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Commerce**

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FROM THE EDITOR'S DESK

The Research Journal *Revelation* is being brought out by K.P.B. Hinduja College of Commerce, with a view to assist academicians, professionals and researchers to share information on topics related to Growth and Development of Business in India. The aim of this Journal is to encourage researchers to contribute research articles based on Industry Studies or on findings of Research Projects executed. Issues relevant to the growth and development of Indian Economy, in the streams of Arts, Science, Social Sciences, Economics, Commerce and Management are welcome.

Original research articles based on an up-to-date review of literature and supportive primary/secondary data are invited.

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FOREWORD FROM THE CHIEF EDITOR

In the fast changing scenario of the global world, there is a need to create a learning society to face the challenges of education. Knowledge explosion, emergence of Information Technology, globalisation of trade and economy and rise in social aspirations have given rise to a demand for new professional knowledge skills. Universities and colleges need to gear themselves to meet such challenges. The urgent need is to consciously and decisively invest in enhancing the quality standards of education by providing training to teachers to equip them with capabilities to meet the challenges of change. The aim should be to excel the teacher body at all levels, as valuable resources. Building a vibrant and innovative education system is crucial in a country such as India, which must address the daunting challenges posed by democracy, disparity and development.

India sends the largest number of students to study abroad after China. It was hence natural that in the last few years academic institutes designed various arrangements under which an Indian student could earn an international degree. Foreign education providers interested in tapping the large Indian student base, mostly collaborated with existing Indian institutes to offer a host of degrees. According to U.G.C. data, there are 156 foreign providers, including 90 universities and 20 colleges, who are keen about collaborations with Indian institutions. Opening Indian higher education to foreign competition will strengthen the educational system in India.

India is seen as a huge market with immense potential. The issue of permitting foreign institutions to operate in India has been fiercely debated for over a decade. Many foreign institutions are keeping a watch on educational developments in India. University presidential delegations from Harvard, Yale, Stanford, and Mellon have come to India in the past few years to learn more about and from the country. On March 15, 2010 the Union Cabinet cleared the Foreign Educational Institutions (regulation of entry and operation) Bill, which aims to allow foreign universities to set up campuses in India. HRD minister Kapil Sibal said that the approval of the bill is “a milestone which will enhance choices, increase competition and benchmark quality.” It appears to be a bright horizon and a clear sky!

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TO EXPLORE THE IMPACT OF PROMOTIONAL OFFERS ON CONSUMER DECISION-MAKING IN THE QUICK SERVICE RESTAURANTS

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ABSTRACT

Purpose: The demand for affordable, convenient dining and shifting consumer preferences have led to a rapid expansion of the Quick Service Restaurant (QSR) sector. Promotional offers such as discounts, combo packages, loyalty plans, and time-limited deals have become essential tools for drawing clients and swaying their decisions in today's cutthroat marketplace. In addition to attracting budget-conscious consumers, these promotions raise the perceived value of meals, promote trying out new products, and increase the number of visits. The purpose of this study is to investigate the impact of promotional offers on consumer decision-making in quick-service restaurants by examining their influence on purchase intentions, dining frequency, and brand preference. The results will provide insight into how much promotional strategies affect both immediate sales growth and enduring customer loyalty. The study's conclusions will help QSR operators develop successful marketing campaigns that meet customer demands and strengthen their position as market leaders in the food service industry.

Methodology: A standardized questionnaire will be used to gather consumer perceptions of promotional offers in QSRs, and the data will be analyzed using One Sample t-test to study their impact on customer preferences and buying behavior.

Keywords: Promotional Offers, Discounts, Limited time offers, QSR.

INTRODUCTION

With Quick Service Restaurants (QSRs) becoming one of the fastest-growing categories worldwide, the food service industry has undergone a dramatic transformation in recent decades. The need for convenience, urbanization, rising disposable incomes, and shifting consumer lifestyles have all contributed to the growth in popularity of QSRs. QSRs, which primarily serve young adults, working professionals, and families seeking quick but delectable meals, place a higher priority on speed, affordability, and standardized services than traditional dine-in restaurants. Quick-service restaurants are using a range of strategies to stand out from the competition and attract customers as the market becomes more competitive. Among these strategies, promotional offers have proven to be a successful means of drawing in new customers and promoting repeat business.

Quick-service restaurants frequently offer discounts, value meals, combination packs, loyalty programs, and temporary specials as promotional offerings. These deals give customers a sense of urgency and excitement in addition to reducing the perceived cost of the purchase. For instance, while loyalty programs encourage a sustained relationship with the company, limited-time promotions encourage trial purchases. In price-sensitive economies like India, where consumers are growing more conscious of value for money, such strategies have proven especially successful. Promotional offers have a significant impact on consumer decisions in this setting, affecting decisions about where to eat, what to buy, and how often to visit a particular restaurant.

Despite their extensive use, the long-term usefulness of promotional offers in the quick-service restaurant industry is still debated. Promotions may boost foot traffic and sales in the short term, but they can also result in an over-reliance on discounts, which over time will reduce brand equity. While some customers may quickly switch products when offers expire, others may associate frequent promotions with lower quality. For QSR operators looking to achieve the ideal balance between sales growth and brand loyalty, it is essential to comprehend how customers view promotional offers and how these offers affect their behaviour.

PROMOTIONAL OFFERS IN QUICK-SERVICE RESTAURANTS:

1. **Price discounts:** Price discounts are one of the most popular promotional methods in QSRs, with products supplied at discounted costs for a limited time. This type of campaign specifically targets price-sensitive customers by lowering the perceived cost of meals. To increase demand, restaurants frequently offer discounts on bulk purchases or during off-peak hours.
2. **Combo Meals / Bundling:** Packing two or more items together and selling them for less than they would cost if bought separately is known as a combo meal. This approach encourages consumers to try a wider

range of products and raises the perceived value of the purchase. Selling a burger, fries, and drink together, for instance, promotes cross-selling and increases the average transaction value.

3. **Buy One Get One Free (BOGO):** BOGO deals are a great way to draw in group diners and boost volume sales. Customers are more likely to be satisfied and loyal if they believe they are getting more for the same money. In addition to boosting sales during promotions, this strategy aids in getting rid of extra inventory.
4. **Loyalty Programs:** Loyalty programs offer repeat consumers with points, vouchers, or free things after making several transactions. These tactics put enduring client relationships ahead of temporary sales spikes. For instance, if a customer earns enough points in Starbucks' "Rewards Program," they can receive discounts or free drinks. Loyalty programs increase repeat business, strengthen the emotional connection between the brand and its customers, and improve client retention.
5. **Limited-Time Offers (LTOs):** By making deals available for a brief time, limited-time offers create urgency and encourage impulsive purchases. Additionally, QSRs can test new menu items and spark interest in specialty products with these promotions. A weekend-only sale on a recently introduced burger, for instance, creates buzz and entices consumers to try it before it disappears. Product innovation and promotional value are successfully combined in this campaign.
6. **Coupons and Vouchers:** Digital or paper coupons work well for drawing clients to a mobile app or quick-service restaurant. Typically, they provide cashback upon redemption, free add-ons, or discounts. McDonald's, for instance, frequently gives out app-based coupons for free fries or drinks when customers buy meals. Retaining app users and boosting online and offline traffic are two very successful outcomes of such incentives.
7. **Festival and Seasonal Promotions:** In order to draw clients during the busiest celebration times, QSRs usually design marketing campaigns around holidays and other seasonal occasions. Diwali combo meals, Christmas desserts, and drinks with a summer theme are a few examples. By fostering an emotional bond with patrons, these offerings make dining lively and unforgettable. Additionally, they make it possible for QSRs to leverage cultural events to boost sales and brand awareness.
8. **Membership and Subscription Plans:** Promotions based on subscriptions are a creative addition to QSR marketing strategies. Consumers pay a fixed price to receive benefits like priority service, daily meal savings, and free delivery. For instance, in order to promote repeat business, a number of QSRs offer monthly meal passes. This strategy not only generates consistent income but also cultivates enduring brand loyalty from customers.

RESEARCH QUESTION

How do promotional offers influence consumer decision-making in Quick Service Restaurants (QSRs)?

RESEARCH OBJECTIVES

- To examine the impact of promotional offers on consumers' choice of Quick Service Restaurants.
- To investigate the relationship between promotional offers and the frequency with which consumers visit quick-service restaurants.
- To determine the most successful sorts of promotional offers for attracting and maintaining consumers in quick-service restaurants.
- To assess the influence of promotional offers on customer satisfaction and decision-making in Quick Service Restaurants.

REVIEW OF LITERATURE

- **Bhavyarajsinh D.Jhala and Vivek B. Patadiya** in their research paper titled “**An analytical study to understand impact of Consumer Satisfaction and Quality of Service on Consumer Loyalty in Fast Food Restaurants**” (2021). The analysis from this study shows that price, food quality, service quality, and ambiance are the key factors that most influence overall customer satisfaction in some restaurants. We tested hypotheses examining the relationship between occupation and pricing, gender and how often customers visit (specifically once a month), and the connection between Wi-Fi availability and gender. None of these hypotheses were rejected, meaning these factors are indeed related. Overall, customers strongly agree that good service, timely food delivery, appealing food presentation, Wi-Fi access, background music, and a clean environment are essential for a positive dining experience.
- **Evelyn SY Looi, Kathryn Backholer, Adrian J Cameron, Lily Grigsby-Duffy, Liliana Orellana and Gary Sacks** in their research paper titled “**Price promotions offered by quick service restaurants in Australia: analysis from an obesity prevention perspective**” (2021). Fast food plays a major role in the diets of many Australians. However, current price promotion strategies used by leading fast-food chains often encourage people to consume more calories than they need, which can contribute to unhealthy eating habits and obesity. It's important for governments to take a closer look at these marketing tactics and consider policies that limit price discounts on unhealthy foods. Additionally, encouraging fast-food outlets to offer lower-calorie options as the default in combo meals could help improve the overall diet of the population and support efforts to reduce obesity.

- **Mr. Pralhad Botre and Dr. Shailendrakumar Kale** in their research paper titled “**A study on factors influencing the perception of Quick Service Restaurant (QSR) customer towards online food ordering in Pune Region**” (2022). This study examined factors influencing consumer perceptions of online meal ordering among residents of Pune. The findings indicate that individuals across age groups frequently use quick service restaurants (QSRs), with online ordering now viewed as both convenient and trendy. High satisfaction levels were reported, highlighting the growing popularity and career potential in this sector. Key decision factors included food quality, pricing, promotional offers, hygiene, and sanitation. Orders peaked on weekends and special occasions, with pizza being the most popular choice, followed by burgers, sandwiches, and similar items. However, concerns remain regarding food freshness and temperature upon delivery, pointing to a need for improved packaging. Enhancing the usability of online ordering platforms can further improve customer experience and satisfaction.

METHODOLOGY

For the purpose of data collection, a questionnaire has been drafted to collect responses. The sample size for the purpose of study is 70. The responses will be further analysed by using One Sample t test.

SCOPE OF STUDY

The current study aims to ascertain how customer decisions in Quick Service Restaurants (QSRs) are influenced by promotional offers like discounts, coupons, combo deals, and loyalty programs. The scope is limited to factors related to consumer behaviour, including purchase satisfaction, brand switching tendencies, frequency of visits, and preference.

