्य जीएसटी (एसजीएसटी)।

एकीकृत कर

राज्यों के बीच लेन–देन के लिए, एकीकृत जीएसटी (आईजीएसटी) लागू होता है। यह कर केंद्र सरकार द्वारा एकत्र किया जाता है और बाद में संबंधित राज्यों को वितरित किया जाता है।

कर दर स्लैब

जीएसटी ने कर दरों में भी संशोधन किया है, वस्तुओं और सेवाओं को अलग–अलग स्लैब में वर्गीकृत किया है। आवश्यक वस्तुओं को जीएसटी से छूट दी गई है, जबकि विलासिता की वस्तुओं पर उच्च दरें लागू होंगी।

जीएसटी के अनुकूल होने में व्यवसायों द्वारा दिखाया गया लचीलापन एक एकीकृत और पारदर्शी कर ढांचे के प्रति प्रतिबद्धता को दर्शाता है। जैसे–जैसे भारत का आर्थिक परिदृश्य विकसित होता है, जीएसटी के स्थायी लाभ निरंतर विकास और दक्षता में योगदान देने के लिए तैयार हैं। वाणिज्य शिक्षा के क्षेत्र में, फिजिक्सवाला (पीडब्लू) अपने अभिनव और व्यापक दृष्टिकोण के लिए खड़ा है, यह सुनिश्चित करता है कि छात्र क्षेत्र की गतिशील मांगों के लिए अच्छी तरह से तैयार हों।

उद्योगों पर जीएसटी का प्रभाव

वस्तु एवं सेवा कर (जीएसटी) ने भारतीय अर्थव्यवस्था के विभिन्न क्षेत्रों को प्रभावित किया है। इसके लागू होने के बाद कई उद्योगों में महत्वपूर्ण बदलाव आए हैं। विभिन्न क्षेत्रों पर जीएसटी के प्रभाव का विश्लेषण निम्नलिखित प्रकार से किया जा सकता हैः

विनिर्माण क्षेत्र

विनिर्माण क्षेत्र पर जीएसटी का प्रभाव मिश्रित रहा है।

- **सकारात्मक प्रभाव**

जीएसटी ने विनिर्माण लागत को कम किया क्योंकि अब विभिन्न स्तरों पर लगे अप्रत्यक्ष करों (जैसे वैट, केंद्रीय उत्पाद शुल्क) का समेकन किया गया। इसके अलावा, इनपुट टैक्स क्रेडिट (प्ज्ब्) की व्यवस्था ने विनिर्माण कंपनियों को माल और सेवाओं पर पहले किए गए करों के क्रेडिट का लाभ उठाने की सुविधा दी।

- **नकारात्मक प्रभाव**

हालांकि, शुआत में संयंत्रों और गोदामों को पुनर्गठित करने की आवश्यकता पड़ी, क्योंकि जीएसटी ने राज्य सीमाओं पर विभिन्न कर चेकपोस्टों को समाप्त कर दिया था, जिससे माल के परिवहन में पहले से ज्यादा सुविधा मिली, लेकिन इसके साथ ही कई उद्योगों को नई तकनीकी और डिजिटल अनुपालन प्रणालियों को अपनाने में कठिनाइयाँ आईं।

सेवा क्षेत्र

सेवा क्षेत्र पर जीएसटी का प्रभाव अपेक्षाकृत चुनौतीपूर्ण था।

- **बढ़ी हुई कर दर**

पहले सेवा क्षेत्र पर 15ः की दर से सेवा कर लगता था, लेकिन जीएसटी के तहत इसे बढ़ाकर 18ः कर दिया गया। इसके परिणामस्वरूप, सेवा उद्योग पर कर भार बढ़ा। हालांकि, कुछ सेवाओं पर 5ः और 12ः की दरें भी लागू की गईं, लेकिन कुल मिलाकर सेवा क्षेत्र पर जीएसटी का भार बढ़ा।

- **पारदर्शिता में सुधार**

हालांकि, जीएसटी ने सेवा क्षेत्र में पारदर्शिता को बढ़ाया, क्योंकि अब सभी सेवाओं को एक समान टैक्स प्रणाली के तहत लाया गया, जिससे अनुपालन और टैक्स भुगतान की प्रक्रिया सरल हुई।

- **लघु और मध्यम उद्योग**

लघु और मध्यम उद्योग पर जीएसटी का प्रभाव चुनौतीपूर्ण था।

डिजिटल अनुपालन की कठिनाई

SMEs के लिए जीएसटी अनुपालन में सबसे बड़ी चुनौती डिजिटल प्रणाली को अपनाने में आई। पहले, छोटे उद्योगों को कर भुगतान और अनुपालन के लिए केवल सरल कागजी कार्यवाही की आवश्यकता थी, लेकिन जीएसटी ने उन्हें ऑनलाइन रिटर्न फाइल करने, डिजिटल चालान और अन्य करदाताओं के साथ ई–समन्वय करने की आवश्यकता बनायी।

आर्थिक दबाव

छोटे व्यापारियों को इनपुट टैक्स क्रेडिट का लाभ जरूर मिला, लेकिन इसके लिए उन्हें पहले से अधिक निवेश और समय की आवश्यकता पड़ी। कई ैडम्े को जीएसटी के तहत बढ़ी हुई बवउचसपंदबमे और नई तकनीकी आवश्यकताओं के कारण अतिरिक्त खर्चों का सामना करना पड़ा।

ई–कॉमर्स

ई–कॉमर्स क्षेत्र में जीएसटी का प्रभाव सकारात्मक था।

सरलता और समानता

जीएसटी ने ई–कॉमर्स कंपनियों के लिए व्यापारिक प्रक्रिया को सरल और समान बना दिया। पहले, विभिन्न राज्यों में अलग–अलग कर दरों और विधियों के कारण ई–कॉमर्स कंपनियों को विक्रेताओं के साथ जटिल कर भुगतान प्रक्रियाओं का सामना करना पड़ता था। जीएसटी के लागू होने से, अब इन कंपनियों को एक समान कर ढांचा मिला, जिससे पूरे भारत में व्यवसाय संचालन करना आसान हो गया।

पारदर्शिता

ई–कॉमर्स कंपनियों को ऑनलाइन लेन–देन को पारदर्शी बनाने का अवसर मिला, जिससे उनके व्यापार में अधिक विश्वास और सुरक्षा बनी। इसके अलावा, जीएसटी ने माल और सेवाओं के आयात–निर्यात को भी सरल बनाया, जिससे वैश्विक स्तर पर ई–कॉमर्स व्यापार बढ़ा।

जीएसटी ने भारतीय उद्योगों पर व्यापक प्रभाव डाला है। विनिर्माण, सेवा, ैडम्े और ई–कॉमर्स क्षेत्रों में कुछ सकारात्मक परिवर्तन हुए, वहीं कुछ उद्योगों को जीएसटी के अनुपालन से संबंधित चुनौतियों का सामना भी करना पड़ा। जहां एक ओर जीएसटी ने व्यापारिक प्रक्रियाओं को पारदर्शी और सरल बनाया, वहीं दूसरी ओर छोटे उद्योगों और सेवा क्षेत्र के लिए कर दरों में वृद्धि ने दबाव भी डाला। इस प्रकार, जीएसटी ने भारतीय उद्योगों में कई सुधार लाए, लेकिन साथ ही इसके प्रभावी कार्यान्वयन के लिए निरंतर सुधार और सहयोग की आवश्यकता बनी हुई है।

चुनौतियाँ

वस्तु एवं सेवा कर (जीएसटी) के लागू होने के बावजूद, इसके कार्यान्वयन में कई चुनौतियाँ सामने आई हैं। इन चुनौतियों का समाधान किए बिना जीएसटी के लाभ को पूरी तरह से प्राप्त करना मुश्किल हो सकता है। निम्नलिखित कुछ प्रमुख समस्याएँ हैं जिनका सामना व्यापारियों, सरकार और उपभोक्ताओं को करना पड़ा।

- **तकनीकी अवसंरचना की कमी**

जीएसटी की पूरी प्रक्रिया डिजिटल प्रणाली पर आधारित है, जिसमें जीएसटी रिटर्न की फाइलिंग, चालान जेनरेशन और अन्य कर दायित्वों को ऑनलाइन किया जाता है।

छोटे व्यापारियों के लिए समस्या

छोटे व्यापारी और ॑डम्े (लघु और मध्यम उद्योग) के लिए डिजिटल अनुपालन एक बड़ी चुनौती साबित हुई। कई छोटे व्यापारियों के पास आवश्यक तकनीकी अवसंरचना नहीं थी, जैसे कंप्यूटर, इंटरनेट कनेक्टिविटी या डिजिटल साक्षरता, जिसके कारण उन्हें जीएसटी रिटर्न फाइल करने में कठिनाई आई। इसके अलावा, तकनीकी समस्याओं के कारण कई बार रिटर्न फाइलिंग में विलंब हुआ, जिससे व्यापारियों को जुर्माने का सामना करना पड़ा।

- **मूल्य निर्धारण में भ्रम**

जीएसटी के तहत विभिन्न वस्तुओं और सेवाओं के लिए अलग–अलग कर दरें निर्धारित की गई हैं, जैसे 5:, 12:, 18: और 28:।

- **प्रभाव**

इन विभिन्न दरों के कारण मूल्य निर्धारण जटिल हो गया। व्यापारियों को अपनी कीमतों में संशोधन करने और विभिन्न उत्पादों पर लागू कर दरों का सही तरीके से निर्धारण करने में कठिनाई हुई। कई मामलों में, उपभोक्ताओं को भी यह समझने में समस्या आई कि किसी विशेष उत्पाद पर कौन सा कर दर लागू होगा।

- **मूल्य में वृद्धि**

कुछ उत्पादों की कीमतों में जीएसटी के कारण वृद्धि भी हुई, जिससे उपभोक्ताओं को अधिक खर्च करना पड़ा। इससे व्यापारियों और उपभोक्ताओं दोनों के बीच भ्रम पैदा हुआ और जीएसटी की पूरी अवधारणा पर सवाल उठाए गए।

कमजोर जागरूकता

जीएसटी के लागू होने के बाद, व्यापारियों और उपभोक्ताओं दोनों के बीच जीएसटी की अवधारणा को लेकर भ्रम बना रहा।

- **व्यापारियों में जागरूकता की कमी**
  - कई व्यापारियों ने जीएसटी के बारे में पर्याप्त प्रशिक्षण और जानकारी नहीं प्राप्त की थी, जिससे उन्हें इसकी प्रक्रियाओं और अनुपालन में समस्याएँ आईं। जीएसटी के प्रावधानों को समझने और सही तरीके से लागू करने में व्यापारियों को कठिनाई हुई।
- **उपभोक्ताओं में जागरूकता की कमी**
  - उपभोक्ताओं को यह समझने में समस्या आई कि उन्हें किन उत्पादों पर जीएसटी का भुगतान करना है और कितना भुगतान करना है। इसके अलावा, कुछ उपभोक्ताओं को यह भ्रम था कि जीएसटी के तहत वस्तुओं की कीमतें बढ़ जाएँगी, जबकि कुछ मामलों में कीमतें घट भी गईं।
- **विभिन्न दरें**

जीएसटी के तहत चार प्रमुख कर दरों (5:, 12:, 18:, और 28:) के साथ–साथ कुछ विशेष वस्तुओं और सेवाओं पर 0 प्रतिशत की दर भी निर्धारित की गई है।

- **समस्या**
  - विभिन्न दरों के कारण उत्पादों और सेवाओं की श्रेणी निर्धारण में जटिलता आई। व्यापारियों को यह निर्णय लेने में कठिनाई हुई कि कौन सा उत्पाद किस श्रेणी में आता है और उस पर किस दर से कर लगेगा।

- **मूल्य निर्धारण पर प्रभाव**
  - विभिन्न दरों के कारण उत्पादों और सेवाओं की कीमतों में विविधता आ गई, जिससे मूल्य निर्धारण की प्रक्रिया और अधिक जटिल हो गई। कुछ उत्पादों पर 28ः की उच्चतम दर लागू हुई, जबकि अन्य पर 5ः या 12ः की दर लागू हुई, जिससे व्यापारी इन बदलावों को समझने में उलझन में पड़ गए।

जीएसटी के लागू होने के बाद भारत में कई सकारात्मक बदलाव आए हैं, लेकिन इसके कार्यान्वयन में विभिन्न चुनौतियाँ भी सामने आई हैं। विशेष रूप से छोटे व्यापारियों को तकनीकी अवसंरचना की कमी, मूल्य निर्धारण की जटिलताएँ, और जागरूकता की कमी जैसी समस्याओं का सामना करना पड़ा। इसके साथ ही, विभिन्न कर दरों के कारण श्रेणी निर्धारण की प्रक्रिया भी जटिल हो गई। इन समस्याओं का समाधान करने के लिए सरकार को निरंतर सुधार और व्यापारियों को अधिक प्रशिक्षण और सहायता प्रदान करने की आवश्यकता है, ताकि जीएसटी का पूर्ण लाभ प्राप्त किया जा सके।

निष्कर्ष

वस्तु एवं सेवा कर (जीएसटी) ने भारतीय कर प्रणाली में एक ऐतिहासिक बदलाव लाया है, जो ष्एक राष्ट्र, एक करष के सिद्धांत को साकार करता है। इस कर प्रणाली के लागू होने से भारतीय व्यापार में पारदर्शिता, सरलता, और समन्वय को बढ़ावा मिला है। जीएसटी ने विभिन्न अप्रत्यक्ष करों को एकजुट करके व्यापारियों के लिए कर अनुपालन को सरल और स्पष्ट बना दिया है, साथ ही यह एक समान कर ढांचा प्रदान करता है जो पूरे देश में व्यापार को समान स्तर पर सुगम बनाता है।

हालाँकि, जीएसटी के कार्यान्वयन के दौरान कई चुनौतियाँ सामने आई हैं, जिनमें तकनीकी अवसंरचना की कमी, मूल्य निर्धारण में भ्रम, जागरूकता की कमी और विभिन्न कर दरों की जटिलता प्रमुख हैं। विशेष रूप से छोटे और मंझले उद्योगों ;डम्मद्ध के लिए जीएसटी अनुपालन की प्रक्रिया चुनौतीपूर्ण रही है, क्योंकि उन्हें डिजिटल प्रणाली को अपनाने में कठिनाई हुई।

इन चुनौतियों के बावजूद, जीएसटी का सकारात्मक प्रभाव अधिक दिखाई देता है, विशेष रूप से व्यापारिक पारदर्शिता, कर चोरी में कमी, और केंद्र–राज्य सहयोग में सुधार के संदर्भ में। इसके साथ ही, ई–कॉमर्स, विनिर्माण और सेवा क्षेत्रों में भी जीएसटी ने सुधारात्मक कदम उठाए हैं, जिससे व्यापारियों को अधिक लचीलापन और सुविधा प्राप्त हुई है।

इस शोध पत्र के माध्यम से यह स्पष्ट हुआ कि जीएसटी भारतीय अर्थव्यवस्था के लिए एक आवश्यक और सुधारात्मक कदम था, लेकिन इसके प्रभावी कार्यान्वयन के लिए निरंतर सुधार और बेहतर जागरूकता अभियान की आवश्यकता है। केवल तभी जीएसटी का पूरा लाभ भारतीय व्यापारियों, उपभोक्ताओं और समग्र अर्थव्यवस्था को प्राप्त हो सकता है।

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ASSESSING THE IMPLEMENTATION OF THE INTERSTATE MIGRANT WORKER'S ACT: A CRITICAL ANALYSIS ON THE MIGRANT WORKERS OF GANJAM

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ABSTRACT

Interstate migration for work is a significant socio-economic phenomenon in India, where millions of migrant workers move across state boundaries in search of employment opportunities. The Interstate Migrant Worker's Act (IMWA) of 1979 was designed to regulate and protect the rights of migrant workers, addressing issues related to their welfare, safety, security and fair wages. This paper critically analyses the implementation of the Interstate Migrant Worker's Act on the workers of Ganjam, who often migrate to other states like Andhra Pradesh, Telangana, Tamil Nadu, Gujarat etc. It examines the effectiveness of the Act in safeguarding the interests of these workers and identifies gaps in its enforcement. Despite legislative safeguards such as the Interstate Migrant Workers (Regulation of Employment and Conditions of Work) Act of 1979, enforcement was patchy, and many workers were uninformed of their rights. This analysis emphasizes the need to collect reliable data and do research to influence policy choices and enhance the lives of interstate migrant workers. The study also provides recommendations to enhance the protection and well-being of migrant workers in Ganjam.

***KEYWORDS**: Interstate Migrant Worker's Act, Migrant Workers, Ganjam, Odisha, Labour Welfare, Implementation, Socio-economic Protection.*

Introduction

Migration is a key aspect of India's economic and social landscape. Migrant workers, particularly those from rural regions, seek employment in urban areas or in other states where labour demand is high. The state of Odisha, with districts like Ganjam, is a significant contributor to the migrant workforce in India. Ganjam is known for its agricultural economy, but a large proportion of its population migrates to other states such as Andhra Pradesh, Tamil Nadu, and Gujarat for work in sectors like construction, agriculture, and domestic work.

The Interstate Migrant Worker's Act (IMWA) of 1979 was enacted to provide legal protection to migrant workers. The Act mandates the registration of contractors who employ interstate migrant workers. Its applicable to every establishment and contractor who has employed five or more interstate workers. Pass Book to every interstate migrant workmen with full details, payment of displacement allowance equivalent to 50% of monthly wages of Rs. 75/- whichever is higher, payment of journey allowance including payment of wage during the period of the journey, suitable residential accommodation, medical facilities and protective clothing, payment of wages, equal pay for equal work irrespective of sex, etc Despite the legal framework, the actual implementation of the Act in states like Odisha, Andhra Pradesh, Telangana, Gujarat has faced numerous challenges, such as poor enforcement, lack of awareness, and institutional gaps. This paper seeks to critically assess the implementation of the IMWA in Ganjam, exploring its effectiveness and identifying the areas where the Act fails to meet its objectives. The study aims to contribute to the discourse on labour migration and propose practical measures for enhancing the welfare of migrant workers.

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Literature Review

The issue of migrant workers and their welfare has been the subject of numerous studies and reports. Scholars such as **P.G. Mavimbela (2005)** and **K. Rajasekhar (2007)** highlight that while the IMWA was a step in the right direction, the lack of effective enforcement mechanisms and awareness among workers have made its implementation largely ineffective. According to **National Labour Commission (2002)**, the Act is often poorly enforced, with many migrant workers unaware of their rights under the legislation.

Hemavarshini. S1, Bowya Darshini, K2(2023) has discussed in detail about the features of Interstate Migrant worker Act,1979. Bringing some idea about its History and also putting emphasis on present defaults on the implications of this act at many workplaces. Researcher has discussed the Challenges faced by the migrant workers and hence, pointing out the lacunas in the legal framework or implementation of the Act. He has also presented few points that need to be considered by the policy makers to bring amendment in the Act.

Kenson Sam Alex and Jobi Babu this paper attempts to study the factors regarding the social health as well as the living conditions of the migrant workers of a particular village in Idukki District.

Kamala Kanta Mohapatra aimed at understanding the degree of vulnerability of the women workers in informal sector in India. Results suggest that a highly visible percentage of occupational group irrespective of their monthly average income, continue to face multiple constraints which otherwise compel them to live a life full of compromises.

Shruthi Ashok and Prof. Neena Thomas has discussed about the socio- economic background & housing issues faced by low income Inter- State Migrant (ISM) labourers working in construction sites of other states.

Aajiveeka Bureau Has suggested some key recommendations like Tracking and Registration of Migrant Workers, Social Security and Alternative Livelihood, Inter-state Coordination and Inter-state Migrant Workers Policy

In Ganjam, research by **Odisha Labour Force Survey (2020)** reveals that a large proportion of migrant workers are involved in informal sectors, which makes them vulnerable to exploitation. This is exacerbated by the lack of institutional support and limited reach of government programs designed to address the needs of migrant workers.

Khan, M. (2018) suggested the measures in order to protect the migrant labour in India. In this paper, an attempt has been made to discuss about labour rights and standards in respect of migrant labour in India.

Nair, N., & B.S., Anupama. (2019) examined various provisions of the Act and reviewed the problems faced by the migrant workers, enforcement machinery, and problem in implementation of the Act

Objectives of the Study

This study seeks to achieve the following objectives:

- Assess the awareness of migrant workers in Ganjam about the Interstate Migrant Worker's Act.
- Evaluate the enforcement of the Act by local authorities and contractors.
- Identify the socio-economic conditions of migrant workers in Ganjam and their compliance with the provisions of the Act.
- Propose recommendations for improving the welfare of migrant workers in Ganjam under the framework of the Act.

Methodology

The research employs both qualitative and quantitative methods:

- **Primary Data**: Structured interviews with 50 migrant workers from Ganjam who have migrated to different states for employment. These interviews focus on workers' knowledge of the Act, the challenges they face, and their working conditions.
- **Secondary Data**: Analysis of existing reports, government documents, and literature related to the IMWA, including studies on its implementation in Odisha and Ganjam.

Results and Discussion

- **Awareness of the Interstate Migrant Worker's Act**

One of the most significant findings of this study is the low level of awareness about the IMWA among migrant workers in Ganjam. Most of the workers interviewed had either limited or no knowledge of the provisions of the Act. They were not aware of their rights regarding minimum wages, transportation, or housing under the Act. Contractors and middlemen often play a crucial role in the recruitment process but fail to inform workers about their legal entitlements, thus leaving them vulnerable to exploitation.

- **Enforcement of the Act**

While the Act mandates the registration of contractors and the provision of welfare measures, enforcement remains weak in Ganjam. The local labor department lacks adequate personnel and resources to effectively monitor and implement the provisions of the Act. Contractors often bypass registration requirements, and migrant workers are rarely issued identity cards, which are essential for accessing social security benefits. The workers are also not provided with adequate housing or safety measures, which leads to poor living conditions.

- **Socio-economic Conditions of Migrant Workers**

Migrant workers from Ganjam are often employed in low-wage, unorganized sectors such as construction, brick kilns, and agricultural labour. They face poor working conditions, with long hours and minimal access to healthcare, sanitation, and social benefits. Many workers, especially women and children, are subjected to exploitation and abuse by employers and contractors. Additionally, the lack of official documentation and registration makes it difficult for workers to claim their rights under the Act.

Gaps in the System

Several gaps were identified in the system that hinder the effective implementation of the IMWA:

- **Lack of Awareness and Outreach**: The government and contractors do not provide sufficient information to migrant workers regarding their rights and protections.
- **Weak Monitoring Mechanisms**: The labour department's capacity to monitor contractors and employers is inadequate.
- **Exploitation by Contractors**: Contractors and middlemen often manipulate workers' wages and working conditions, and there is limited accountability.
- **Absence of Legal Support**: Migrant workers often lack access to legal support to address grievances related to the Act.

Recommendations

To improve the implementation of the IMWA in Ganjam, the following measures are recommended:

- **Awareness Campaigns**: The government should initiate awareness campaigns targeted at migrant workers to inform them about their rights under the IMWA. These campaigns could use local languages and media to ensure better outreach.
- **Strengthening Monitoring and Enforcement**: The labour department should allocate more resources to monitor contractors and employers. A dedicated team should be tasked with ensuring that the Act's provisions are implemented.
- **Legal Assistance**: Legal aid should be made available to migrant workers to help them address violations of the Act and seek redress.
- **Registration of Workers**: The registration of migrant workers should be made compulsory, and identity cards should be issued to facilitate access to welfare programs and entitlements.
- **Improved Housing and Working Conditions**: Contractors should be mandated to provide safe and hygienic housing and working conditions, with adequate facilities such as sanitation and healthcare.
- **Collaboration with Civil Society**: The government should collaborate with non-governmental organizations and labor unions to monitor the welfare of migrant workers and advocate for their rights.