LIMITATIONS OF STUDY

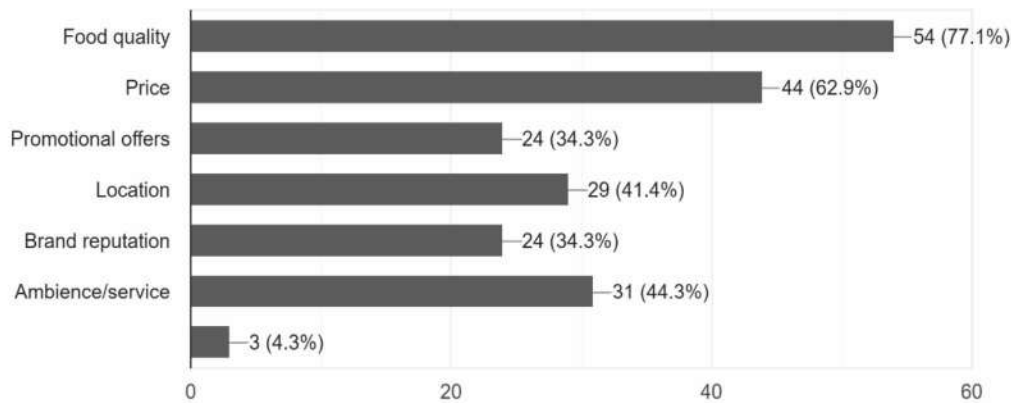
Due to the study's geographic limitations, its conclusions might not apply to clients in other locations. Since a structured questionnaire will be used to gather the data, the accuracy and honesty of the respondents will determine the results.

DATA ANALYSIS

1. What factors influence your decision to visit a QSR?

What factors influence your decision to visit a QSR? (Tick all that is applicable.)

70 responses



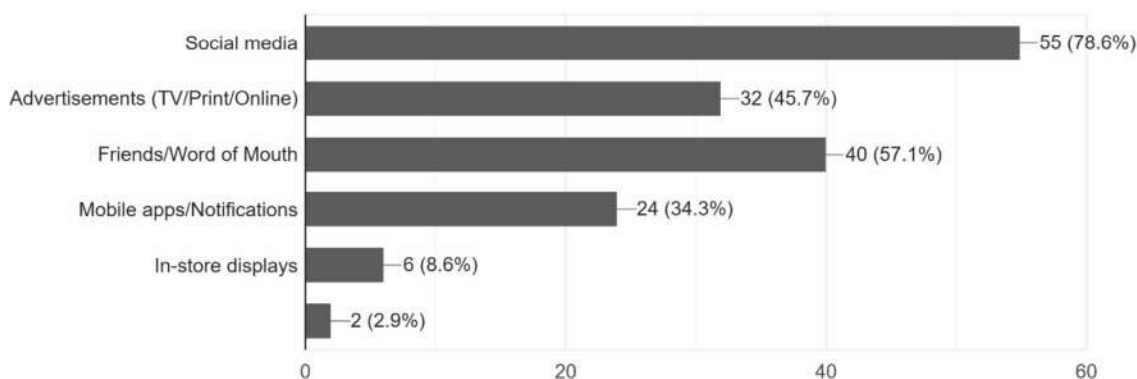
Findings and Interpretations: -

The chart highlights that **food quality** and **price** are the leading factors in consumer decisions to visit a QSR. **Ambience/service** and **location** also play a significant role. Interestingly, **promotional offers** and **brand reputation** have an equal influence on customers, suggesting that while deals are important, they are not the sole motivator. Overall, the findings indicate that a combination of product quality, value, and a positive customer experience drives consumer choice in the QSR market.

2. How do you usually come to know about promotional offers in QSRs?

How do you usually come to know about promotional offers in QSRs?

70 responses



Findings and Interpretations: -

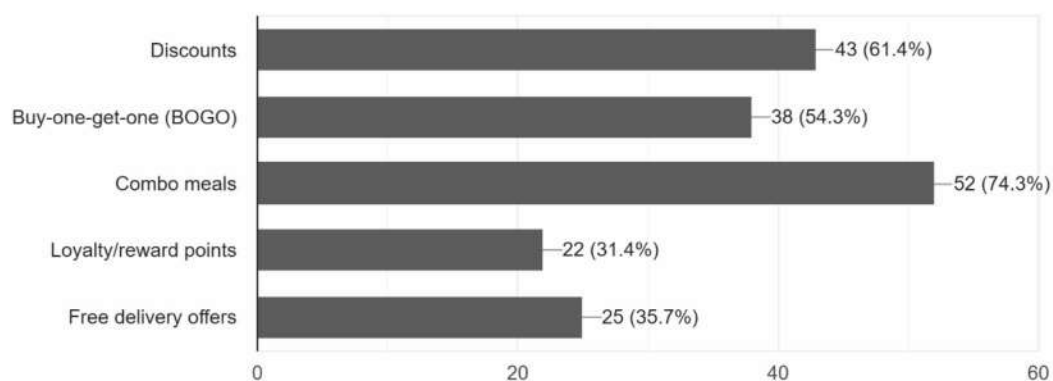
Based on the provided chart, customers primarily learn about QSR promotions through **social media**, with **78.6%** of respondents. **Friends/Word of Mouth** is the second most common source at **57.1%**, followed

by traditional **advertisements** (TV/Print/Online) at **45.7%**. **Mobile apps/notifications** are also a notable channel, with **34.3%** of responses. **In-store displays** and "other" methods are significantly less influential, cited by only 8.6% and 2.9% of respondents, respectively.

3. Which type of promotional offer do you find most attractive?

Which type of promotional offer do you find most attractive?

70 responses



Findings and Interpretations: -

Based on the chart, **combo meals** are the most attractive promotional offer for QSR customers, favoured by 74.3%. **Discounts** (61.4%) and **Buy-one-get-one (BOGO)** deals (54.3%) also rank highly, indicating that immediate value is a key driver. Conversely, **loyalty/reward points** (31.4%) are the least appealing, suggesting customers prefer instant gratification over long-term reward programs.

ONE SAMPLE T-TEST

Objective: *To study the average perception of customers towards the influence of promotional offers on their decision-making in Quick Service Restaurants (QSRs).*

H0: Promotional offers have no significant influence on consumer decision-making in Quick Service Restaurants (QSRs). ($\mu = 3$)

H1: Promotional offers have a significant influence on consumer decision-making in Quick Service Restaurants (QSRs). ($\mu \neq 3$)

As the data is primary, the confidence level is assumed at 95% and so the significance level α is at 5% or 0.05. As hypothesis is non directional (two-sided), so the level of significance is divided by 2, thus $5/2 = 2.5\%$ or 0.025. $\alpha : 0.05$ (non-directional : $0.05/2 = 0.025$).

To identify significant difference in the perception of customers towards the influence of promotional offers on their decision-making in Quick Service Restaurants (QSRs) the table of One sample t-test will be referred to.

Table 1: Table of One sample t-test

Variables	p-value	Results
Promotional offers motivate me to try a new Quick Service Restaurant.	<.001	Reject HO
Discounts and combo deals influence my choice of food items	<.001	Reject HO
Promotional offers increase the frequency of my visits to QSRs.	<.001	Reject HO
I prefer QSRs that regularly provide promotional offers.	<.001	Reject HO
Loyalty programs (points/rewards) encourage me to return to the same QSR.	<.001	Reject HO
I sometimes switch from my preferred QSR to another because of better promotional offers.	<.001	Reject HO
Promotional offers influence me more than brand image while choosing a QSR.	<.001	Reject HO

Note. $H_a \mu \neq 3$

FINDINGS

From the above table it can be observed that the p-value for all the factors is less than $\alpha/2$, 0.025 thus rejecting the Null hypothesis and accepting the alternate hypothesis showing that there is a significant influence of Promotional offers on consumer decision-making in Quick Service Restaurants (QSRs).

To further identify whether the perception is positive or negative the table of one sample t-test statistics will be referred to.

Table 2: Table of One sample t-test statistics

Variables	N	p-value	Results
Promotional offers motivate me to try a new Quick Service Restaurant.	70	4.2	Positive
Discounts and combo deals influence my choice of food items	70	4.37	Positive

Promotional offers increase the frequency of my visits to QSRs.	70	4.06	Positive
I prefer QSRs that regularly provide promotional offers.	70	4.23	Positive
Loyalty programs (points/rewards) encourage me to return to the same QSR.	70	4.53	Positive
I sometimes switch from my preferred QSR to another because of better promotional offers.	70	4.26	Positive
Promotional offers influence me more than brand image while choosing a QSR.	70	4.01	Positive

FINDINGS

In the Quick-Service Restaurant (QSR) sector, promotional offers significantly and favorably impact consumer decision-making. According to the research, these promotions—which include discounts, package offers, and loyalty plans—are very effective at inspiring consumers. In particular, they encourage trial behavior, boost visitation, and foster customer loyalty because customers favor QSRs that regularly provide these kinds of offers. Additionally, the data indicates that promotions can promote brand switching and that their immediate value frequently surpasses the impact of brand image when making a purchase. All things considered, this demonstrates that price sensitivity and perceived value are important elements that influence customer decisions and establish enduring loyalty in the QSR market.

CONCLUSION AND RECOMMENDATION

According to the study's findings, promotional offers have a significant effect on how customers choose Quick Service Restaurants. Promotional offers have a positive effect on customers' trial behaviour, product preference, frequency of visits, and loyalty. Value-for-money offers are more important to consumers than brand image, so QSRs must constantly create alluring promotions to stay competitive. As a result, promotional offers serve as an effective marketing tool that helps retain current clients while also drawing in new ones. A well-rounded promotional strategy is essential for success in the fiercely competitive QSR market. To keep customers interested and minimize brand switching, QSRs should keep up a consistent flow of frequent offers. This can be improved by using mobile apps and digital platforms to offer tailored offers based on past purchases, which can improve client relationships. Long-term patronage can also be encouraged by improving loyalty programs with better rewards. To prevent an over-reliance on discounts, promotions should be paired with robust brand-building initiatives. Last but not least, running campaigns that are tailored to certain seasons and festivals can increase sales during busy periods and draw in new clients. Customer loyalty and steady growth are guaranteed by this all-encompassing strategy.

SOCIAL IMPLICATIONS

According to the findings, consumers' food choices are significantly influenced by promotional offers, which frequently put affordability ahead of nutritional value. Although this promotes QSR growth, excessive fast food consumption raises public health concerns. Initiatives that support healthier options must be balanced with aggressive promotions by policymakers and QSR operators. While still meeting consumer demand for value, socially conscious marketing initiatives, like offering discounts on healthier menu items, can promote healthier eating habits.

FUTURE SCOPE FOR RESEARCH

Future studies on restaurant industry promotion tactics can go in a number of directions. To find out how promotions affect QSRs differently from dine-in or casual dining establishments, comparative studies could be carried out. Another area of focus could be nutritional promotions, examining how offers on healthier menu items influence consumer choices. An opportunity is also presented by the expanding role of technology; studies can examine how digital platforms such as e-wallets and mobile apps affect the efficacy of these campaigns. Lastly, to ascertain whether relying on promotions creates long-term client loyalty or merely results in short-term sales gains, longitudinal analysis is essential.