Conclusion

The Interstate Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979, was enacted with the objective of safeguarding the rights and ensuring the welfare of interstate migrant workers. However, as this analysis of Ganjam district demonstrates, the implementation of the Act has been fraught with challenges, resulting in significant gaps between the legislative intent and ground realities. One of the most glaring observations is the persistent lack of awareness among migrant workers about their rights under the Act. This ignorance, coupled with the systemic inefficiencies in enforcement, perpetuates exploitative practices such as underpayment of wages, unsafe working conditions, and denial of basic social security. The absence of robust mechanisms for registration and tracking of migrant workers further exacerbates their vulnerability, leaving them at the mercy of unscrupulous contractors and employers. Ganjam’s case highlights how deeply rooted structural issues hinder the effective implementation of the Act. For instance, the lack of coordination between source and destination states significantly impairs the monitoring and welfare of migrant workers. Despite being one of the largest sources of interstate migration in India, Ganjam’s administrative systems remain ill-equipped to address the unique challenges faced by migrant workers. The failure to adequately enforce provisions such as the issuance of passbooks, ensuring minimum wages, and providing access to healthcare and housing reflects a broader neglect of this vulnerable population's needs.Another critical issue is the absence of a proactive grievance redressal mechanism. While the Act provides for inspections and penalties, in practice, these mechanisms remain underutilized. Migrant workers often lack the means to navigate bureaucratic procedures or the confidence to report abuses due to fear of retaliation and job loss. This inaction further entrenches the power imbalance between employers and workers, undermining the spirit of the law.

The COVID-19 pandemic laid bare the precarious conditions under which migrant workers live and work. The mass exodus of workers from urban centers back to Ganjam underscored the lack of social protection measures and the inadequacy of the existing legal framework to respond to crises. This unprecedented migration crisis highlighted the urgent need to revisit and strengthen the Interstate Migrant Workmen Act to make it more responsive to contemporary challenges. To bridge these gaps, it is imperative to adopt a multi-pronged approach. First, there is a need for greater political will and administrative commitment to enforce the Act effectively. Regular audits, surprise inspections, and stringent penalties for non-compliance can act as deterrents against exploitation. Second, raising awareness among migrant workers about their rights through community-based initiatives and local self-help groups can empower them to seek redress. Third, leveraging technology to create a centralized database of migrant workers can facilitate better tracking, ensure timely delivery of benefits, and enable swift action in times of crises. Furthermore, a holistic approach to labour migration must recognize the interconnectedness of various socio-economic factors. Addressing the root causes of migration, such as poverty, lack of education, and unemployment in source regions like Ganjam, is crucial to reducing workers' dependency on exploitative labour systems. Investing in skill development and livelihood programs can equip workers with better opportunities, reducing their susceptibility to exploitation. Finally, there is an urgent need to align the provisions of the Interstate Migrant Workmen Act with other labour and welfare laws to create a comprehensive and cohesive framework for migrant workers. Collaborative efforts between state governments, civil society organizations, and the private sector can create a supportive ecosystem that not only safeguards the rights of migrant workers but also enhances their quality of life.In conclusion, while the Interstate Migrant Workmen Act, 1979, provides a robust foundation for protecting migrant workers, its efficacy is undermined by weak implementation and systemic challenges. The case of Ganjam underscores the pressing need for reforms, enhanced enforcement, and a rights-based approach to labour migration. Only through sustained efforts and collective action can we hope to translate the legislative promise of the Act into tangible benefits for migrant workers, ensuring their dignity, security, and well-being in an increasingly mobile world.

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CRYPTOCURRENCY ADOPTION AND THE GLOBAL LANDSCAPE

CA (Dr.) Mahendra K Khichi*

ABSTRACT

Cryptocurrency has rapidly evolved from a niche digital asset to a transformative force in the global financial landscape. This article explores the varying global approaches to cryptocurrency adoption, categorizing countries into three groups: fully accepted, partially accepted, and banned. It examines the factors driving these decisions, including economic growth, financial inclusion, innovation, stability concerns, and regulatory challenges. The article also highlights the strategic reasons behind full adoption in certain countries, such as fostering innovation and improving financial inclusion, as well as the factors driving bans, such as concerns over financial stability, security risks, and illicit activities. As the global cryptocurrency market matures, nations are increasingly navigating the complexities of balancing innovation with regulation. The article concludes that international collaboration and the development of clear, balanced regulations will be crucial in shaping the future of cryptocurrency and ensuring its responsible and secure use across the globe.

KEYWORDS*: Cryptocurrency, Global Adoption, Financial Inclusion, Economic Growth, Blockchain Technology, Digital Currencies, Regulatory Challenges, Financial Stability, Innovation, Cryptocurrency Bans, Investment, Central Bank Digital Currencies (CBDCs), International Collaboration, Financial Regulation, Digital Finance.*

Introduction

Cryptocurrency has rapidly evolved from a niche technology into a global financial phenomenon, fundamentally altering how individuals and businesses interact with money. Initially viewed as an experiment in digital finance, cryptocurrencies like Bitcoin and Ethereum are now being actively discussed in boardrooms, government offices, and among everyday consumers across the world. However, the global adoption of cryptocurrency varies widely. Some nations have fully embraced it as part of their financial systems, others have introduced specific regulations to manage its use, while several have outright banned it altogether.

This article explores the global landscape of cryptocurrency adoption, categorizing countries based on their stance toward the technology. By examining these decisions, we provide insights into the diverse approaches countries take toward financial innovation and the broader implications for the future of digital currencies and their role in shaping global financial systems. As the world becomes increasingly digital, cryptocurrency stands at the intersection of innovation, regulation, and economic transformation, influencing everything from cross-border payments to national monetary policies.

Global Status of Cryptocurrency Adoption

Cryptocurrency adoption has varied significantly across the globe, with some countries moving quickly to embrace the technology, while others remain cautious or outright resistant. The adoption of cryptocurrency can be broadly categorized into three groups:

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- **Fully Accepted**: Countries that have officially recognized cryptocurrency and integrated it into their financial systems.
- **Partially Accepted**: Countries that allow cryptocurrency under certain conditions but impose restrictions or regulations.
- **Banned**: Countries that have prohibited the use of cryptocurrency entirely due to various concerns.

Fully Accepted Countries

Some nations have fully embraced cryptocurrency, recognizing its potential to revolutionize the financial landscape. These countries view cryptocurrencies not only as a financial asset but also as a tool for fostering innovation, improving financial inclusion, and enhancing economic growth.

List of Fully Accepted Countries

- **El Salvador**
- **Switzerland**
- **Malta**
- **Estonia**
- **Singapore**
- **Germany**
- **Japan**
- **United States**
- **Canada**
- **Australia**
- **Portugal**
- **South Korea**
- **United Kingdom**
- **Luxembourg**
- **Brazil**

In these countries, cryptocurrency is either fully legalized or integrated into the financial system with clear regulations, allowing for the use of digital assets in daily transactions and investment opportunities.

Partially Accepted Countries

Many nations have taken a more cautious approach to cryptocurrency. They allow its use under specific conditions or impose certain regulatory frameworks to address concerns like money laundering, fraud, or financial instability. While not outright banning cryptocurrencies, these countries restrict or regulate their use to ensure control and compliance with their financial laws.

List of Partially Accepted Countries

- **India**
- **China** (Restrictions on trading, but mining allowed)
- **Russia**
- **Turkey**
- **Mexico**
- **Indonesia**
- **South Africa**
- **Nigeria**

- **Argentina**
- **Thailand**
- **Vietnam**
- **Malaysia**
- **Philippines**
- **Ukraine**
- **Kenya**
- **Colombia**
- **Chile**

These countries have set frameworks that either recognize cryptocurrency as an asset or permit certain uses under regulation, such as allowing it for investment but not as a currency for transactions.

Banned Countries

Despite the growing global acceptance of cryptocurrency, some countries have chosen to **ban or restrict** its use entirely. These decisions are often driven by concerns over financial stability, national security, and the potential risks associated with digital currencies.

List of Banned Countries

- **China**
- **India** (Temporary ban lifted in some areas)
- **Algeria**
- **Bolivia**
- **Morocco**
- **Nepal**
- **Bangladesh**
- **Indonesia**
- **Egypt**
- **Qatar**

In these nations, cryptocurrencies are prohibited for various reasons, including regulatory concerns, fears of financial instability, or worries about illegal activities like money laundering and fraud.

Rationale for Full Cryptocurrency Adoption by Nations

The full adoption of cryptocurrency by certain countries is driven by various strategic, economic, and technological factors. Here are the key reasons why these countries have fully embraced cryptocurrency:

- **Economic Growth and Innovation**: Countries like El Salvador and Switzerland see cryptocurrency as a means to foster innovation and stimulate economic growth. These nations aim to position themselves as leaders in the burgeoning blockchain and cryptocurrency markets.
- **Financial Inclusion**: Cryptocurrency offers a solution to financial exclusion, especially in regions with limited access to traditional banking services. In countries like El Salvador, where a significant portion of the population is unbanked, Bitcoin offers an alternative that can help people access financial services.
- **Regulatory Clarity**: Nations like Germany, Canada, and Australia have established clear regulations, making it easier for businesses and individuals to engage with cryptocurrencies in a safe and legally compliant manner.
- **Global Competitiveness**: Countries are eager to maintain or gain a competitive edge in the global financial system. By embracing cryptocurrency, these nations aim to attract investment, talent, and innovation in blockchain and digital assets.

- **National Sovereignty and Monetary Control**: Countries such as El Salvador and Switzerland see cryptocurrency as a way to assert greater control over their monetary systems. By adopting Bitcoin or other digital assets, these nations aim to reduce their reliance on traditional fiat currencies and strengthen their financial sovereignty.
- **International Influence and Global Trends**: As cryptocurrency gains global traction, many countries feel pressure to align with the global trend. Nations like Switzerland, Canada, and Australia recognize the need for clear regulations to remain competitive in the global financial landscape, ensuring their financial sectors are at the forefront of innovation.

Rationale Behind Cryptocurrency Bans in Countries

The decision to ban cryptocurrency in some countries stems from a range of concerns that governments, regulators, and central banks believe outweigh the benefits of adoption. These countries have implemented bans or severe restrictions on cryptocurrency use due to a variety of financial, regulatory, and societal factors. Below are the key reasons why some nations have chosen to ban or prohibit cryptocurrency:

- **Concerns Over Financial Stability**

One of the most significant factors behind banning cryptocurrency is the perceived threat to national financial stability. Governments and central banks often express concerns that digital currencies, especially highly volatile ones like Bitcoin, could undermine the stability of their fiat currencies. Countries with weaker economies or those reliant on foreign aid or remittances are particularly sensitive to the impact of digital currencies on their monetary policies. For instance, China banned cryptocurrency mining and transactions to prevent capital flight and to protect the value of the Chinese Yuan.

- **Concerns About Illicit Activities**

Cryptocurrencies are often associated with illicit activities such as money laundering, terrorist financing, and illegal trade. Many countries cite the potential for cryptocurrencies to facilitate illegal transactions on the dark web or through peer-to-peer networks. These concerns have led countries like Bangladesh, Nepal, and Indonesia to implement complete bans on cryptocurrency trading and mining.

- **Consumer Protection and Fraud Risks**

In countries with limited regulatory infrastructure or where financial markets are not well-developed, there is a strong emphasis on protecting consumers from the fraudulent schemes that often accompany cryptocurrency. The high volatility of digital currencies has made them prone to manipulation and fraud, leading many governments to act preemptively to protect investors. For example, Bolivia and Afghanistan banned cryptocurrencies due to concerns that citizens might fall victim to Ponzi schemes and high-risk speculative investments without any regulatory oversight.