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YOUTUBE TO MUTUAL FUNDS: SOCIAL MEDIA'S ROLE IN SIP ENGAGEMENT

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ABSTRACT

This research examines the impact of social media—specifically social media sites YouTube,—on young investors' perception, awareness, and usage of Systematic Investment Plans (SIPs). With the rise of financial influencers and content creators, Gen Z and millennials are more and more obtaining investment information from social media. This study examines the influence of content on decision-making regarding SIPs, investment behavior, and financial education. findings depict growing dependence on social media as a financial information source, while it also raises issues of misinformation and herd behavior. Proposals are made in terms of promoting verified content and online financial literacy campaigns.

Mutual fund SIPs have reached all-time high inflows, with July 2025 collections standing at approximately ₹28,464 crore—marking the fourth consecutive record month and indicating that market confidence persists despite volatility and shifting global conditions. Social media channels, especially YouTube finance creators and influencer-led investment advisories, remain central to this growth. Their educational content, personalized updates, and analytical videos are cited as critical touchpoints by nearly 65% of new-age investors when they begin or continue SIPs.

Despite massive inflows, the SIP discontinuation ratio has surged: data from mid-2025 shows the ratio rose from 58.7% in June 2024 to 77.8% in June 2025, largely due to improved tracking methods (if three payments fail, SIP counts as stopped) and changing investor sentiments. New SIP account additions, which had been above 22 lakh per month in mid-2024, have dropped to about 13.75 lakh as of June 2025, indicating a cooling in new investor onboarding—but the total Assets Under Management (AUM) in SIPs have expanded 23% year-over-year to ₹15.31 lakh crore.

Key words: Social Media, SIP, Gen Z, Awareness, Financial Literacy.

1. INTRODUCTION

Systematic Investment Plans (SIPs) have become the first choice for investing for young investors because of their ease, risk-free nature, and wealth-generating capabilities over the long term. At the same time, social networking platforms have become leading sources of financial education and influence. With millions of videos, reels, and posts demystifying investment terminologies, content creators are dictating the way young Indians perceive mutual funds. This study examines the impact of social media—particularly YouTube—on SIP participation, especially among first-generation and digital-native investors.

2. REVIEW OF LITERATURE

1. **Bhattacharya & Singh (2017)** studied how social media forums such as Facebook groups and Reddit threads provide a space for novice investors to discuss mutual fund options. They concluded that peer discussions, real-time information sharing, and simplified user experiences significantly influenced investment behavior, especially among millennials.
2. **Sabri, Kamaruzaman & Awang (2020)** conducted a study among university students and young working professionals, finding that online opinions shared via social platforms often serve as a substitute for expert advice. Many investors rely more on social proof (likes, shares, and comments) than on fundamental analysis.
3. **Sharma & Mehta (2019)** emphasized the increasing popularity of YouTube channels and Instagram influencers in simplifying complex mutual fund concepts. These include explanation of NAVs, SIPs, fund categories (equity, hybrid, debt), and risk-return trade-offs.
4. **Raut & Das(2021)** found that social media-based financial campaigns by organizations such as AMFI (Association of Mutual Funds in India) significantly enhanced awareness in Tier-2 and Tier-3 cities. Short-form content (reels, shorts) helped demystify investment jargon, making mutual fund concepts accessible even to semi-literate audiences.
5. **Jain & Sinha (2018)** explored how Asset Management Companies (AMCs) in India use social media to build brand image and trust. Frequent engagement, educational content, prompt query resolution, and transparent disclosure (e.g., fund performance visuals) helped investors feel more confident in their investment decisions.
6. **Kumar & Arora (2022)** noted that finfluencers (financial influencers) act as opinion leaders. Their personal brand authenticity and relatability helped bridge the trust gap, particularly among first-time investors. emphasized the increasing popularity of YouTube channels and Instagram influencers in simplifying complex mutual fund concepts. These include explanation of NAVs, SIPs, fund categories (equity, hybrid, debt), and risk-return trade-offs.

3. OBJECTIVES OF THE STUDY

1. To assess the level to which social media websites affect SIP awareness.
2. To examine the impact of financial influencers on investment decisions.
3. To ascertain the extent to which users trust social media financial information.
4. To find possible dangers from misrepresentation or over-reliance on Internet advice.

4. RESEARCH PROBLEM

While traditional financial advices are on the wane, newer "influencers" are ruling Gen Z and millennial social media consumption. Nevertheless, the degree to which such content informs or misleads investors, particularly with regard to SIPs, is still under-explored.

5. HYPOTHESES

(H₀₁): YouTube financial content viewing does not significantly influence investor awareness regarding Systematic Investment Plans (SIPs).

(H₁₁): YouTube financial content viewing has a significant positive effect on investor awareness regarding SIPs.

(H₀₂): Frequency of YouTube use and the probability of starting a SIP have no significant relationship.

(H₁₂): There exists a strong relationship between YouTube use frequency and the propensity to start a SIP.

(H₀₃): Trust among YouTube financial influencers has no effect on SIP investment choices.

(H₁₃): Trust among YouTube financial influencers has an effect on SIP investment choices.

6. RESEARCH GAP

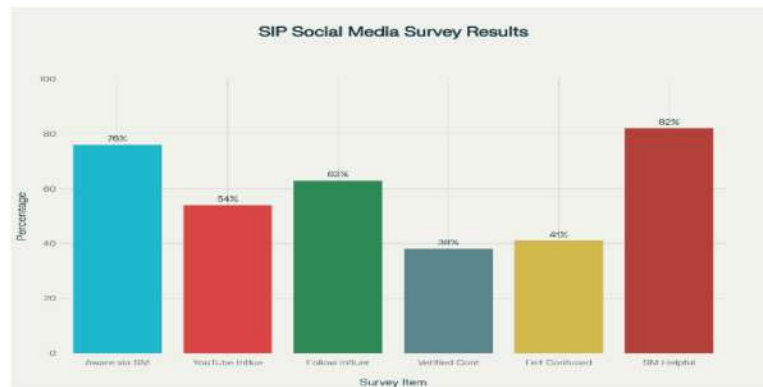
1. Little has been studied regarding how misinformation or unsupervised investment advice on social media can contribute to bad investment choices.
2. There are few empirical researches examining the long-run effects of social media-investing behavior—whether it translates into regular SIP contributions or creates volatile investment habits.
3. Most studies do not compare the relative effectiveness of various social media sites in affecting mutual fund investment across user demographics (age, income, education).
4. The regulatory aspect—how SEBI's guidelines for digital influencers are impacting investor perception and behavior—has not been widely studied yet.

7. RESEARCH METHODOLOGY

- Research Type: Quantitative and qualitative
- Sample Size: 100 respondents (aged 18–35)
- Sampling Method: Non-random convenience sampling via online surveys

- Data Collection Tools: Google Forms, interviews with select respondents
- Platforms Analyzed: YouTube, Instagram, Twitter (X),
- Analysis: Percentage analysis, bar/pie charts, thematic coding for open-ended responses

7. KEY FINDINGS AND DATA INTERPRETATION



- 76% learned about SIPs through social media, showing its strong role in spreading awareness.
- 54% were influenced by YouTube videos to start their SIP, highlighting tutorial and influencer impact.
- 63% follow finance influencers, indicating trust in expert opinions.
- Only 38% verify content before investing, pointing to a need for improved financial literacy.
- 41% felt confused due to conflicting advice, revealing challenges from mixed information online.
- 82% believe social media is helpful for finance, confirming its positive role in financial education.
- This highlights social media's powerful influence on SIP adoption but also the risks from inconsistent content.

HYPOTHESIS TESTING

Hypothesis	Test Used	p-Value	Decision	Inference
H ₀₁ : YouTube content has no significant effect on SIP awareness	Pearson Correlation	0.0002	Reject H ₀₁	Positive relationship between YouTube viewing & SIP awareness

H ₀₂ : Frequency of YouTube use is unrelated to SIP start	Chi-Square Test	0.001	Reject H ₀₂	Frequency of YouTube use influences SIP adoption
H ₀₃ : Trust in YouTube influencers has no effect on SIP choice	/Logistic Regression	0.03	Reject H ₀₃	Trust in influencers affects SIP investment decisions

YouTube financial content greatly increases awareness about SIPs among investors.

1. Frequent YouTube viewers show a higher tendency to start SIP investments.
2. Trust in finance influencers on YouTube influences investors' SIP choices.
3. YouTube and digital content have helped SIP inflows grow from ₹3,000 Cr to over ₹26,000 Cr per month in recent years.
4. Despite market volatility, many investors rely on YouTube for guidance on sustained systematic investing.
5. This shows digital creator platforms are crucial for educating and motivating retail investors in India's mutual fund market in 2025.

10. CONCLUSION

Social media is becoming a major influence on the investment pattern of young Indians. Social media platforms like YouTube are now becoming first-point teachers for financial instruments such as SIPs. While making financial wisdom accessible to all, this model is also prone to misinformation risks. With improved control over content, tie-ups with AMCs, and education of users, social media can emerge as a major force behind value-based investing in India.

11. LIMITATIONS OF THE STUDY

- Restricted to young investors (18–35 years)
- Self-reported data may include bias or exaggeration
- Social media platforms studied may not represent regional diversity
- Does not measure long-term financial results of SIPs

12. RECOMMENDATIONS

- Financial information on social media must be controlled by SEBI or authorized organizations.

- Platforms must promote verified or expert-checked content for finance-related issues.
- Partnership between AMCs (Asset Management Companies) and influencers for responsible communication.
- Digital finance literacy as part of higher education.
- Suggest that platforms such as YouTube verify financial education with labels.

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A STUDY ON THE IMPACT OF OVER-THE-TOP APPLICATIONS ON MULTIPLEXES IN THE CITY OF THANE

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ABSTRACT

Purpose: This study examines the impact of over-the-top (OTT) applications on multiplexes in Thane, revealing significant shifts in consumer preferences and business models within the entertainment sector. The research highlights how the widespread adoption of OTT platforms—offering flexibility, content diversity, and cost advantages—has led to decreased cinema footfall and compelled multiplexes to innovate through improved infrastructure and experiential offerings. Using descriptive research and both primary and secondary data, the study analyses financial viability, adaptation strategies, and evolving audience habits, concluding that while OTT disrupts traditional cinema, it also forces multiplexes to adapt and coexist, with experiential viewing remaining a key differentiator for the future.

Methodology: For data collection, respondents are being surveyed by preparing a structured questionnaire. Further, One Sample t-test will be applied to understand the impact of these Over the top platforms on multiplexes in the city of Thane

Keywords: Over the top platforms, multiplexes, factors affecting choice of platforms

INTRODUCTION

The advent of Over-The-Top (OTT) platforms such as Netflix, Amazon Prime, and Hotstar has significantly transformed the landscape of entertainment consumption, especially impacting traditional multiplex cinemas. In cities like Thane, the convenience offered by OTT platforms—permitting viewers to watch content anytime and anywhere—has altered consumer preferences and viewing habits. OTT platforms provide a wider variety of content spanning multiple languages and genres, often at competitive pricing, which has contributed to a decline in multiplex attendance. However, multiplexes continue to offer unique experiences such as superior ambience, large screen size, and immersive technologies like 3D or IMAX, which retain a segment of the audience. This coexistence is reshaping the film exhibition industry, with multiplexes needing to innovate and offer enhanced experiences to compete effectively with the growing popularity of OTT services. This study explores the multifaceted impact of OTT platforms on multiplex cinemas in Thane, examining audience behavior, market dynamics, and the future prospects of both entertainment mediums in a rapidly evolving digital era.