- **Lack of Regulation and Uncertainty**

Many countries that have banned cryptocurrency have cited the lack of clear regulation as a primary reason for prohibiting digital currencies. In nations where the legal framework is still evolving, governments prefer to err on the side of caution by banning cryptocurrency until they can create a more suitable regulatory environment. Egypt and Morocco have expressed concerns over the inability to tax or regulate cryptocurrency transactions, which they believe could lead to economic instability or exacerbate the challenges of implementing fiscal policies.

- **Ideological and Cultural Reasons**

In some countries, the ban on cryptocurrency is influenced by ideological or cultural reasons. For example, some Islamic countries, such as Egypt and Morocco, view cryptocurrency as incompatible with Islamic finance principles, which prohibit speculative and high-risk financial practices. In Islamic finance, activities such as speculation, gambling, and uncertainty (gharar) are considered haram, or forbidden.

- **National Security Concerns**

Certain countries also ban cryptocurrency over national security concerns, particularly due to the potential for capital flight or the facilitation of covert transactions. By banning or restricting the use of cryptocurrency, governments aim to prevent wealth from flowing out of the country through untraceable digital assets. China has cited national security concerns as one of the key reasons for its blanket ban on cryptocurrency trading and mining.

- **Technological and Infrastructure Limitations**

In some developing countries, the technological and infrastructure challenges of cryptocurrency adoption—such as the need for internet access, high-speed data processing, and specialized knowledge of blockchain technology—are simply too great to implement effectively. In these nations, the government may choose to prohibit cryptocurrency to avoid the technical difficulties and financial risks that could arise from trying to regulate or monitor its use.

- **Fear of Disrupting the Banking System**

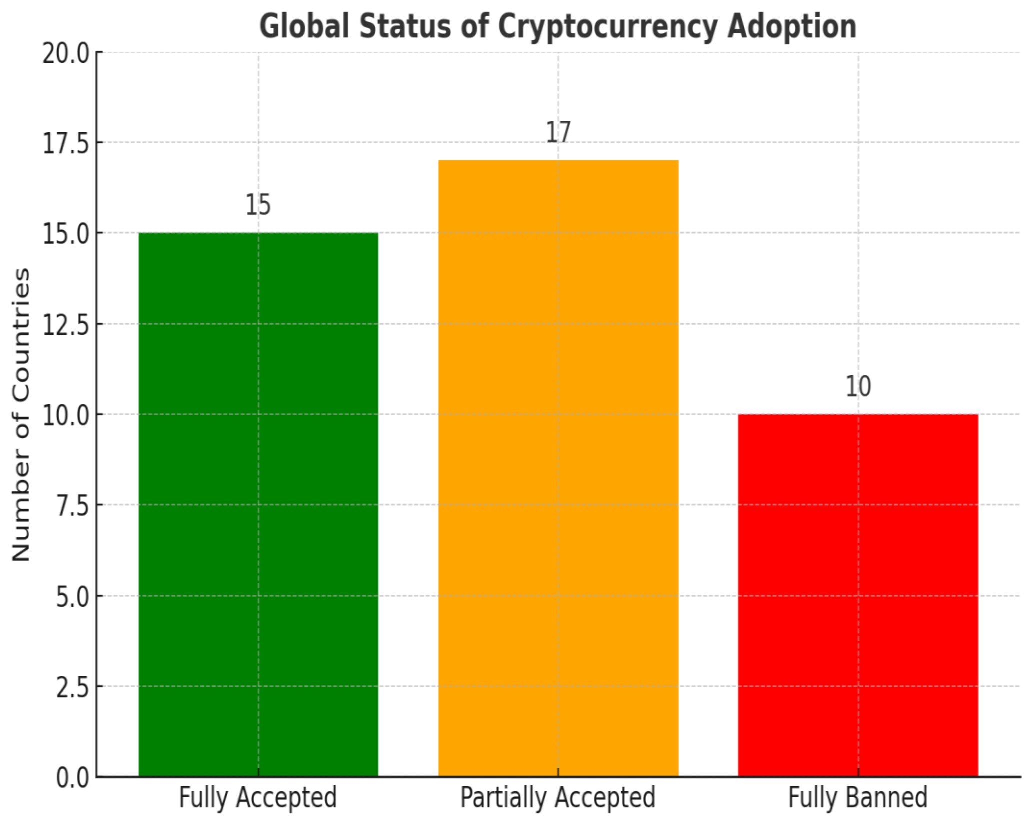
Many governments fear that cryptocurrencies could undermine the traditional banking system and disrupt monetary policy. Countries like Russia and Turkey have expressed concerns about the potential for cryptocurrencies to replace or bypass state-controlled monetary systems and banking infrastructures. By banning cryptocurrency, these governments aim to prevent the erosion of their monetary policies, which are critical to managing inflation, interest rates, and national debt.

Global Cryptocurrency Adoption Status (2024)

The global cryptocurrency landscape is diverse, with a clear divide between fully accepted, partially accepted, and banned countries. Below is a summary of the global status:

Table 1: Number of Countries by Adoption Status

Adoption Status	Number of Countries
Fully Accepted	15
Partially Accepted	17
Fully Banned	10



The trend indicates a growing acceptance of cryptocurrencies globally, but it is evident that the future of cryptocurrency will depend on how governments, regulators, and financial institutions handle the complex challenges posed by digital currencies.

Table 2: List of Fully Accepted Countries

Country	Key Reasons	Cryptocurrency Status for Legality and Payment
El Salvador	Economic growth, financial inclusion	Fully Accepted as legal tender and payments
Switzerland	Innovation, regulatory clarity	Fully Accepted as an asset for investment and payments
Malta	Digital innovation hub, regulatory clarity	Fully Accepted for investment and payments
Estonia	Innovation, blockchain adoption	Fully Accepted for investment and payments
Singapore	Financial sector innovation, regulatory clarity	Fully Accepted for payments and investment
Germany	Clear regulations, market adoption	Fully Accepted for investment and payments
Japan	Financial innovation, regulatory clarity	Fully Accepted for investment and payments
United States	Investment opportunities, financial innovation	Legal for investment and trading, regulated for payments
Canada	Regulatory clarity, innovation	Legal for investment, regulated for payments
Australia	Economic development, blockchain innovation	Fully Accepted for payments and investment
Portugal	Economic benefits, regulatory support	Fully Accepted for payments and investment
South Korea	Regulatory clarity, innovation	Fully Accepted for payments and investment
United Kingdom	Innovation, global financial hub	Fully Accepted for payments and investment
Luxembourg	Investment growth, regulatory support	Fully Accepted for payments and investment
Brazil	Financial inclusion, innovation	Fully Accepted for payments and investment

Table 3: List of Partially Accepted Countries

Country	Key Reasons	Cryptocurrency Status for Legality and Payment
India	Regulatory uncertainty, investor interest	Legal for investment, restrictions on payments
China	Control over financial system, restrictions on trading	Legal for investment, banned for payments
Russia	Investment and innovation potential, regulation	Legal for investment, restrictions on payments
Turkey	Financial stability concerns, regulatory development	Legal for investment, restrictions on payments
Mexico	Financial inclusion, regulatory concerns	Legal for investment, restrictions on payments
Indonesia	Regulatory concerns, control over financial systems	Legal for investment, restrictions on payments

South Africa	Investment concerns, regulatory development	Legal for investment, restrictions on payments
Nigeria	Financial innovation, regulation issues	Legal for investment, restrictions on payments
Argentina	Inflation concerns, regulatory framework	Legal for investment, restrictions on payments
Thailand	Innovation potential, regulatory issues	Legal for investment, restrictions on payments
Vietnam	Financial inclusion, regulatory controls	Legal for investment, restrictions on payments
Malaysia	Regulation and market development	Legal for investment, restrictions on payments
Philippines	Financial inclusion, control concerns	Legal for investment, restrictions on payments
Ukraine	Innovation, regulatory clarity	Legal for investment, restrictions on payments
Kenya	Financial innovation, regulation concerns	Legal for investment, restrictions on payments
Colombia	Blockchain innovation, regulatory concerns	Legal for investment, restrictions on payments
Chile	Financial innovation, regulatory controls	Legal for investment, restrictions on payments

Table 4: List of Banned Countries

Country	Key Reasons	Cryptocurrency Status for Legality and Payment
China	Capital control, risk to financial stability	Banned for both payments and investment
India	Concerns over money laundering and financial security	Banned for payments, investment restrictions
Algeria	Concerns over financial stability and security	Fully banned for payments and investment
Bolivia	Legal risks, financial stability concerns	Fully banned for payments and investment
Morocco	Financial instability, fraud risks	Fully banned for payments and investment
Nepal	Lack of regulatory framework, illegal activities	Fully banned for payments and investment
Bangladesh	Financial stability concerns, illegal activities	Fully banned for payments and investment
Indonesia	Control over financial system, illicit activities	Fully banned for payments and investment
Egypt	Religious and financial concerns	Fully banned for payments and investment
Qatar	Financial system control, regulation issues	Fully banned for payments and investment

Conclusion

The global adoption of cryptocurrency is a complex and dynamic process, with countries around the world taking different approaches based on their unique economic, political, and cultural contexts. While some countries have embraced cryptocurrencies for their potential to drive innovation and economic growth, others remain cautious due to concerns about financial stability, consumer protection, and the potential for illicit activities. The global landscape of cryptocurrency adoption is still evolving, and as more countries explore and implement regulatory frameworks, the future of cryptocurrency will likely depend on striking a balance between innovation and regulation.

As digital currencies continue to gain traction, it will be important for governments and international organizations to collaborate and establish guidelines that address the risks while fostering innovation. The rise of central bank digital currencies (CBDCs) may further shape the global cryptocurrency landscape by offering regulated alternatives that could complement or even challenge decentralized digital assets in the future.

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IMPACT OF DIGITAL TRANSFORMATION ON PERFORMANCE OF PUBLIC SECTOR BANKS IN INDIA: A LITERATURE REVIEW

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Dr. Mayuri Dhameliya**

ABSTRACT

The need for a digital public sector bank, capable of operating 24/7, that delivers innovative, secure, and accessible solutions, has become increasingly clear (particularly for empowered and tech-savvy clientele). Digital transformation signifies a transition from traditional to digital forms of technology. Following this premise, this paper aims to assess whether the execution of digital transformation initiatives in India has resulted in a change in the performance of public sector banks (PSBs). Data for this analysis was collected from various secondary sources, such as research articles, governmental publications, white papers, RBI bulletins, and the IBA website. Ultimately, this study indicates that digital transformation has substantially allowed PSBs to lower operating costs. This occurs largely because customers enjoy higher interest rates on deposits, coupled with reduced service fees. However, these benefits go beyond simple financial incentives; PSBs also offer the lowest borrowing costs, enabling them to provide competitive loan interest rates. Although the trend toward technological change is promising, the downside for public sector undertakings (PSUs) banks is the substantial investment required to establish these cost-efficient systems. Overall, digitization has enabled PSBs to operate more effectively in this highly competitive environment. However, the implications of this shift are multifaceted (and can be both positive and negative). Although PSBs have enhanced their performance, they must continually adapt to remain ahead of the competition. This is crucial because the landscape is ever-evolving and failure to keep pace could result in setbacks. But, with the right strategies in place, PSBs can thrive even in challenging circumstances.