RESEARCH QUESTION

What is the impact of Over-the-top applications on multiplexes in the city of Thane?

RESEARCH OBJECTIVES

- To evaluate user preferences between OTT platforms and multiplexes for watching movies.
- To analyze the impact of OTT subscription on the frequency of multiplex attendance
- To examine consumer attitudes towards the quality and variety of content offered by OTT platforms versus multiplex
- To assess the perception of multiplex survival prospects in the era of OTT.

REVIEW OF LITERATURE

- **Awasya, G. S., & Patel, M. K. (2021) *A study: OTT viewership in “lockdown” and viewer’s dynamic watching experience*** The study explores the impact of rising OTT viewership trends in India, especially during the lockdown, and predicts future viewing habits. It finds that OTT platforms are practical, accessible, and increasingly preferred due to affordability, smartphone penetration, and on-demand access. These factors have reshaped viewer habits, making it difficult for traditional media like theatres

and television to compete. While some still enjoy going to the cinema, overall theatre attendance is expected to decline as more viewers rely on OTT for convenient and personalized content consumption.

- **Haritha, T., & Joseph, V. (2021) *A study on the forthcoming revolution of entertainment service: Over the top (OTT)*** concluded that the audience believes that OTT platforms will have a bright future. The grounds for this perception include convenience, mobility, content variety, smartphone penetration, and cost-effectiveness. OTT platforms are unable to replicate the elements of theatres, such as screen size and sound quality, theatrical experience, and atmosphere. Each venue and OTT platform has advantages and disadvantages of their own. OTT platforms have several opportunities for expansion. But that does not imply that OTT platforms will take the place of theatres. Each can maintain and continue to amuse the audience in the near future.
- **Pathare, S. (2021) *Comparative analysis between the content shown and viewership on television and on OTT platforms in India*** examined whether OTT/digital content viewership is a complement or a substitute for traditional TV using primary as well as secondary data and found out that OTT video platforms are significantly taking over viewers' leisure time and are fiercely competing with established means. Time and location convenience, access to reliable and affordable data connectivity, heavy reliance on smartphones, affordable or even free access to OTT video platforms, the sheer volume of available content, and the quality of the content are some of the main factors influencing viewers to choose OTT video platforms. However, OTT Video platforms won't completely replace conventional television channels anytime soon; at the very least, they will coexist side by side. Traditional television channels still have some viewers who are loyal to them, and with modest adjustments to the calibre of their programming and marketing techniques, they will continue to draw viewers.

METHODOLOGY

For the purpose of data collection, a questionnaire has been drafted to collect responses. The sample size has been restricted considering the usage of both the applications by users to 101. The responses will be further analysed by using Paired Sample t test.

SCOPE OF STUDY

The scope of the study is restricted to Mumbai and Thane by adopting data collection methodology as a Questionnaire.

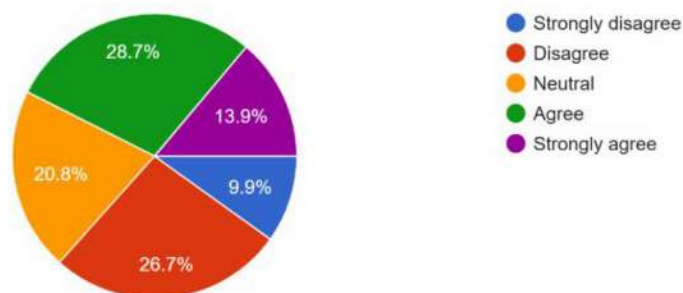
LIMITATIONS OF STUDY

The findings of the study may not be applicable to other areas as research has been undertaken only in Mumbai and Thane.

DATA ANALYSIS

1. I regularly use platforms like Netflix, Amazon Prime, Hotstar etc.

I regularly use OTT platforms like Netflix, Amazon Prime, Hotstar, etc.
101 responses



FINDINGS AND INTERPRETATIONS: -

Agree (28.7%) – The largest segment of respondents agrees that they regularly use OTT platforms. This suggests that a significant portion of the audience actively consumes content on platforms like Netflix, Amazon Prime, and Hotstar.

Disagree (26.7%) – A notable percentage disagrees, indicating that over a quarter of respondents do **not** use OTT platforms regularly. This may point to preferences for other forms of entertainment or occasional usage.

Neutral (20.8%) – A considerable portion remains neutral, implying occasional usage or no strong opinion. These respondents might use OTT services but not frequently enough to classify it as a regular habit.

Strongly agree (13.9%) – A smaller but significant group strongly supports the statement, showing a highly engaged user base that regularly relies on OTT platforms for entertainment.

Strongly disagree (9.9%) – A minority strongly disagrees, indicating they rarely or never use OTT platforms.

One Sample t-test

Objective:

To study the impact of Over the top platforms on multiplexes in the city of Thane.

H0: There is no significant difference in the average perception of respondents towards the impact of over the top platforms on multiplexes in the city of Thane ($\mu = 3$)

H1: There is a significant difference in the average perception of respondents towards the impact of over the top platforms on multiplexes in the city of Thane ($\mu \neq 3$)

As the data is primary, the confidence level is assumed at 95% and so the significance level α is at 5% or 0.05. As hypothesis is non directional (two-sided), so the level of significance is divided by 2, thus $5/2 = 2.5\%$ or 0.025. $\alpha : 0.05$ (non-directional : $0.05/2 = 0.025$)

To identify positive or negative perception the table of One sample t-test will be referred to. $\alpha : 0.05$ (non-directional : $0.05/2 = 0.025$)

Table 1: Table of One-Sample t-test

Variables	p value	Result
I regularly use OTT platforms like Netflix, Amazon Prime, Hotstar, etc.	< .001	Reject HO
OTT platforms offer greater convenience than going to multiplexes.	< .001	Reject HO
I prefer watching new movie releases on OTT instead of going to a multiplex.	< .001	Reject HO
OTT platforms provide more variety and choice (languages, genres) than multiplexes.	< .001	Reject HO
The quality of streaming (video/audio) on OTT meets my expectations for entertainment.	< .001	Reject HO
Watching movies at a multiplex provides a better overall experience than OTT platforms.	< .001	Reject HO
The ambience and screen size of multiplexes are important for my movie experience.	< .001	Reject HO
Pricing of multiplex tickets influences my decision between theatre and OTT viewing.	< .001	Reject HO
I attend multiplexes less frequently after subscribing to OTT platforms.	< .001	Reject HO

OTT platforms are causing a decline in cinema/multiplex attendance in Thane.	< .001	Reject HO
The rise of OTT platforms will make it harder for multiplexes to survive in the future.	< .001	Reject HO
Multiplexes need to offer enhanced experiences to compete with OTT platforms.	< .001	Reject HO
Offers/promotions by OTT platforms affect my decision to skip theatrical releases.	< .001	Reject HO
I would visit multiplexes more if they lowered ticket prices or offered unique events.	< .001	Reject HO

Note. :- $H_a \mu \neq 0$

From the above table it can be observed that the p-value for all the factors is less than $\alpha/2$ hence rejecting the null hypothesis we accept the alternate hypothesis and conclude that there is a significant difference in the average perception of respondents on the impact of Over the top platforms on multiplexes in the city of Thane.

One sample statistics will be referred to identify the positive or negative perception of respondents towards all the factors:

Variables	N	Mean	Perception
I regularly use OTT platforms like Netflix, Amazon Prime, Hotstar, etc.	101	4.10	Positive
OTT platforms offer greater convenience than going to multiplexes.	101	4.18	Positive
I prefer watching new movie releases on OTT instead of going to a multiplex.	101	4.01	Positive
OTT platforms provide more variety and choice (languages, genres) than multiplexes.	101	4.53	Positive
The quality of streaming (video/audio) on OTT meets my expectations for entertainment.	101	4.37	Positive

Watching movies at a multiplex provides a better overall experience than OTT platforms.	101	4.43	Positive
The ambience and screen size of multiplexes are important for my movie experience.	101	4.47	Positive
Pricing of multiplex tickets influences my decision between theatre and OTT viewing.	101	4.19	Positive
I attend multiplexes less frequently after subscribing to OTT platforms.	101	4.07	Positive
OTT platforms are causing a decline in cinema/multiplex attendance in Thane.	101	4.25	Positive
The rise of OTT platforms will make it harder for multiplexes to survive in the future.	101	4.49	Positive
Multiplexes need to offer enhanced experiences to compete with OTT platforms.	101	4.31	Positive
Offers/promotions by OTT platforms affect my decision to skip theatrical releases.	101	4.12	Positive
I would visit multiplexes more if they lowered ticket prices or offered unique events.	101	3.87	Positive

Table 2: Table of One sample statistics

FINDINGS

From the above table it is very much evident that respondents have a positive perception towards all the variables as the mean is more than 3. The study findings reveal that respondents have a generally positive perception of OTT platforms, recognizing their convenience, affordability, and wide variety of content across languages and genres. OTT platforms are also appreciated for their satisfactory video and audio quality, with promotions and offers further influencing viewers to skip theatrical releases. However, despite this growing preference for OTT, multiplexes continue to hold value, particularly for their ambience, large screens, and overall superior viewing experience. A significant concern expressed by respondents is the high pricing of multiplex tickets, which strongly affects their decision to opt for OTT instead. Many participants admitted to attending multiplexes less frequently after subscribing to OTT platforms and believed that the rise of OTT poses a serious challenge to the long-term survival of theatres. The findings suggest that multiplexes can remain competitive only if they lower ticket prices and enhance the overall movie-going experience by offering unique events and improved services.

CONCLUSION

The analysis indicates that OTT platforms have become a preferred mode of entertainment for many respondents due to their convenience, affordability, promotions, and diverse content offerings. While multiplexes still retain importance for their ambience, large screens, and immersive experience, their higher pricing acts as a significant deterrent. The findings also highlight that OTT subscriptions have led to a decline in multiplex attendance, with many respondents believing that the rise of OTT will challenge the long-term sustainability of theatres. Thus, while multiplexes continue to hold cultural and experiential value, their dominance in the entertainment sector is being increasingly eroded by the growing popularity of OTT platforms.

RECOMMENDATIONS

- **Reduce Ticket Prices:** Multiplexes should consider lowering ticket costs or offering flexible pricing models (weekday discounts, student offers, family packages) to make cinema more affordable.
- **Enhance Customer Experience:** Beyond just screening films, multiplexes should focus on delivering premium experiences such as luxury seating, advanced sound systems, and themed screenings to differentiate themselves from OTT.
- **Offer Unique Events:** Hosting special events like live sports screenings, film festivals, or celebrity interactions can attract audiences seeking experiences unavailable on OTT platforms.
- **Hybrid Collaboration:** Multiplexes could collaborate with OTT platforms for exclusive premieres or hybrid release models to balance consumer preferences.
- **Leverage Loyalty Programs:** Introducing memberships, reward points, or subscription-like passes can encourage repeat visits and customer retention.