***KEYWORDS**: Digitalization, Banking, Service, Customer, Fintech.*

Introduction

The banking sector is no mean factor in the growth and development of an economy. This sector is involved in maintaining and creating efficient payment systems that satisfy all the stakeholders of a country (government, business, and citizens). Secondly, the nationalization of private banks in the public sector in 1969 was a powerful move towards total economic and financial growth and also towards innovation in agricultural finance in India. Digital banking can be defined as an all encompassing term that incorporates the total cum digitization of banking operations, with banks having little or no physical presence but an ongoing online presence and leaving the clients with a few need to visit banks (not even go to the branches) accessing the banking products and services through electronic or online platforms. The digital banking in India commenced in the late 80s with the purpose of improving the service, optimizing the accounting process, and also providing an easy information system in organizations. Dr. C. Rangarajan's headed the first committee on computerization of Indian banks that was set up in 1988

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by the Reserve Bank of India. In 1990, ICICI Bank emerged as the first bank to offer digital banking services to its retail customers. Not until 1999 did digital banking gain momentum, mostly thanks to lowered costs of internet access and growing appreciation and confidence from people in internet use. The introduction, and then the migration to, standalone personal computers, led to banks slowly deploying the internet and the use of the computers mainly in a local area network (LAN) environment. Core Banking has meant that banks have become Core Banks, with branches being merely a function of the bank. One further step closer to the more luxurious experience of ubiquitous banking services anytime, anywhere CBS has allowed banks to provide their customers with more convenient means of accessing their services. Many such core banking platforms have come into prominence amongst those designed by Infosys: The players are Finacle (Wipro), TCS: BaNCS, i-flex FLEXCUBE.

With the fourth industrial revolution upon the world, post Covid-19 pandemic, almost every business running in many industries and verticals is heading to AI, ML, IoT, Big Data and other current technologies to automate and optimize their operations. Today, even the Indian government has made many initiatives to bring in technology widely for large scale adoption in different areas. Many sectors, from manufacturing to retail, logistics to hospitality, tourism to education, have been caught up in the wave of digital disruption. The COVID-19 situation sprang successfully as a new factor for the digital banking future of India. During this period, India has seen immense growth in digital adoption. Transformation at the micro level has been made possible by emergent new digital participation from other financial institutions. Successful UPI and QR code payments have been enabled by the Indian banking industry, which is, in itself, setting up the model of the 'banking model of the future'.

These key growth factors are the basis for the digital transformation of the Indian banking industry.

- Banks build a strong base of trust, raising awareness among customers. They have a large customer base with a digital platform as a brand.
- Their assets have been weighted by existing financial services. Banks bring a unique and compelling value proposition in their business services, have 100% automated technology systems, and maintain high digital performance through work force flexibility.
- As data and analytics are used in marketing and credit.
- The risk management in digital banking in the banking sector is rapidly increasing and increasingly responsible.

Review of Literature

Digitalization of Banking Sector – Jyoti Suraj Harchekar (2018). The focus of this essay centers on changes in digital banking services, data storage shifts as required by new business and identification technology, the merging of social banking on mobile devices, cross information sharing of data between customers and outside organizations, and the growing rise of global plug-n'play mobile phones. Some of the technology based solutions being used by banks are the BaNCS, Finacle and Flexqube platforms. This paper aims at evaluating the advantages and disadvantages of technology in the banking industry. The website consults previous works, websites, and articles from newspapers and journals to do so. The biggest difficulties of digitization are old-fashioned banking processes, poor connectivity in rural areas, a lack of data security, a lack of qualified workers, and poor client awareness.

The impact of digital banking services on performance of commercial banks (2020) Wadesango, N., & Magaya, B, The study aims to explore how digitalization will impact the integration of digitalization in the banking sector in Zimbabwe and how it will influence the formation of financial products and services by banks and ultimately the satisfaction of banks and their customers' performance. To analyze the effect of digital banking performance, we collect Primary Data including through a collection sheet, and further analyze it using regression analysis. The results reassert the conclusion that online banking transactions predicted ROA significantly and positively, and increased by online transactions also increased ROA. This study's recommendations or management to improve financial performance in commercial banks through digital banking.

Rachana Kalsan - Impact of Digital Banking in India: This report Trends and Challenges (2020) focuses on the Indian government's efforts to make India into a cashless economy, and to change the lives of people through the seamless banking. It studies the cost, convenience, control and customer satisfaction, the MICR to LPM start up process and now CRM based banking services to connect management and customers. What we would like the participants to achieve by the end of the course is to determine the role, the different services, the dos and don'ts and to understand the challenges of the future of digital banking. The goals were determined with secondary data. The use of mobile banking, customer service and E-banking has increased in everyday transactions, according to this study. The government's popular JanDhan account systems have also been noted to be onboarding mobile banking customers into the system. The limitation of the study is due to technical failures of banking systems from customer perception.

Does Electronic Banking Improve the Bank Performance of Indian Public Sector Bank: Abhay Singh Chauhan, Richa Banerjee, and Subeer Banerjee (2023). A sturdy post covid scenario. This paper is accordingly set out to find out how e-banking affects the performance of a bank. Using 17 years of secondary data of the top 10 public sector banks, analysis has been done using the ordinary least squares test. The finding indicates that PSU banks should start a financial literacy campaign to educate and train new and illiterate customers, target rural and remote areas to make use of banking services. The scope of study is applied in the world's developing countries, comprising private sector banks.

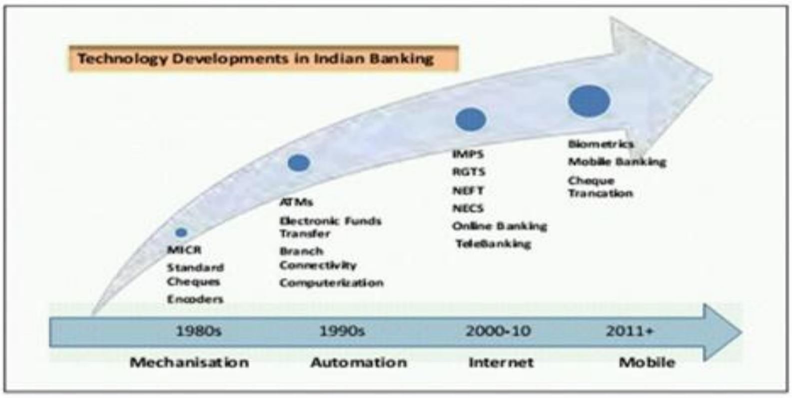
The Objective of the Study

- This work aims to identify the shift of technology in PSBs in India.
- To figure out the traditional vs. digital business model of PSBs in India.
- Research was taken into considering the impact of digital transformation on PSBs Performance.
- In understanding the future opportunities and challenges in India digital banking.

Data Collection

For this study, data were collected from secondary sources such as certain previous research papers, banking websites, RBI monthly and annual newsletters, and other Indian Banks Association reports.

Snapshot of Technology Developments in the Indian Banking Sector:



Shift of Technology in PSBs

This has provided the Reserve Bank of India with making regulations at the same time as offering suggestions to banks in order to achieve different goals. In India, the technology is now being used by the commercial banks by means of bank mechanization and automation. Bringing in MICR check processing and electronic funds transfers; linking bank branches and ATMs for 24/7 banking access are some of these. Banks have taken robust actions to strengthen payment and settlement systems by the Reserve Bank of India.

But if we examine the major factors behind the digital shift in public sector banks over the past 5 years, they can be summarized as:

- **Covid-19 as an eye-opener:** Contactless payments and digital banking grew in importance during the Covid pandemic.
- **Changing bank demographics:** But banks now are seeing a new customer base that demands a lot of digital platforms. They are early adopters of the internet, and banks must deal with them.

- **Increased competition for banks:** It's not just private vs public banks; there are fintechs dishing out products that are attractive. Strong branding and robust cybersecurity in banking are expected to attract customer interest to digital banks.

Traditional vs. Digital business model of PSBs

PSB banks need to digitize their current operations. Building out a brand-new digital banking entrepreneurship from scratch that can move quickly and correctly to keep pace with customer expectations. Digital banks offer more services than conventional banks. The following table shows clearly how aspects of both models.

Standard of Comparison	Traditional Banking	Digital Banking
Customer Services	The employee can attend a limited number of customers, and wait in line to make transactions.	The customer doesn't require standing in queues to perform their banking transactions.
Cost	Includes lots of operational as well as fixed cost.	Lower operational cost.
Accessibility	Customers require visiting the bank branches and within the bank business hours.	Customers don't have to wait for the bank to open; they can access their banking transactions anywhere and anytime.
Human resources	Banks have to recruit sufficient and skilled manpower to run the branches efficiently.	Limited staff are required, as the majority of services can be offered on an application/software basis.
Allied Services	Focus on Core banking as CASA, Advances, NPA management	Digital Banking services like Digital lending, Investment, Remittance, and payment gateway.
KYC-AML establishment and Risk Management and Monitoring	It is impossible to monitor any financial transaction manually and implement KYC-AML and Risk management.	It is quite easy to monitor any financial transaction and has robust mechanisms for KYC-AML and Risk management.
Third-party vendor/corporate tie-ups	Not Third party or corporate tie-ups for business promotions.	Offer business through an agency or corporate channel partner to earn the profit along with new customer acquisitions.
Profitability	Banks earn good revenue by way of Interest on loans and charges as they have a number of client based and branch networks across India.	Due to limited tech-savvy customer based and limited presence, revenue is less and the heavy cost of technology reduces its profitability.

It means banks will not go away any time soon. They are still making big money. In fact, a lot more than digital banks. The reason being that although traditional banks have significantly higher overhead branches, offices and thousands of employees; they offer even more profitable financial products.

Impact of Digital Transformation on Performance of PSBs

Here is where India is on the cusp of a digital banking transformation. Today, banking is getting possible through cutting edge technologies, research, government backing… A few of the forthcoming prospects in digital banking in India are:

- **Cloud-Based Digital Banking:** A single piece of technology connects multiple different platforms. It makes it a flexible system and reduces the operational inefficiencies. Due to cloud technology, interfaces and experiences of users will get better. Over the past few years, we've seen major global banks, including Wells Fargo, Deutsche Bank, Goldman Sachs, and HSBC, among others, partner with Google Cloud, Azure and AWS to leverage cloud native front and back office operating models.
- **Big Data Analytics:** People in the world produce over 2.5 quintillion bytes of data a day. Taking in such incredible amounts of data also requires very sophisticated technology to manage, examine, and use. Data helps analyze product details, customer bases, market trends, and helps to identify financial fraud.

- **Blockchain Technology:** A secure money transfer, deposit and many other service networks via a multi-tiered decentralized network. And it can be used as an affordable and fast way to make cross border transactions. The main activity of a bank is to provide loans and this technology allows loans to be made faster, more secure and easier.

As risk/threat can be considered under, the side effect of digital banking transformation is directly associated with that. Security Threats - With online banking, this is a very big issue. Banks are very vulnerable to security threats because of external perils like hacking, sniffing and identity theft. Also, banks have internal risks, namely, fraud perpetrated by employees or collaborators collaborating with customers.

- **The lack of knowledge** on how to use the e banking services is the main limitation in using e banking services in India. A finance report said that India's literacy in finance is just 24 to 29%. Fear factor: The biggest obstacle to online banking is that most people in rural areas, and a lot of the older generation, prefer traditional banking methods. Banks also face internal risks, especially fraud committed by employees or collaborators collaborating with customers.
- **Financial Literacy Customer Awareness** - The main limitation in India regarding the use of e-banking services is the lack of knowledge among people on how to use these services. According to NCFE's latest survey report, India's financial literacy rate is only 24-29%.
- **Fear factor**: The major barrier to online banking is that the older generation and people in rural areas mostly prefer traditional banking methods. E-banking services pose the barrier of fear in regard to losing money while transacting online.
- **One of the significant knocks against bankers' ability and willingness to embrace innovative technology** they haven't even heard of being implemented is that bankers simply haven't been trained on these technologies. Banks today have to train at all levels about the changing trends of information technology.

Findings, Suggestion and Conclusion

It is architecture based on Assume and demonstrates a transition in the migration from traditional banking to digital banking that is taking place post the COVID-19 epidemic in India. Yet, in reality, banks have come to realize that, over time, the customer is actually the real leader of the banking industry. Bank progress and transformation are at their request. And in fact, there has been no full transition to digital banking, as many still prefer the old traditional banking service, and that transition will only be entirely away from it for so long as customers want.