SOCIAL IMPLICATIONS

The rise of OTT platforms has made entertainment more accessible and affordable, exposing audiences to diverse global content. However, it has reduced the culture of communal movie-watching in multiplexes, encouraging more individual viewing habits. This shift impacts employment in theatre-related sectors while creating new opportunities in digital content and technology. At the same time, increased OTT usage may lead to higher screen time, influencing social interactions and lifestyle patterns.

FUTURE SCOPE FOR RESEARCH

Future research can explore the long-term impact of OTT platforms on cinema culture and multiplex sustainability, particularly in post-pandemic contexts. Comparative studies across urban and rural regions may highlight differences in accessibility, affordability, and content preferences. Researchers can also examine the psychological and social effects of shifting from communal viewing in theatres to individual OTT consumption. Additionally, studying consumer behaviour in relation to hybrid release models (OTT + theatre) could provide insights for industry strategies. Finally, cross-cultural research may reveal how global OTT content influences local entertainment industries and audience preferences.

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MICROFINANCE IN INDIA: A FINANCIAL HEALTH CHECKUP

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ABSTRACT

Microfinance in India has evolved significantly since its inception in the 1970s, beginning with institutions like SEWA Bank in 1974 and expanding through initiatives such as NABARD's Self-Help Group (SHG)-Bank Linkage Programme in 1992 and the Joint Liability Group (JLG) model in the early 2000s. It serves as a key driver of financial inclusion, providing collateral-free credit, savings, insurance, and other services to underserved populations, including rural women, marginal farmers, and low-income entrepreneurs, contributing to poverty alleviation and socio-economic development.

This study aims to evaluate the financial health of the microfinance sector in India, focusing on portfolio growth, asset quality, profitability, and sustainability, while identifying challenges and opportunities for enhanced outreach and impact on financial inclusion.

The analysis is based on secondary data sourced from reports by organizations such as SIDBI, NABARD, MFIN India, Sa-Dhan and RBI, including quarterly pulse reports, annual microfinance reviews, and sector-specific study. Data compilation involved financial ratios from member microfinance institutions (MFIs).

By 2024-2025, the sector had grown to encompass over 8 crore unique borrowers across all states and union territories, supported by regulatory frameworks from the Reserve Bank of India (RBI) and government schemes like Pradhan Mantri Mudra Yojana (PMMY). To ensure long-term sustainability, the sector requires strengthened risk management, digital innovation, diversified funding, and enhanced regulatory support, ultimately reinforcing its role in rural development and poverty reduction.

Keywords: Microfinance, India, financial health, financial ratios, financial performance, financial indicator, NBFC-MFIs, NABARD, RBI, Sa-dhan.

INTRODUCTION

Microfinance in India has evolved significantly over the past five decades, emerging as a critical tool for financial inclusion and poverty alleviation. Originating in 1974 with the establishment of SEWA Bank in Gujarat, which focused on providing financial services to poor, self-employed women overlooked by traditional banking, the sector has undergone four key phases: traditional microfinance (1974-1990), economic reforms and new-age models (1991-1999), transformative growth (2000-2012), and post-2012 advancements embracing digital and regulatory frameworks. Milestones include the NABARD-initiated SHG-bank linkage program in 1992, the RBI's Malegam Committee recommendations in 2010 following the Andhra Pradesh crisis, and the launch of schemes like Pradhan Mantri Jan Dhan Yojana (PMJDY) in 2014 and MUDRA Bank in 2015. Despite disruptions from the COVID-19 pandemic, which strained operations and increased delinquencies, the sector has demonstrated resilience, recovering through digital adoption and regulatory support. As of March 2024, the Indian microfinance industry boasts a total loan portfolio of approximately ₹4.42 lakh crore, serving over 8.67 crore active borrowers, primarily low-income women in rural and semi-urban areas. This growth, at a compound annual growth rate (CAGR) of over 18% in the past five years, underscores its role in empowering underserved populations, though it faces ongoing challenges like regional concentration and asset quality deterioration. The sector's financial health is pivotal, as it not only drives economic empowerment but also contributes to broader goals like Viksit Bharat by 2047, with institutions such as NBFC-MFIs, banks, and small finance banks (SFBs) playing dominant roles.¹

OBJECTIVES

The primary objectives of this research paper are as follows:

- To evaluate the growth trajectory and outreach of the microfinance sector in India, including portfolio expansion, borrower base, and regional distribution.
- To assess key financial performance indicators, such as profitability, asset quality (e.g., non-performing assets or NPAs), and operational efficiency.
- To identify major challenges, including over-indebtedness, regulatory impacts, and post-COVID recovery issues, while examining trends over the last five years.

¹ <https://www.orfonline.org/research/fifty-years-of-indian-microfinance-challenges-to-making-a-more-profound-impact>

https://www.brickworkratings.com/Research/Microfinance_Sector_In_India_28May2025.pdf

<https://www.sa-dhan.net/wp-content/uploads/2025/05/Bharat-Microfinance-Report-2024.pdf>

https://mfinindia.org/assets/upload_image/publications/AnnualReports/mifinlatest2025.pdf

- To provide insights into the sector's sustainability and future outlook based on secondary data, aiming to inform policymakers, regulators, and stakeholders on enhancing financial health.

METHODOLOGY

This study relies exclusively on secondary data sources to analyze the financial health of India's microfinance sector. Data were compiled from published reports, industry analyses, and official documents up to FY 2024-25. Key sources include the Bharat Microfinance Report 2024 by Sa-Dhan, the MFIN Annual Report 2024-25, Brickwork Ratings' sector report (May 2025), and the Observer Research Foundation's (ORF) review of 50 years of Indian microfinance. These reports were selected for their comprehensive coverage of sector metrics, drawn from aggregated data submitted by microfinance institutions (MFIs), banks, and regulators like the RBI and NABARD. The analysis involved qualitative review of trends and quantitative aggregation of indicators such as gross loan portfolio (GLP), growth rates, NPAs, and return on assets (ROA). No primary data collection was conducted; instead, the methodology focused on synthesizing existing statistics to ensure objectivity and reliance on verified industry benchmarks. Data spans FY 2019-20 to FY 2024-25, with emphasis on post-COVID recovery periods.²

RESULTS

The results highlight robust growth in outreach and portfolio size, tempered by rising asset quality concerns. As of March 2024, the sector's total loan outstanding reached ₹4,42,700 crore, marking a 27% year-on-year (Y-o-Y) growth, with 8.67 crore active clients (17% Y-o-Y growth) and 1,613 lakh loan accounts (14% Y-o-Y growth). Loan disbursements for FY 2023-24 totaled ₹3,87,874 crore, up 19% Y-o-Y. The GLP of micro-lending institutions (MLIs) stood at ₹2,61,239 crore, reflecting a 45% growth, while the SHG Bank Linkage Programme covered 17.75 crore rural households with savings of ₹65,089 crore (10.52% growth) and credit disbursements of ₹2,09,286 crore (44.14% growth).

² https://www.brickworkratings.com/Research/Microfinance_Sector_In_India_28May2025.pdf

<https://www.sa-dhan.net/wp-content/uploads/2025/05/Bharat-Microfinance-Report-2024.pdf>

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<https://www.orfonline.org/research/fifty-years-of-indian-microfinance-challenges-to-making-a-more-profound-impact>

Institution Type	Loan Outstanding (₹ Cr)	Market Share (%)	Active Clients (Lakh)	Y-o-Y Growth (%)
NBFC-MFIs	1,73,504	39	~315	28 (GLP)
Banks	1,46,909	33	~190	19
SFBs	74,712	17	~105	5
NBFCs	45,236	10	~73	17

Table 1: Breakdown by institution type reveals NBFC-MFIs as the largest segment

Regional distribution shows concentration in the East and North East (33%), South (28%), North (16%), West (14%), and Central (9%) regions, with 10 states accounting for 84% of the portfolio. Financial performance indicators include an average ROA of 2.64% for top NBFC-MFIs over eight years, with NBFC-MFIs achieving ROA of 4.20% and ROE of 20.07% in FY 2023-24. However, asset quality weakened, with Portfolio at Risk (PAR >30 days) rising to 8.4% as of March 2025 (from 3.6% in March 2024), and gross NPAs surging to 16% in FY 2025 from 8.8% in FY 2024. Over the last five years, the portfolio grew at a CAGR of 18%, but FY 2024-25 saw a slowdown, with AUM growth for NBFC-MFIs projected at 0%-5%, down from 28%-29% in FY 2024. Employment generation reached 2.30 lakh jobs, with the sector operating through 24,523 branches.³

DISCUSSION

The results indicate a sector that has doubled its outreach and portfolio over the past decade, demonstrating strong recovery from COVID-19 through digital innovations and increased funding from banks and capital markets. However, rising delinquencies, with PAR 31–180 days climbing to 6.4% in December 2024, point to over-indebtedness, where borrowers often juggle loans from 4-5 lenders, exacerbated by economic slowdowns and unauthorized loan waiver campaigns in states like Uttar Pradesh and Karnataka. Regulatory changes, such as RBI's 2022 framework capping indebtedness at ₹2 lakh and limiting lenders to three per borrower (effective April 2025 via MFIN Guardrails), have promoted responsible lending but slowed disbursements and increased rejection rates. Regional concentration limits broader impact, with underserved

³https://www.brickworkratings.com/Research/Microfinance_Sector_In_India_28May2025.pdf

<https://www.sa-dhan.net/wp-content/uploads/2025/05/Bharat-Microfinance-Report-2024.pdf>

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<https://www.orfonline.org/research/fifty-years-of-indian-microfinance-challenges-to-making-a-more-profound-impact>

areas facing funding gaps due to low financial literacy and climatic risks. Profitability remains solid for larger institutions, but smaller MFIs struggle with funding costs (10.5%-16%) and margin compression. Overall, while the sector contributes to job creation (e.g., 130 lakh jobs as per some estimates) and women's empowerment, addressing over-leveraging and enhancing financial literacy are crucial for long-term sustainability.⁴

CONCLUSION

In conclusion, India's microfinance sector exhibits robust financial health in terms of growth and outreach, with a portfolio exceeding ₹4 lakh crore and serving nearly 8 crore borrowers, positioning it as a key driver of inclusive development. However, emerging challenges like asset quality deterioration, over-indebtedness, and regional imbalances threaten its stability, as evidenced by rising NPAs and slowed growth in FY 2024-25. Strengthened regulatory measures and innovations in digital lending and climate-resilient products are essential to mitigate risks and ensure sustainable impact. Policymakers should prioritize enhanced financial literacy and equitable regional expansion to realize the sector's full potential.

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COMPLIANCE ANALYSIS OF BUSINESS RESPONSIBILITY AND SUSTAINABILITY REPORTING (BRSR) -CASE STUDY OF SELECTED ENERGY SECTOR COMPANIES

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ABSTRACT

BRSR is the standardized reporting framework introduced by the Securities and Exchange Board of India with a view to considering Environmental, Social, and Governance aspects in standardized disclosures, emphasizing the ESG performance of the business enterprise.

Till today, there have been various studies conducted by researchers that focused on the financial performance, which is essential to the financial parameters of selected Indian companies. However, as it is the era of transformation, the study of overall sustainable development has gained importance rather than just financial performance. The BRSR is the essence of measuring sustainability that is applicable to the top 1000 listed companies based on their market capitalization with effect from 2023-2024.

The present study is an attempt to evaluate selected companies from the energy sector with respect to the quantitative indicators included in BRSR in the form of the BRSR Score calculated on the Sustainability Reporting Maturity Model 2 (SRMM-2) to understand how well companies are performing in BRSR and what level of compliance is followed by the companies. The study used a convenience sampling method to select

the companies, and selected Adani Green Energy Limited (AGEL), National Thermal Power Corporation (NTPC), Inox Wind Energy Limited (IWEL), Power Grid Corporation of India Limited (PGCIL), and Sterling and Wilson Renewable Energy Limited (SWREL) as the sample of the study.

The period of study includes the financial year 2023-2024. Various hypotheses are framed and tested using appropriate parametric or non-parametric tests based on the Normality of the data. From the analysis and findings it can be concluded that though many companies are adopting BRSR reporting the extent of disclosures is not the same. There is a significant difference seen in reporting items. It is essential that all companies should disclose all the information so as to bring more transparency, which is the prime objective of BRSR. Out of the selected sample companies best reporting is done by AGEL followed by NTPC. Remaining companies had only complied with the formality of BRSR reporting just by disclosing essential indicators in the BRSR report.

Key words: BRSR, Energy sector, SRMM, Compliance

INTRODUCTION

The main purpose of preparing financial statements is to communicate corporate information to stakeholders, helping them in various ways. It is the only method by which businesses share their financial data with relevant stakeholders, primarily to guide investment decisions and increase transparency. However, due to some limitations of financial statements, they do not always fulfil their purpose. The main limitation is the quantitative nature of financial information. Financial statements of companies only include events that are measurable in numerical terms. This characteristic of financial statements is a major obstacle to achieving a "true and fair view" because it excludes non-financial information, despite its material relevance. To overcome this constraint, various steps have been taken, including Narrative Disclosures/Notes to Accounts, Management Discussion and Analysis (MD&A), Corporate Governance Reports, Sustainability Reporting (Non-Financial Reporting), Global Reporting Initiative (GRI), Integrated Reporting (IR), and Auditor's Report & Assurance Services. Companies now report on ESG (Environmental, Social, Governance) parameters through the Business Responsibility and Sustainability Report (BRSR) in India, and Global Reporting Initiative (GRI) standards internationally.

BUSINESS RESPONSIBILITY AND SUSTAINABILITY REPORTING (BRSR)

BRSR is the standardized reporting framework introduced by the Securities and Exchange Board of India with a view to considering Environmental, Social, and Governance aspects in standardized disclosures, emphasizing the ESG performance of the business enterprise. BRSR is based on the National Guidelines on Responsible Business Conduct (NGRBC), which has replaced the earlier Business Responsibility Reporting

(BRR) practice. SEBI, in the financial year 2021, made BRSR compulsory, and it was enforceable from the financial year 2022-23 for the top 1000 listed companies based on their market capitalization. BRSR includes nine principles and guidance for companies in adopting ethical, transparent, and sustainable business practices. The main feature of this report is that it is, along with the financial information, it also reports the non-financial parameters of the business, overcoming the limitations of the quantifiable nature of financial reporting.

EVOLUTION OF BUSINESS RESPONSIBILITY AND SUSTAINABILITY REPORTING (BRSR)

Before 2012 there was not standard and structured framework for the reporting of the non-financial information, so the Indian companies used to follow CSR activities on the voluntary basis. In 2012, the **(SEBI)** has mandated **Business Responsibility Reports (BRR)** for the top 100 listed companies by market capitalization (which was further extended to top 500 companies in 2015 and the top 1000 companies in 2019). The BRR was aligned with the **National Voluntary Guidelines (NVGs) on Social, Environmental, and Economic Responsibilities of Business (2011)** issued by the Ministry of Corporate Affairs (MCA). This was India's first structured attempt at non-financial ESG reporting. However, due to certain limitation of the BRR, MCA revised NVGs into the **NGRBC (2019)** to bring greater clarity and alignment with global ESG principles. This move of the SEBI created foundation for a more comprehensive reporting format. In May 2021, SEBI introduced the **Business Responsibility and Sustainability Report (BRSR)** that quantitative KPIs, ESG disclosures, and sustainability-linked data., and mandate it from 2022-23 replacing BRR. It is assumed that it can be evolve further with **BRSR Core**, that introduces requirements for certain ESG metrics, ensuring credibility and preventing greenwashing. India aims to integrate ESG performance into investment decisions, making BRSR a critical tool for sustainable finance.

ENERGY SECTOR

The energy sector is crucial for driving economic growth, but it also faces significant challenges, as it is the largest contributor to carbon emissions, air pollution, and resource depletion. While considering sustainability, environmental wellness should be prioritized. The growing dependency on renewable energy sources, such as solar, wind, hydro, and biomass, addresses the burning issue of climate change by reducing dependency on fossil fuel-based resources. When we discuss green energy, we consider not only affordability but also the environmental impact. Therefore, the study is based on the sustainability reports, specifically the BRSR report of Adani Green Energy Limited and NTPC Limited.

ADANI GREEN ENERGY LIMITED

Adani Green Energy Limited (AGEL), established in 2015, is a prominent company in India's renewable energy sector, with a total operational renewable portfolio of 14,242.9 MW. AGEL is performing

in a way that it can opt for the philosophy of “Growth with Goodness” of the Adani Group, which has made the promise to build and operate in such a manner that can enhance a better, cleaner, and greener future for India. The business operation of the company includes utility-scale grid-connected solar and wind farm projects. It is a major electricity provider/ supplier to the central and state government entities and government-backed corporations. (Adani Green Energy Limited , n.d.)

NTPC

The main motto of the NTPC is the light every corner of the country and to create a sustainable future for all. It targets to generate 130 GW of energy by 2032 in response to its commitment to generate efficient and affordable energy. It falls under the category of an integrated power company and is the biggest leader of the power industry. It has been contributing to India’s economic growth for the last five decades since its establishment in 1975. To minimise carbon footprint, it holds a diverse fuel mix that integrates fossil fuels, hydro, gas, nuclear, and renewable sources. (NTPC, n.d.)

INOX WIND ENERGY LIMITED

This company was incorporated in the year 2020 under the Companies Act, 2013. The main objective of this company is to generate and sale of wind energy, rendering services for Erection, Procurement, and Commissioning (EPC) of wind farms, and have strategic business interest in renewables. (Inox Wind Energy Limited , n.d.)

POWER GRID CORPORATION OF INDIA LIMITED

Power Grid Corporation of India Limited was incorporated in October 1989. It is “Maharatna” of Schedule A, a public sector enterprise of the government of India. It is a listed company with 51.34% government holding or government ownership, and the rest of the stake is held by institutional Investors and the public.

STERLING AND WILSON RENEWABLE ENERGY LIMITED (“SWREL”)

Sterling and Wilson Solar is a leading brand in the Indian solar energy sector. It offers a power solution that includes the development of the project, operation, and design. Sterling and Wilson Solar is the leading to become the leader in India’s renewable energy sector. It was established in 2017.

LITERATURE REVIEW

Sustainability reporting has gained significance in the Indian energy sector, driven by the regulatory framework and increased transparency regarding its environmental impact. Recent studies on sustainability have explored, compared, and analyzed BRSR with BRR and GRI, as well as correlated sustainability

performance with financial performance in relation to the disclosure of BRSR. The following are some important studies.

(Nayak & Kayarkatte 2020) conducted a case study of Infosys and explored the ten-year sustainability report to explore the reporting method followed by the company. The study was conducted to understand the effect of the reporting method on the development of the business and synergy. Further, it concluded that ESG disclosures are increasing as companies are realising the importance of non-financial disclosure.

(Arora et al., 2023), In their study, they analysed the sustainability disclosure of eighteen companies. The study did evaluation of the contribution of sustainability disclosures in sustainable development goals by applying the criteria of the Global Reporting Initiative (GRI) and categorizing companies on the basis of market capitalization, type (government vs. private), and Industry (as per the UNFCCC segmentation under the Energy sector). The study discloses that SDG 10 and SDG 11 are among the SDGs for which most of the companies have not disclosed sustainability performance, while SDG 4, SDG 5, and SDG 9 are the most contributed.

(Goel & Ramesh, 2016) By considering the company's social responsibility, corporate governance, and sustainable reporting as measures of ethical identity, the study examined the corporate identity and financial performance of Indian companies. It concluded that only sustainability reporting has a notable impact on a firm's economic performance, whereas parameters such as the company's social responsibility and corporate governance have no significant effect.

Nial and Parashar (2024) in their study compared business responsibility sustainability reporting with the Global Reporting Initiative. The researcher's methodology included content analysis of the BRSR guidelines and 36 GRI standards, which confirmed that eighteen areas support the argument that BRSR is more informative than GRI, while seven areas require alteration of BRSR. This study was highly useful in contributing to the understanding of the alignment between sustainability frameworks and international standards.

RESEARCH METHODOLOGY

Research Gap:

Till today, there have been various studies conducted by researchers that focused on the financial performance, which is essential to the financial parameters of selected Indian companies. However, as it is the era of transformation, the study of overall sustainable development has gained importance rather than just financial performance. The BRSR is the essence of measuring sustainability that is applicable to the top 1000 listed companies based on their market capitalization.

The present study is an attempt to evaluate selected companies from the energy sector with respect to the quantitative indicators included in BRSR in the form of the BRSR Score calculated on the Sustainability

Reporting Maturity Model 2 (SRMM-2) to understand how well companies are performing in BRSR and what level of compliance is followed by the companies.

RESEARCH OBJECTIVES:

1. To analyse that the selected companies under study have complied with the requirements of BRSR during the year 23-24.
2. To analyse and examine the disclosure requirements satisfied by the selected companies by building up the BRSR score during the year 2023-24.

SELECTION OF SAMPLE:

The study used a convenience sampling method to select the companies, and selected Adani Green Energy Limited (AGEL), National Thermal Power Corporation (NTPC), Inox Wind Energy Limited (IWEL), Power Grid Corporation of India Limited (PGCIL) and Sterling and Wilson Renewable Energy Limited (SWREL) as the sample of the study.

PERIOD OF THE STUDY:

The period of study includes the financial year 2023-2024. This period is chosen as the BRSR report of the financial year 2024-25 was mostly not available yet, and the year 2023-24 represents the most recent and complete set of information on BRSR. The BRSR reports of the financial year 2023-24 are evaluated for the selected companies.

TOOLS AND TECHNIQUES OF THE STUDY

The present study employed the Independent T-test/Mann Whitney U Test depended on Normality of data to test the framed hypotheses by comparing the mean values of two independent groups. such a test is applied to test the difference between all five companies, considering groups of two. ANOVA is applied to test the significant difference between and within the five companies. That can be helpful in concluding if a statistically significant difference exists or not within and between the groups. If the result shows the p-value < 0.05 , the null hypothesis is rejected, indicating a significant difference; otherwise, it is accepted.

HYPOTHESIS

H1₀: There is no significant difference in the BRSR score of the Adani Green Energy Limited (AGEL) and National Thermal Power Corporation (NTPC).

H1₁: There is a significant difference in the BRSR score of the Adani Green Energy Limited (AGEL) and National Thermal Power Corporation (NTPC).