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AUDITOR'S RESPONSIBILITY IN FRAUD DETECTION AND PREVENTION: A STUDY WITH REFERENCE TO CHARTERED ACCOUNTANTS OF GUJARAT STATE

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ABSTRACT

India is emerging as a powerful economy with its global presence. Open and Liberalised Indian economy has created immense business opportunities and it has largely contributed in the growth of the Indian economy. This has not only given larger market to cater but also increased the level of competition and associated risk. Along with business opportunities, the scope for the fraudulent practices has also widened. The world has observed changing face of fraud from bribery, embezzlement and cheating to more sophisticated way of financial shenanigans, white collar crime and cyber-crime. This has raised question about the role of auditors in detecting and preventing frauds. Since, auditors are the one who has access of all financial information, it is expected that they could detect fraud before it hits economy hard. This study has been done with the responses received from 362 Chartered Accountants of Gujarat state to know who they think are responsible for fraud detection and what techniques they suggest to reduce future frauds. Study reveals that top level management and internal auditor are highly responsible where else, external auditors and regulatory bodies are moderately responsible for fraud detection. To avoid future frauds, they have emphasised on using advanced monitoring software, data mining techniques and strong fraud control policies.

KEYWORDS: *Corporate Frauds, Detection and Prevention of Fraud, Fraud Control Techniques.*

Introduction

India has witnessed tremendous growth after liberalisation and resulted in to flourishing business activities which has largely contributed in the growth of the Indian economy. Globalised and liberalised business environment has not only opened up the doors for the business across the nation but also made the Indian market possibly the largest market for the global giants to come and make their presence felt. The widened market place and global business partners have surely increased the opportunities so as elevated the bar for the competition and expectation of the stakeholders.

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Global level of competition and rising expectations of the stakeholders' forced corporates to engage in the skilful deception to fool their stakeholders and hide poor performance especially when the time is tough. The rising number of fraud cases reflects the menace of fraudulent practices and this has become the prevalent and persistent problem encountered by all. RBI recently revealed that over 23000 bank fraud cases involving Rs. 1 lakh crore in five years reported in India. Only state-run banks have reported 8670 "loan fraud cases" of nearly Rs. 61000 crore over last five years up to March 31, 2017. More surprisingly from the total cases of fraud it is assumed that only 10 % cases are registered and others remain to be unnoticed for very long. Such undetected frauds are the major threat to the developing economy like India. It affects not only to the economy financially but also socially and psychologically to individuals, business and society at large.

Objective of Study

The study has been done with an objective to understand what auditors think about their role in detecting fraud along with what techniques they suggest to prevent future possibilities of fraud.

Literature Review

Wilks and Zimbelman (2004) there is an importance of audit policy and action plans to improve fraud prevention and detection. In addition, auditors must always consider adopting unpredictable audit strategies, such as varying the nature, extent and timing of their audit tests to improve the effectiveness of fraud detection. Auditors ought to also align their resources with audited fraud risk according to changes in auditing standards. Hall (2005) has found that speaking to people and observing their behaviour is the best for fraud detection. Bhasin (2013) has conducted an empirical study on skills required for accountant to locate frauds. The researcher observed that accounting frauds and scams are perpetual and only basic core skills are not sufficient for accountants and auditors to detect and prevent frauds. The researcher concluded that Forensic accountants are those professional experts who possess some special and extraordinary skills and along with the sixth' sense they can uncover frauds. Furthermore, in his another research in (2015)he has suggested stiff penalties, exemplary punishments and effective enforcement of law with the right spirit for the increasing rate of white collar crimes.

Research Design

To fulfil the objective researcher has collected data from 362 practicing Chartered Accountants of Gujarat state having experience more than 10 years. Descriptive analysis and coefficient of variation is used to find magnitude of auditor's responsibility in fraud detection and prevention. Researcher has also attempted ranking based on descriptive analysis to find out top five techniques to fight against future frauds.

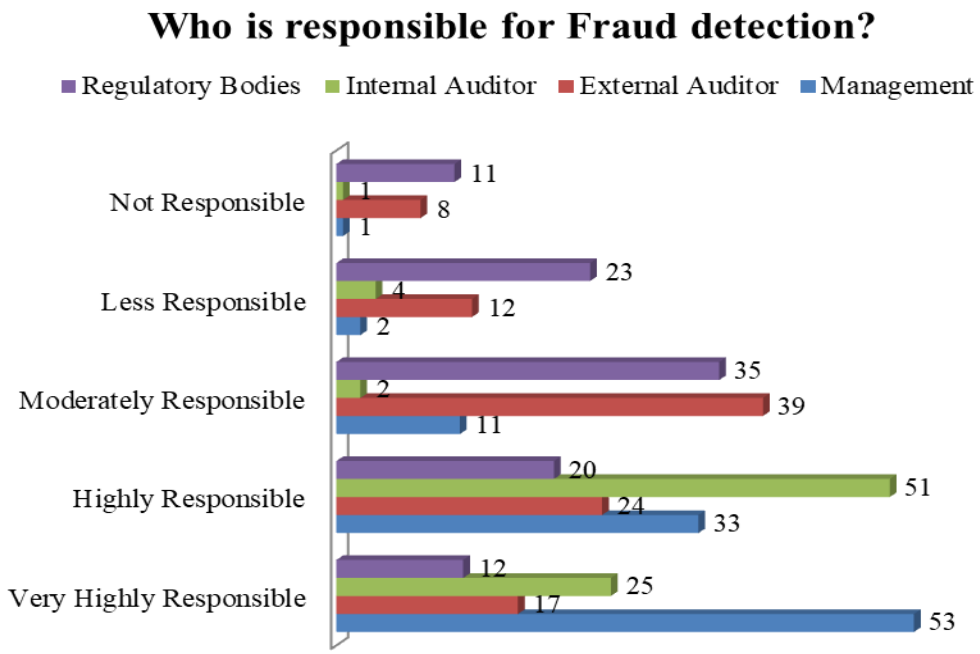
What is Fraud?

Fraud is broad legal concept covering different intentional activities undertaken to secure an unfair or illegitimate gain. Fraud generally covers activities such as theft, corruption, conspiracy, embezzlement, money laundering, bribery and extortion. It is therefore very evident that fraud is present with us for long in one or other forms. Corporate frauds include deliberate activities against the good of companies which can be classified in to three;

- **Internal frauds** that are committed by people inside the organisation by deliberate misuse or misappropriation of organisational resources. It includes, Asset misappropriation, Fraudulent Statement and Corruption.
- **External frauds** are committed by vendors, customers or third party. It broadly includes activities such as; bribery, bid rigging schemes, attempt to return stolen good to get refund, bad cheques, theft of intellectual property, cyber-crime etc.
- **Fraud against Individuals**, wherein companies or agents of the companies devise variety of schemes to cheat individuals. Most of these schemes are investment frauds such as; Ponzi schemes, pyramid schemes, identity theft, cloning of cards etc.

Who is Responsible for Fraud Detection?

In spite of having an excellent regulatory systems there are increasing number of fraud cases come of surface every day. It clearly indicate that there exist a perfect environment for fraud and unless those remain undetected, will be disastrous for the economy as a whole. The most important thing is to know whose responsibility is it to detect the fraud.



It has been found in the investigation that CAs believe (53%) management is very highly responsible and 51% believe internal auditors are highly responsible for fraud detection. On the other hand external auditor (39%) and regulatory bodies (35%) are moderately responsible for fraud detection.

Responsibility of Auditors in Fraud Detection and Prevention

It largely believed that management and chartered accountants/auditors are responsible for detection of any fraudulent practices, which is very evident as they have all primary information about the company and specially auditors play very important role when it comes to ensure the reliability of financial statements. They have access of financial information at the first hand and are also expected to verify them to check any inconsistency. Auditors exercise due diligence as well as use various approach to check the validity and reliability of the available information.

From the study it has been revealed that auditors are highly responsible to prevent all types of fraud and error, as it is evident from the descriptive analysis which shows highest coefficient of variation of 45.34%. Auditors are also responsible for any material weaknesses in company's internal control system (33.51%) and to report all omissions and frauds in an auditor's report (31.76%). It is also observed that respondents believe that there should be an audit standard that would make auditors responsible for detecting and reporting frauds (32.40%).

Table 1: Magnitude of Auditors Responsibility in Fraud Detection and Prevention

Descriptive Statistics					
		Mean	**Std. Deviation**	**Variance**	**Coefficient of Variation**
It is the responsibility of the auditor to prevent fraud and errors.	362	3.2514	1.29363	1.673	39.79%
It is the responsibility of the auditor to prevent all fraud and errors.	362	2.5331	1.14841	1.319	45.34%
It is the responsibility of the auditor to report all omissions and frauds in the auditor's report.	362	3.5912	1.14041	1.301	31.76%
The auditor is responsible for any material weaknesses of the company's internal control system.	362	3.5000	1.17275	1.375	33.51%

There should be an audit standard that would make auditors responsible for detecting and reporting frauds.	362	3.4696	1.12411	1.264	32.40%
Auditors should perform additional procedures in their attempt to uncover fraud.	362	3.6961	.95403	.910	25.81%
Auditors should assess the activity of the internal control department related to fraud detection	362	3.8425	.90248	.814	23.49%
The statutory auditor should assess the internal auditors' activity.	362	3.5442	1.04972	1.102	29.62%
Auditors should develop additional audit procedures to enable identification and review of all transactions with related parties.	362	3.8867	.84597	.716	21.77%
It is the responsibility of the auditor to uncover fraud and to report this to the appropriate authorities.	362	3.6740	1.04144	1.085	28.35%
Auditor should evaluate whether there is "substantial doubt" about a company's ability to continue as a going (viable) concern.	362	3.8702	.89767	.806	23.19%
Auditor should assess management's style to determine if the style might lead to fraudulent financial reporting.	362	3.6298	1.02110	1.043	28.13%
Auditor should ensure that the management conveys the findings of the audit to board of directors or audit committee (whichever applicable).	362	4.0884	.83080	.690	20.32%
Valid N (list wise)	362				

Techniques to Fight against Future Frauds

The following table describes descriptive statistics of techniques to fight against fraud comes up with the highest coefficient of variation (23.85%) of Software to monitor communication as a preferable technique among all and followed by social network analysis to identify unethical behaviour (22.58%), conduct and disciplinary standards (19.68%), use of computer assisted data mining techniques (19.45%) and fraud control policy (19.30%).

Table 2: Top Five Techniques to fight against future fraud

Descriptive Statistics						
	N	**Mean**	**Std. Deviation**	**Variance**	**Coefficient of Variation**	**Rank**
Using advanced software to monitor transactions	362	4.5608	.64710	.419	14.19%	
Advanced technology to retrospectively identify fraudulent transactions	362	4.0414	.57746	.333	14.29%	
Software to monitor communication	362	3.7818	.90207	**.814**	**23.85%**	**1**
Social network analysis to identify unethical behaviour	362	3.9751	.89748	**.805**	**22.58%**	**2**
Disk imaging (forensic tool)	362	4.2818	.75036	.563	17.52%	
Fraud control policy	362	4.1326	.79756	**.636**	**19.30%**	**5**
Fraud risk assessment	362	4.2707	.70509	.497	16.51%	
Conduct and disciplinary standards	362	4.1271	.81222	**.660**	**19.68%**	**3**
Use of Computer Assisted Data Mining Techniques	362	4.2652	.82975	**.688**	**19.45%**	**4**
Internal audit review	362	4.5552	.61242	.375	13.44%	
Valid N (list wise)	362					

Conclusion

From the study it can be said that along with the verification of financial information, auditors are responsible for; preventing all types' fraud and errors, any material weaknesses in company's internal control system and reporting all omission and fraud in auditors report. They can advise companies to make use of computer assisted monitoring techniques, device effective internal control system and ethical code of conduct to reduce opportunities to commit fraud. Moreover, considering role of auditors to be important in fraud detection, they should be more cautious and needed to be skeptical while investigating financial statements. If needed they must develop additional procedure, ask for more information and present report reflecting true picture to concerned authority or audit committee. They can play pivotal role in the process of deterring frauds by adhering to the professional ethics and their responsibility to the society and economy at large.

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CHALLENGES IN ECONOMIC POLICY FORMATION WITH DIGITAL MARKET DISRUPTIONS WITH REFERENCE TO INDIA

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ABSTRACT

The swift development of digital technologies in India has caused major upheavals in conventional markets, making it extremely difficult to create efficient economic policies. The gig economy, fintech, digital payment systems, and e-commerce have all changed important industries, posing risks as well as opportunities for economic expansion. Concerns about market concentration, consumer protection, data privacy, taxation, and the changing nature of work arise because these disruptions frequently surpass the capabilities of current regulatory frameworks. This study looks at the particular difficulties Indian policymakers have in dealing with these problems in light of the disruptions caused by the digital market. It examines the intricacies of taxing digital goods and services, regulating digital platforms, and assessing the effects of automation and the gig economy on labour markets. The study also explores India's challenges with cybersecurity risks and protecting personal information in the face of the country's increasing reliance on digital technology. This essay explores these issues and provides suggestions for how India can modify its economic policies to better suit the quickly evolving digital environment.

KEYWORDS*: Digital Economy, Economic Policy, Market Disruption, Taxation, Regulation, Labour Markets, Data Governance, Competition.*

Introduction

Global markets have undergone significant change in recent years due to the rapid evolution of digital technologies, and India is no exception. E-commerce, fintech, digital services, and the gig economy have all grown at an unprecedented rate in India, one of the world's fastest-growing digital economies. Traditional market structures have been upended by the digital revolution, presenting policymakers with both new opportunities and difficulties.

India's economic policy, which has historically been centered on traditional markets and industries, must now adjust to the quick speed of digital disruption and technological advancement. As digital platforms, AI-driven services, blockchain technologies, and data-driven business models proliferate, policymakers in India face a number of difficulties, including striking a balance between expansion and regulation, guaranteeing fair access to technology, defending consumer rights online, and preserving data security and privacy.

This paper examines how India's economic policies have changed in response to disruptions in the digital market. It looks at how innovation, technology, and economic regulation come together to create new policy challenges and emphasizes the necessity of a flexible and dynamic approach to

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policymaking. In order to address the opportunities and risks that come with India's transition to a more digitally integrated economy, the analysis focuses on important industries like e-commerce, digital finance, and digital infrastructure.

The ultimate objective is to offer a thorough grasp of how India can manage these upheavals and create policies that not only encourage innovation and development but also guarantee a just, inclusive, and sustainable digital economy for everybody.

The Digital Economy: An Overview

Economic activities that rely on digital technologies, such as social media, e-commerce, digital payments, digital communication, the internet, and the extensive ecosystem of digital goods and services, are collectively referred to as the "digital economy." All around the world, these technologies are changing industries and generating new economic models. The digital economy is expanding quickly in nations like India, making a substantial contribution to both GDP and employment. For the creation of economic policy, the incorporation of digital technologies into conventional markets is posing both opportunities and difficulties.

With programs like Digital India, which seeks to improve digital literacy, expand online infrastructure, and increase access to government services through technology, India has made significant progress toward embracing the digital economy. A significant portion of the population can now access digital services thanks to the quick growth of internet access, reasonably priced smartphones, and mobile data. India has one of the world's fastest-growing digital economies. The Ministry of Electronics and Information Technology (MeitY) projects that the digital economy in India will grow from $500 billion in 2020 to $1 trillion by 2025. The following are important facets of India's digital economy:

- **E-commerce:** With businesses like Amazon, Flipkart, and Reliance Jio revolutionizing the retail industry, India's digital marketplace is among the fastest-growing in the world. By 2026, the e-commerce market in India is predicted to reach $200 billion, with companies like Amazon, Flipkart, and Reliance Jio growing their market share.
- **Digital Payments:** The rise of digital payments, made possible by platforms such as UPI (Unified Payments Interface), has increased financial inclusion.
- **Fintech:** The way Indians manage their finances has been totally transformed by peer-to-peer lending and digital finance innovations like Paytm and PhonePe mobile wallets. The fintech industry in India has grown rapidly, and by 2023, digital payments will have reached a value of over $84 trillion.
- **Startups and Innovation:** With tech companies working in industries like ed-tech, health-tech, and agri-tech, India is home to a thriving startup ecosystem. With more than 50,000 startups, many of which are tech-based, India has emerged as the world's third-largest startup ecosystem.

Despite the quick expansion, there are a number of policy and economic issues that call for calculated action.

E-commerce, digital platforms, data-driven services, and other economic activities powered by digital technologies are all included in the digital economy.

Among the main characteristics of the digital economy are:

- **Globalization and Interconnectedness:** Businesses and consumers can communicate across borders with little difficulty thanks to the internet.
- **Platformization:** Big names in the digital economy, like Google, Uber, and Amazon, function as platforms that compile information about users, services, and data.
- **Data as a New Asset:** Data is now a significant economic asset that spurs innovation and the development of new business strategies.
- **Automation and AI:** As these technologies advance, they are changing labor markets and industries, rendering some jobs obsolete while generating new ones.

These characteristics offer a variety of novel economic dynamics that conventional economic models and policy frameworks are unable to adequately address.

Review of Literature

Traditional business models have been upended by digital technologies such as blockchain, e-commerce, artificial intelligence (AI), and digital financial services. For example, Chakravarty and Seetharaman (2020) stress that India's quick adoption of digital technologies has increased financial inclusion, reduced transaction costs, and opened up new markets, but it has also sparked worries about digital monopolies, market concentration, and privacy concerns. Traditional economic policy has been rethought in light of the rise of websites like Amazon, Flipkart, Paytm, and others, particularly with regard to consumer protection and competition law.

A study titled "Digital India: Opportunities and Challenges" was carried out by **Kumar (2019)** with the aim of examining the main elements of the Digital India initiative and assessing its possible effects on different industries. The research uses a qualitative methodology, incorporating case studies, expert interviews, and a thorough examination of government policies. The study points to important prospects in fields like skill development, digital infrastructure, and e-governance. But it also draws attention to issues with cybersecurity, the digital divide, and the application of policies.

The emergence of gig economy platforms like Zomato, Swiggy, and Uber has caused a disruption in conventional labor markets. The socioeconomic effects of digital platforms on Indian labor markets are examined by **Basu (2019).** Gig workers deal with unstable incomes, limited labor rights, and a lack of job security. It has been difficult for legislators to modify labor laws to accommodate these new job types. The need for sufficient social security benefits and equitable wage laws for digital workers, who do not fall under traditional employment frameworks, are among the difficulties in formulating economic policies.

In order to evaluate the effect of digital financial services on improving financial inclusion and accessibility in India, **Sharma and Singh (2020)** carried out a study titled "Impact of Digitalization on Financial Inclusion in India." The research uses a mixed-methods strategy that incorporates secondary data analysis, interviews, and surveys. Increased financial inclusion and the use of digital financial services are positively correlated, according to the research. It emphasizes how programs like UPI and Jan Dhan Yojana help increase access to banking services.

Despite its quick expansion, India's digital economy is hampered by large gaps in infrastructure, digital literacy, and access to technology. According to **Rath and Jha (2020)**, existing disparities are made worse by the digital divide, especially in rural areas. Making sure that marginalized communities are not left behind by digital disruptions is a challenge for policymakers. Even though programs like Digital India seek to close this gap, putting inclusive policies into practice is still very difficult. To guarantee fair access to digital resources, a focused strategy is required, which might call for funding for digital infrastructure, digital literacy initiatives, and the production of locally relevant content.

In order to assess how well the e-NAM platform works to increase market access and revenue for Indian farmers, **Reddy and Roy (2018)** carried out a study titled "Digitalization in Agriculture: A Case Study of e-NAM." The research uses a case study design that includes fieldwork, surveys, and transaction data analysis from the e-NAM platform. According to the research, farmers who use the e-NAM platform see a noticeable increase in their income and market participation. It also points out areas like awareness and infrastructure that need more work.

In order to determine how well online education works to lessen the disruptions brought on by the COVID-19 pandemic, **Gupta (2021)** carried out a study titled "Impact of Online Education during the COVID-19 Pandemic." The research uses a mixed-methods approach, integrating teacher and student surveys with an examination of usage data from online learning platforms. The study emphasizes the difficulties instructors and students encounter when switching to online instruction. It also identifies elements like pedagogical approaches and technology availability that affect how effective online learning.

According to **Sharma (2023)**, India should review its taxation policies in light of the expansion of digital economies. This involves putting in place more precise rules for the domestic and international taxation of digital services. In addition to preventing tax evasion by major digital companies doing business in India, policymakers must make sure that tax laws do not hinder innovation.

These chosen research studies offer insightful information on a range of digitalization-related topics in India. Even though each study uses a different methodology and concentrates on a different domain, taken as a whole, they highlight how digitalization has the potential to revolutionize and its complex effects on Indian society and the economy. It is crucial to remember, though, that more study is required to address new issues and improve policy responses.

Problem Statement

Several economic sectors have seen substantial changes as a result of India's quick digitization. Research on the effects of digitalization is essential to thoroughly comprehend its effects on social, technological, and economic facets.

Objective of the Study

- To Examine How Digital Market Upheavals Affect the Indian Economy
- To Determine the Difficulties Policymakers Face in Handling the Digital Economy
- To Evaluate How Technology Affects Economic Inequalities.
- To Make Suggestions for Improving Economic Policy's Integration of Digital Market Trends
- To investigate how companies, governmental organizations, and individuals adopt technology.

Methodology of the Study

Secondary facts are typically evaluated for this study in order to gain a better understanding of digitalization. The process of looking at secondary facts involves gathering important information in a variety of ways. Books, newspapers, journals, research papers, and websites have all been used for this.

Government publications, policy documents, industry analyses, and economic indicators were examined. Understanding the past and present of economic policy formulation in the digital economy is made easier by this secondary data. Among the sources are:

- Reports on cryptocurrency and digital payments are provided by the Reserve Bank of India (RBI).
- Reports on digital India initiatives are provided by the Ministry of Electronics and Information Technology (MeitY).
- Reports from trade associations like CII, FICCI, and NASSCOM.
- Publications from the government about changes to economic policy and how they affect online markets.

Key participants in focus groups are chosen through the use of purposeful sampling. Experts from the public and private sectors who have firsthand knowledge of India's shifting digital market and economic policies are included in the sample.

Measuring Digitalisation of Countries

The report's Country Digital Index, which uses 30 metrics to gauge digital adoption in 17 developed and emerging digital economies—including Brazil, China, Indonesia, Russia, South Korea, Sweden, and the United States—ranks India as the second-fastest digitizing economy among the world's top 17.

Key Challenges in Economic Policy Formation in India

- **Control and Management of Online Marketplaces**
  - **Regulations' fragmentation:** Across multiple platforms, the digital economy frequently functions in a decentralized fashion. Regulations may vary depending on the industry (e.g., social media, fintech, e-commerce). The difficulty is in developing a single, cohesive regulatory framework that works for a variety of digital industries. Example: The Personal Data Protection Bill was drafted and first introduced in 2019 as a result of the Indian government's inability to adequately regulate data privacy. The bill's passage is still being delayed, though, by arguments over clauses like data localization and government access to private data.
  - **Data Security and Privacy:** India is becoming increasingly concerned about data security, particularly in light of the Personal Data Protection Bill (PDPB), as digital services gather enormous volumes of personal data. It's still difficult to strike a balance between innovation and consumer privacy protection.