H20: There is no significant difference in the BRSR score of the Adani Green Energy Limited (AGEL) and Inox Wind Energy Limited (IWEL)

H21: There is a significant difference in the BRSR score of the Adani Green Energy Limited (AGEL) and Inox Wind Energy Limited (IWEL)

H30: There is no significant difference in the BRSR score of the Adani Green Energy Limited (AGEL) and Power Grid Corporation of India Limited (PGCIL).

H31: There is a significant difference in the BRSR score of the Adani Green Energy Limited (AGEL) and Power Grid Corporation of India Limited (PGCIL).

H40: There is no significant difference in the BRSR score of the Adani Green Energy Limited (AGEL) and Sterling and Wilson Renewable Energy Limited (“SWREL”)

H41: There is a significant difference in the BRSR score of the Adani Green Energy Limited (AGEL) and Sterling and Wilson Renewable Energy Limited (“SWREL”).

H50: There is no significant difference in the BRSR score of the National Thermal Power Corporation (NTPC). And Inox Wind Energy Limited (IWEL)

H51: There is a significant difference in the BRSR score of the National Thermal Power Corporation (NTPC) and Inox Wind Energy Limited (IWEL)

H60: There is no significant difference in the BRSR score of the National Thermal Power Corporation (NTPC). And Power Grid Corporation of India Limited (PGCIL).

H61: There is a significant difference in the BRSR score of the National Thermal Power Corporation (NTPC) and Power Grid Corporation of India Limited (PGCIL).

H70: There is no significant difference in the BRSR score of the National Thermal Power Corporation (NTPC). and Sterling and Wilson Renewable Energy Limited (SWREL).

H71: There is a significant difference in the BRSR score of the National Thermal Power Corporation (NTPC) and Sterling and Wilson Renewable Energy Limited (SWREL).

H80: There is no significant difference in the BRSR score of the Inox Wind Energy Limited (IWEL) and Power Grid Corporation of India Limited (PGCIL).

H81: There is a significant difference in the BRSR score of the Inox Wind Energy Limited (IWEL) and Power Grid Corporation of India Limited (PGCIL).

H90: There is no significant difference in the BRSR score of the Inox Wind Energy Limited (IWEL) and Sterling and Wilson Renewable Energy Limited (SWREL).

H91: There is a significant difference in the BRSR score of the Inox Wind Energy Limited (IWEL) and Sterling and Wilson Renewable Energy Limited (SWREL).

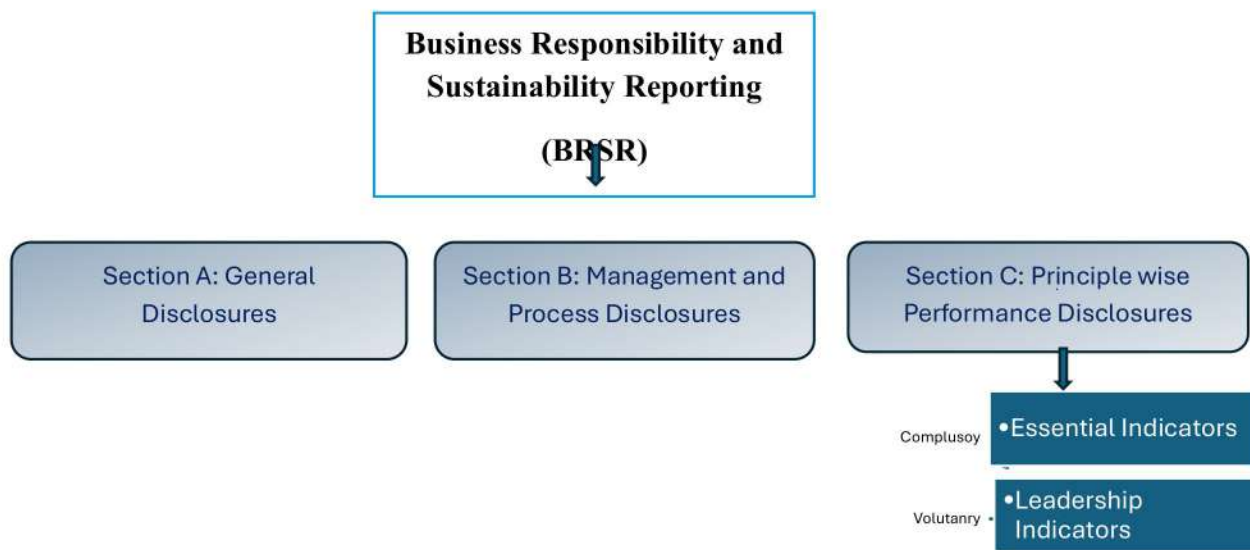
H100: There is no significant difference in the BRSR score of Power Grid Corporation of India Limited (PGCIL) and Wilson Renewable Energy Limited (SWREL).

H10₁: There is a significant difference in the BRSR score of Power Grid Corporation of India Limited (PGCIL) and Sterling and Wilson Renewable Energy Limited (SWREL).

H11₀: There is no significant difference in the BRSR score of selected sample companies,

H11₁: There is a significant difference in the BRSR score of selected sample companies.

BUSINESS RESPONSIBILITY AND SUSTAINABILITY REPORTING (BRSR) FRAMEWORK.



Business Responsibility and Sustainability Reporting (BRSR) basically contained three sections containing various disclosures as follows.

SECTION A: GENERAL DISCLOSURES

Under this section, general information about the company, including its name, size, location, products or services, number of employees, market served, and listing status, is provided. Furthermore, this section also incorporates information related to the company's CSR activities, regulatory filings, and sustainable initiatives, with the aim of familiarizing stakeholders with the company's overall structure.

SECTION B: MANAGEMENT AND PROCESS DISCLOSURES

This section highlights the integration of sustainability and responsibility into the management of the business by including the details about the policies and governance, and stakeholders' engagement. It also exhibits how the principles of environment, social, and governance are implemented in the reporting. This section determines the ethical policies, risk management framework, grievance redressal mechanism, and broad-level oversight of sustainability.

SECTION C: PRINCIPLE-WISE PERFORMANCE DISCLOSURES

This section is the core of the BRSR report, which contains disclosure of the performance of the company against the nine principles of the National Guidelines on Responsible Business Conduct (NGRB), which are as follows.

PRINCIPLE 1	Integrity and Accountability: This principle mainly concerns with the integrity in conducting the business, transparency, accountability and ethical behaviour of the business.
PRINCIPLE 2	Sustainable and Safe Products Under this principle, sustainability of the life cycle of the product and services is taken into consideration, according to which business should conduct or provide goods and services without harming the environment, society, and nature. Thus, business conduct must be sustainable.
PRINCIPLE 3	Employee Well-being This principle basically takes care of the well-being of the employees, workers by providing them with social securities like health insurance, retirement benefits, inclusiveness of all genders, and growth opportunities.
PRINCIPLE 4	Stakeholder Responsiveness This principle is about the responsiveness of the business toward the stakeholders. That includes conducting meaningful dialogue with them and addressing their concern.
PRINCIPLE 5	Human Rights Business must be conducted in such a manner that no human right should be harmed. It must respect and promote human rights in its business and across all its operations, ensuring that no business practices harm the rights of any individual or community.
PRINCIPLE 6	Environmental Protection Businesses should conduct their operations in such a way that protects the environment and contributes to sustainability.
PRINCIPLE 7	Responsible Public Policy Engagement The action and public policy of the business should be responsible, transparent, and ethical.

PRINCIPLE 8	Inclusive Growth Businesses should promote inclusive growth and equitable development, contributing to the welfare of society and addressing inequalities.
PRINCIPLE 9	Consumer Value Businesses should engage with and provide value to their consumers in a responsible manner, ensuring that their products and services meet safety and quality standards.

[NationalGuideline_15032019.pdf](#)

Disclosures under this section are categorized into two categories,

- (I) Essential Indicators:** These are mandatory indicators that include disclosures like customer welfare, responsible marketing, data privacy, and product quality. The purpose of these indicators is to ensure accountability and transparency of the business towards its customers.
- (II) Leadership Indicators:** These highlight best business practices, grievance redressal, customer satisfaction, etc. The purpose of this disclosure is to encourage businesses to go beyond legality and voluntarily report. They are not compulsory.

SUSTAINABILITY REPORTING MATURITY MODEL (SRMM)- VERSION 2.0

The Ministry of Corporate Affairs' Committee on Business Responsibility Reporting introduced a detailed framework for Business Responsibility and Sustainability Reporting (BRSR) in August 2020. It is structured in such a way that it can help Indian companies to report their non-financial disclosures as well. The SEBI, in May 2021, required its adoption for top 1000 listed companies based on their market capitalisation. It was initially voluntary, i.e. in F.Y 2021-22, and then from F.Y 2022-23, it was mandatory. BRSR aims to encourage responsible and sustainable business practices while speeding up India's progress toward the Sustainable Development Goals (SDGs). To make it comparable, the Institute of Chartered Accountants of India created a Sustainability Reporting Maturity Model (SRMM). To align this model with the SEBI's BRSR, this model was updated to version 2.0. This model assigns a score to all three sections and nine principles, the total score of which is 300 points. Further, it also has a structure of categorisation of the companies into four maturity levels, containing (i) Formative Stage, (ii)Emerging Stage, (iii)Established Stage, and (iv)Leading By Example, Level 1, Level 2, Level 3, Level 4, respectively. This model helps companies evaluate their sustainability status, find gaps, strengthen internal controls, and create plans to reach higher levels of sustainability reporting maturity.

SUSTAINABILITY REPORTING MATURITY MODEL (SRMM) VERSION 2.0

Level	Level 1	Level 2	Level 3	Level 4
Stage	Formative Stage	Emerging Stage	Established Stage	Leading by Example
BRSR Score (Percentage of Grand Total Score)	Up to 25%	> 25% and Up to 50%	> 50% and Up to 75%	> 75%
Explanation	The organisations are at the initial level of reporting and are in the process of identifying the need and responsibility of BRSR.	The organisations realize the value of BRSR and responds to it by setting up robust mechanism for reporting, etc.	The organisations have established formal functions/ policies/ systems for BRSR.	The organisations strive for more than compliance and work towards being a market leader.
	Try to establish policies/ systems for data collection and disclosures.	The functions/ policies/ systems for such reporting are still to be formalised/ focussed. The organisation is working towards establishing/ enhancing internal controls, data collection and disclosures.	Involved in compliance functions, etc., and focus increasing on qualitative aspects.	Strategically differentiating by enhancing disclosures vis a vis innovative methods/ technique employed.

(Source: Sustainability Reporting Standards Board, The Institute of Chartered Accountants of India)

EVALUATION OF BRSR REPORT OF THE SELECTED COMPANIES.