- **Global Platforms and National Sovereignty:** India's digital landscape is dominated by a number of global digital platforms, including Amazon, Google, and Facebook. This has raised concerns about the loss of control over local data, competition, and revenue generation. Legislators need to figure out how to make sure these platforms respect regional customs while making a fair contribution to India's digital economy.

- **The Digital Economy's Taxation**
  - **E-commerce and Taxation:** Taxing digital transactions is still difficult, particularly when they involve cross-border transactions. The effectiveness of the equalization levy, which is a tax on digital ads and e-commerce transactions, established by the Indian government, for example, in capturing the entirety of the digital economy is still up for debate.
  - **Tax Evasion:** Transactions can occasionally be obscured by digital platforms, which can result in tax evasion. Traditional tax systems find it challenging to accurately capture value as a result of the gig economy, digital goods, and services that are delivered internationally.
- **Effects on the Gig Economy and Conventional Employment**
  - **Employment Displacement:** Jobs in conventional industries like manufacturing, banking, and retail are being replaced by automation, artificial intelligence, and digital tools. The workforce must retrain to meet the demands of the digital economy, even though it has brought about new opportunities, particularly in the tech sector.
  - **Regulation of the gig economy:** Concerns about fair wages, social security benefits, and labor rights are raised by the growth of the gig economy, which includes delivery drivers, independent contractors, and other contract workers. Questions concerning workers' rights, taxes, and employment standards have been brought up by digital platforms such as Uber, Ola, and Swiggy.
- **Digital Service Access and Financial Inclusion**
  - **Digital Divide:** There is still a sizable digital divide between urban and rural areas, even with the fast internet penetration. Full participation in the digital economy is still hampered by a lack of access to smartphones, reasonably priced internet, and digital literacy. This is especially true for communities that are marginalized.
  - **Financial Exclusion:** Although digital payment systems have greatly increased financial inclusion, there are still issues with guaranteeing that individuals in rural areas, particularly those who are elderly or lack digital literacy, have access to basic services like digital banking, loans, and insurance.
  - **Digital Literacy:** Many Indians still struggle to grasp the fundamentals of digital literacy, which limits their potential to take full advantage of the digital economy. The public and private sectors need to work together to improve everyone's digital skills. 5. Infrastructure Challenges
  - **Broadband Connectivity:** While urban areas enjoy high-speed internet access, rural and remote regions still face poor internet infrastructure. The success of India’s digital economy will depend on expanding internet infrastructure nationwide.
  - **Cybersecurity:** As digital technologies are used more frequently, there is an increase in cyberthreats. From data breaches to cyberattacks on vital infrastructure, India faces many cybersecurity challenges that call for more robust policy frameworks and public-private cooperation.
- **Fair Competition and Consumer Protection**
  - **Market Dominance and Anti-Competitive Behavior:** Competition may be suppressed by the dominance of a small number of international digital platforms. Smaller companies, particularly startups, might find it difficult to match the resources of multinational behemoths, which could lead to monopolistic practices.
  - **Consumer protection:** Using data and conducting digital transactions frequently exposes customers to unfair practices, fraud, and identity theft. To preserve confidence in the digital economy, consumer protection laws pertaining to digital services must be strengthened.
- **The Green Economy and Digital Infrastructure**

- **Sustainability and Environmental Impact:** Although the digital economy promotes economic expansion, it also has an impact on the environment.
- Carbon footprints are caused by energy-intensive technologies, data centers, and e-commerce logistics. To control the effects of digital infrastructure on the environment, policymakers must create long-term solutions.
- **Digital Innovation for Sustainability:** Digital technologies have the potential to encourage environmentally friendly innovations. India has the ability to develop a "green" digital economy by incorporating digital technologies into its sustainable agriculture, water management, and renewable energy sectors.

- **Examples and Case Studies of India's Digital Market Disruptions**
  - **E-commerce and Retail:** Flipkart and Amazon are dominating the Indian online retail market, which has expanded dramatically in recent years. Traditional brick-and-mortar retail businesses have been disrupted by the growth of e-commerce. The difficulty for legislators, however, is striking a balance between the preservation of traditional retail jobs and market structures and the expansion of online platforms.
  - **Digital Payments and Fintech:** India's financial industry has undergone a revolution thanks to the emergence of fintech companies and mobile payment systems like Paytm, PhonePe, and Google Pay. Government programs like Jan Dhan Yojana and Digital India have promoted the move to digital payments. However, this shift presents issues with cybersecurity, financial literacy, and rural population inclusion.
  - **Health and Education:** In India, telemedicine and EdTech have grown rapidly, particularly during and following the COVID-19 pandemic. Even though digital tools have made healthcare and education more accessible, issues with equity, digital infrastructure in rural areas, and reaching the most marginalized populations still exist.

- **Findings/ Result**
  - India's digital transformation could lead to substantial economic expansion, better governance, and job creation. Infrastructure, regulation, skill development, and inclusivity are among the many issues the nation faces. In order to promote digital innovation and guarantee that the advantages of digital transformation are shared fairly, policymakers must give top priority to resolving these issues.
  - The regulation of the digital economy presents a wide range of difficult issues for policymakers. Governments are finding it more and more difficult to strike a balance between fostering growth and protecting the interests of the public as technological advancements continue to surpass regulatory frameworks. Agile policymaking, global collaboration, public-private partnerships, and continuous investment in digital infrastructure and literacy are all essential to effectively tackling these issues. The results imply that a thorough and progressive approach that takes into account not only the most recent technological developments but also the long-term societal, economic, and environmental ramifications of digital transformation is necessary for effective policymaking in the digital economy.
  - Instead of making economic disparities worse, technology helps to lessen them. Expanding broadband coverage, promoting digital literacy initiatives, and developing incentives for small business adoption of technology are all ways that governments can help make technology more accessible, especially in underserved areas.
  - Businesses like Google, Uber, and Amazon control a large portion of the market and are changing established sectors. Peer-to-peer (P2P) services, remote work, and gig economies are all growing and having an effect on labor markets and productivity dynamics.
  - The adoption patterns of technology by individuals, government agencies, and businesses show a quickly changing environment where digital transformation is pervasive. Nonetheless, there are notable differences in the rate and extent of adoption among sectors:

Digitalization and technological innovation are being driven by businesses, frequently more quickly than by governmental organizations.

Through infrastructure and policy, governments play a crucial role in facilitating digitalization, although implementation presents difficulties.

Although digital literacy and access inequalities continue to be major problems, people are embracing technology at an increasing rate.

In the end, digitalization is accelerating at a faster rate, with each sector impacting the others. Coordination between these sectors is required to close adoption gaps, improve digital literacy, and guarantee fair access to technology in order to fully benefit from digitalization.

Limitations

- **Technological Change Pace vs. Slow Policy Adaptation:** Rather than being proactive, policy interventions are frequently reactive. New rules might be out of date or unrelated to the state of technology by the time they are implemented.
- **Digital Divide:** One of the biggest challenges is creating policies that meet the digital needs of both urban and rural populations without making already-existing disparities worse. Furthermore, it is challenging to completely integrate rural areas into digital markets because many still lack proper infrastructure.
- **Data Privacy and Protection:** Particularly in industries like e-commerce, fintech, and digital healthcare, there is a risk of exploitation in the absence of robust data protection regulations. It is a challenging task for policymakers to strike a balance between the need for innovation and economic growth and data privacy.
- **Regulation of Digital Platforms:** Because of the rapidly changing nature of these markets and the global presence of tech giants, it is challenging to create antitrust and competition laws that effectively apply to digital platforms. Additionally, when digital businesses operate in several nations, jurisdictional problems occur, posing regulatory difficulties for national legislators.
- **Taxation and Revenue Generation:** One strategy has been the implementation of digital taxes, such as India's equalization levy, but enforcement and compliance issues are frequently encountered. Coordination of international tax laws for the digital economy is still ongoing.
- **Security Issues:** These security threats must be taken into consideration in economic policies pertaining to digital markets. The problem, though, is making sure that the digital infrastructure is safe and innovative without impeding the expansion of the digital economy.
- **Lack of Skills and Capacity Building:** It is challenging for policymakers to create and carry out training and education initiatives that can keep up with the rapid advancements in technology. The workforce is still ill-prepared to fully engage in the digital economy if proper skill development is not provided.
- **Regulatory Fragmentation:** To effectively manage digital market disruptions, a unified, cogent regulatory approach is required. There is frequently a lack of coordination amongst different ministries, agencies, and state-level authorities.
- **Consumer Protection:** It's difficult to create consumer protection laws that can successfully handle these issues without impeding innovation. It is also challenging for policymakers to anticipate possible risks and create suitable consumer safeguards beforehand due to the quick evolution of digital services.
- **Global Character of Digital Markets:** Although international collaboration is essential, multinational tech behemoths or the legal systems of other nations frequently oppose India's policymaking. It is especially challenging to strike a balance between national interests and international standards.
- **Implications for Monetary and Fiscal Policy:** Regulators must create rules that strike a balance between the need to maintain economic stability and financial technology innovation. For example, there are risks associated with capital flight, tax evasion, and money laundering when using cryptocurrencies.

- **Environmental and Ethical Issues:** Policymakers must address these ethical and environmental issues while encouraging the expansion of digital markets. This necessitates incorporating ethical and sustainable AI considerations—which are frequently overlooked—into the regulatory framework.

Policy Recommendations

India requires a comprehensive and adaptable policy framework to address the aforementioned issues. Important policy suggestions consist of:

- **Create a Single Regulatory Structure:** Establish regulations for the digital market that are transparent, uniform, and strike a balance between innovation, consumer protection, data privacy, and fair competition. The Information Technology (Reasonable Security Practices and Procedures and Sensitive Personal Data or Information) Rules, 2011 could be improved by the government, for instance, and brought into compliance with new international standards such as the GDPR.
- **Boost the Digital Infrastructure:** Increase internet access through public-private partnerships, particularly in rural areas. To guarantee fair access to digital services, accelerate the rollout of 5G and other high-speed internet technologies.

Encourage the development of digital literacy and skills by funding educational and digital literacy initiatives for all facets of society, particularly in rural areas that are underprivileged. This would lessen the digital divide and allow people to fully benefit from the digital economy.

- **Encourage Inclusive Growth:** Establish regulations that support the creation of digital solutions for marginalized groups. This entails providing assistance to regional business owners, enabling digital banking, and expanding financial services to rural regions.

Regulate the gig economy by establishing fair wages, social security benefits, and safeguards against exploitation for workers in this sector. In order to give workers access to healthcare and social safety nets, digital platforms should be promoted.

- **Promote Innovation and Entrepreneurship:** To promote economic growth and job creation, offer incentives to startups and digital entrepreneurs, especially those engaged in innovations in fintech, healthcare, education, and agriculture.
- **Fight Cyberthreats:** To guarantee strong defence against fraud, cyberattacks, and other nefarious activities, strengthen cybersecurity infrastructure and impose stronger regulations for digital platforms.
- **Assure Fair Taxation:** Put in place tax laws that guarantee equitable contributions from domestic and international digital platforms, and investigate novel taxation schemes for digital services that profit from international trade.

Conclusion

India's economic growth and development landscape is changing as a result of the digital economy. However, the Indian government faces a number of difficult policy issues as digital markets continue to upend established industries. The success of India's digital economy depends on striking a balance between innovation and regulation, guaranteeing inclusive growth, enhancing digital infrastructure, and safeguarding consumers. India has the potential to develop a strong, inclusive, and sustainable digital economy that benefits all facets of society by tackling these issues with focused legislative changes.

The creation of economic policies faces both opportunities and challenges as a result of the digital transformation of markets. Policymakers need to create more dynamic and forward-thinking policies in order to adjust to the changing nature of digital economies. Governments can guarantee that the digital economy continues to be inclusive, equitable, and supportive of long-term growth by tackling issues like taxation, labour market adaptation, market regulation, and data governance. In a rapidly evolving digital world, finding a balance between promoting innovation and safeguarding the public interest is the challenge.

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