Adani Green Energy Limited (AGEL): Adani Green Energy Limited is India's biggest energy producer. As per the BRSR report of 2023-24, Adani Green Energy Limited has 92 operational plants across twelve states in India. This company is committed to sustainable energy generation, which can be exhibited by its ten thousand-plus MW of capacity of renewable energy under management. The company made its disclosure on a consolidated basis, which is assured by Intertek India, making it credible for the claim of sustainability. Further, this company focused on vivid aspects of strong governance, like including grievance redressal mechanisms for communities, employees, and investors. It has also signed long-term PPAs with sovereign counterparties like SECI, NTPC, and state DISCOMs that enhance the consistency in revenue generation, along with the promotion of clean energy adoption. However, it has certain limitations, such as having low diversity in the workforce, with only 2% of the presentation of women employees. Another important aspect that can be seen from the report is its CSR spending, which stood at ₹16.48 crore. The focus of the CSR activity targets community welfare and environmental initiatives. In conclusion, AGEL is a dominating company in the field of the clean energy sector, although it must focus on stronger inclusion and social equity measures.

NTPC: NTPC is the largest power producer in India, having a diversified energy portfolio across coal, gas, hydro, solar, and wind. As per the BRSR report 2023-24, Bureau Veritas assured a high standard of governance and disclosure. It is a domestic and globally presented entity, having 93 plants and 17 offices all over India, and an overseas presence in Sri Lanka and Bangladesh.

It has a 94% turnover that belongs to power generation, out of which coal accounts for 83.66%.

The company employed nearly 16,000 employees and 1.3 lakh workers, with policies related to health, safety, and retirement. The proportion of the is still limited to 7.4% of employees with representation of 9% on the Board. It has also conducted a CSR activity. Even though, company is engaged in renewables and green hydrogen, to reduce its dependency on coal. The BRSR represents strong governance, environmental responsibility, and community engagement.

Inox Wind Energy Limited (IWEL): This company is comparatively in its initial stage, as it was incorporated in 2020. The company is engaged primarily in wind energy generation, EPC (Erection, Procurement and Commissioning) services, and investment activities through its subsidiaries. It has limited operation up to two offices in India, and it reports only on a standalone basis without any assurance from a third party. It has just two permanent employees. There is 16.67% representation of women on the board; however, there is no diversity in management. It has subsidiaries engaged in wind energy services, which exhibit future potential. As the company does not have enough scale of operation, it did not conduct any CSR activity. The BRSR report clearly shows no deep sustainability integration. The company must focus on ESG parameters along with growth, as it is in its initial stage.

Power Grid Corporation of India Limited (PGCIL): This company plays a major role in energy transmission in India. It has its operation in all states of India, and it has consultancy services in twenty-three countries. The assurance agency is Grant Thornton, which increases the credibility. The focus of the operation is power transmission intra-state and inter-state, which contributes to 97% of turnover. It employs around 7000 workers and is further supported by over 18,000 contract workers. There are 184 differently abled workers. However, the representation of women is negligible in leadership. Turnover of the company is Rs. 40000 crores, which makes it eligible for CSR. The company is also doing well on ESG aspects.

Sterling and Wilson Renewable Energy Limited (SWREL): This company is globally providing EPC and O&M services for renewable projects. It has operations in 17 states and 29 countries all over the world. It gives its service as an independent power producer and a public sector undertaking, and a global private equity firm that plays a crucial role in the clean energy sector. The BRSR report is prepared on a standalone basis and

has no third-party assurance, which leads to a decrease in credibility. The company employed 1300 staff and ten thousand plus workers on a contract basis. The ratio of women among the employees is 4.4% and on the board, it is 25%. However, the company faces challenges like high attrition rates, i.e., 37% among permanent employees. Even though the company is eligible for CSR in 2023-24, there is no recorded CSR investment in a particular financial year. Overall BRSR report of the company shows a strong global reach, diversity, but it needs to improve employee retention and consistent CSR investment.

BRSR Score interpretation: From Table 1 it can be concluded that out of selected sample companies AGEL and NTPC are Level 4 companies considering maturity level as per disclosures observed in BRSR report however remaining 3 companies viz IWEL,PGCIL and SWREL are Level 3 companies with lower disclosures comparatively. It was also seen that out of two types of indicators Only AGEL and NTPC is disclosing both Essential and Leadership indicators whereas rest of the companies are just fulfilling essential indicators.

Table 1 BRSR score

BRSR score is built with SUSTAINABILITY REPORTING MATURITY MODEL (SRMM)-VERSION 2.0 issued by ICAI.

	AGEL			NTPC			IWEL			PGCIL			SWREL		
	Total score	Score obtained	%	Total score	Score obtained	%	Total score	Score obtained	%	Total score	Score obtained	%	Total score	Score obtained	%
Section A	15	8	53.33	18	13	72.22	18	10	55.56	18	13	72.22	18	8	44.44
Section B	21	20	95.24	24	24	100.00	21	13	61.90	24	20	83.33	24	18	75.00
Section C															
P1	24	22	91.67	23	18	78.26	24	13	54.17	24	19	79.17	24	14	58.33
P2	18	16	88.89	27	12	44.44	17	3	17.65	24	12	50.00	14	2	14.29
P3	38	38	100.00	49	45	91.84	34	26	76.47	49	36	73.47	49	31	63.27
P4	10	9	90.00	10	7	70.00	10	6	60.00	10	3	30.00	10	7	70.00
P5	19	18	94.74	20	18	90.00	18	17	94.44	20	14	70.00	20	14	70.00
P6	49	37	75.51	54	43	79.63	20	10	50.00	28	19	67.86	47	21	44.68
P7	7	7	100.00	5	5	100.00	7	5	71.43	7	5	71.43	7	5	71.43
P8	24	12	50.00	24	13	54.17	24	3	12.50	24	9	37.50	16	4	25.00
P9	29	26	89.66	41	33	80.49	43	26	60.47	27	22	81.48	32	27	84.38
Total	254	213	83.86	295	231	78.31	236	132	55.93	255	172	67.45	261	151	57.85
Level	Level4			Level4			Level3			Level3			Level3		

Source: BRSR reports of selected companies

Table 2 Hypothesis testing with results

Company	Independent T Test/Mann Whitney U test	P value	Hypothesis Accepted
AGEL and NTPC	Mann-Whitney U test	0.325	Null
AGEL and IWEL	Mann-Whitney U test	*0.008	Alternate
AGEL and PGCIL	Mann-Whitney U test	*0.004	Alternate
AGEL and SWREL	Mann-Whitney U test	*0.002	Alternate
NTPC and IWEL	Independent T test	*0.011	Alternate
NTPC and PGCIL	Mann-Whitney U test	*0.069	Alternate
NTPC and SWREL	Independent T test	*0.010	Alternate
IWEL and PGCIL	Mann-Whitney U test	0.175	Null
IWEL and SWREL	Independent T test	0.940	Null
PGCIL and SWREL	Mann-Whitney U test	0.248	Null

Source: Table 1

Table 3 ANOVA result

ANOVA - Company					
Cases	Sum of Squares	df	Mean Square	F	p
Companies	7919	4	1979.8	5.495	< .001
Residual	19817	55	360.3		

Note. Type III Sum of Squares

Source: Table 1

From the above table it can be concluded that there is significant difference between and within the BRSR score of selected 5 companies.

Conclusion- From the analysis and finding it can be concluded that though many companies are adopting BRSR reporting but extent of disclosures is not same. There is significant difference seen in reporting items. It is essential that all companies should try to become more and more transparent to serve the purpose of BRSR reporting.

Out of selected sample companies best reporting is done by AGEL followed by NTPC. Remaining companies had only complied with formality of BRSR reporting just by disclosing essential indicators in BRSR report.

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UNDERSTANDING THE EFFECTS OF DIGITALISATION ON EMPLOYEE JOB SATISFACTION: A SYSTEMATIC LITERATURE REVIEW.

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ABSTRACT:

Digitization is one of the main drivers of changing the way of work within enterprises because new business models evolve from recent digitization processes. Digitalization is not novel in today's age. Digitalization is not limited to an organization only but it is also connected with the employees. Employees at all levels are affected by digitalisation. So when an organization goes for digitalization it is imperative for the organization to consider the impact of digitalization on its employees. The organization should consider it very crucial to make digitalization an easy affair for the employees. The employees not only are affected by digitalization but they are the drivers of digitalisation. An organization could have said to be successfully integrated technology in its all processes only if the employees are able to adapt it and get job satisfaction from it. This paper aims at studying the impact of digitalization on employee job satisfaction by analyzing pre-established variables by doing a thorough review of literature.

Keywords: Digitalization, Job Satisfaction, Integration of technology

1. INTRODUCTION

Digitalization refers to the use and integration of new technologies into everyday life, across all industries and sectors. It is a combination of connecting and combining of physical and digital things in new ways, and many consider it to be one of the defining characteristics of modern life. There are various processes in an organization where digitalization is possible. The organization needs to analyse the processes where

digitalization would be a win win situation for both the organization and its employees. Employees are generally used to traditional methods and hence they are resistance to change in pre-established methods. If an organization has to digitalize its processes the nit has to be done in such a way that the employees do not feel left out or do not perceive any job insecurity during the onboarding of technology. Technology is brought with an intention to bring progress to the organization. However, the progress is majorly dependent on how well the technology is adopted by the employees. The organization therefore needs to understand the various parameters of employee performance and also whether technology would improve job satisfaction among employees.

This systematic review of literature aims to critically review and synthesize the existing body of knowledge on the sustainability of digital entrepreneurship. It will examine the key themes, theories, empirical findings, and research gaps related to the effect of digitalization on employee job satisfaction from multidisciplinary perspectives, including entrepreneurship, innovation, sustainability, and digital technologies. By systematically synthesizing the existing literature, this review seeks to contribute to the understanding of the challenges, opportunities, and best practices for achieving sustainability in digital entrepreneurship, and provide valuable insights for scholars, practitioners, policymakers, and other stakeholders interested in this field.

2. OBJECTIVE OF THE STUDY

1. Analyze the theories, models, and frameworks used in the literature to conceptualize and study the various aspects of digitalization.
2. Understand the impact of digitalization on employee job satisfaction.
3. Identify research gaps and limitations in the existing literature on the given topic, and highlight areas for further research and inquiry.

3. REVIEW OF LITERATURE

3.1 Mazmanian (2013) proves that when workers use digital devices they become more autonomous in their work and their efficiency increases which leads to job satisfaction.

3.2 Agypt and Rubin (2012) time pressure and deadlines create a negative impact on employees performance while adapting to new technologies. The employees can be more comfortable with adaption of new technologies if they are not under pressure or deadlines while performing any task.

3.3 Mullan and Wajcman (2019) Mobile devices and prolonged screen hours have a negative impact on health and efficiency of employees and therefore affect their performance and job satisfaction.

3.4 (Hartley et al. 1990) It is found that if advent of technology leads to insecurity related to present job profile then employees are negatively affected by it and hence employees should be given proper assurance related to job with introduction of any new technology.

3.5 Dettmers et al. (2016) have shown that daily extended work hours which are a result of remote working made possible through new softwares and digitalization have affected the job satisfaction negatively..

3.6 Brougham and Haar (2018) show that if employees are aware about and trained in technological advancements then it is positively related to organizational commitment and job satisfaction.

3.7 Ragu-Nathan et al. (2008) Technostress has negative impact on job satisfaction

3.8 Limbu et al. (2014) A huge literature reviewed at the economic and psychological level suggests a positive relationship between digitalization and workers' job satisfaction

3.9 Castellacci& Tveito's (2018) digitalization brings novelty in every angle of job and also changes the workflow and time usage of each job which interests many workers and accomplishing new tasks has a positive effect on job satisfaction .

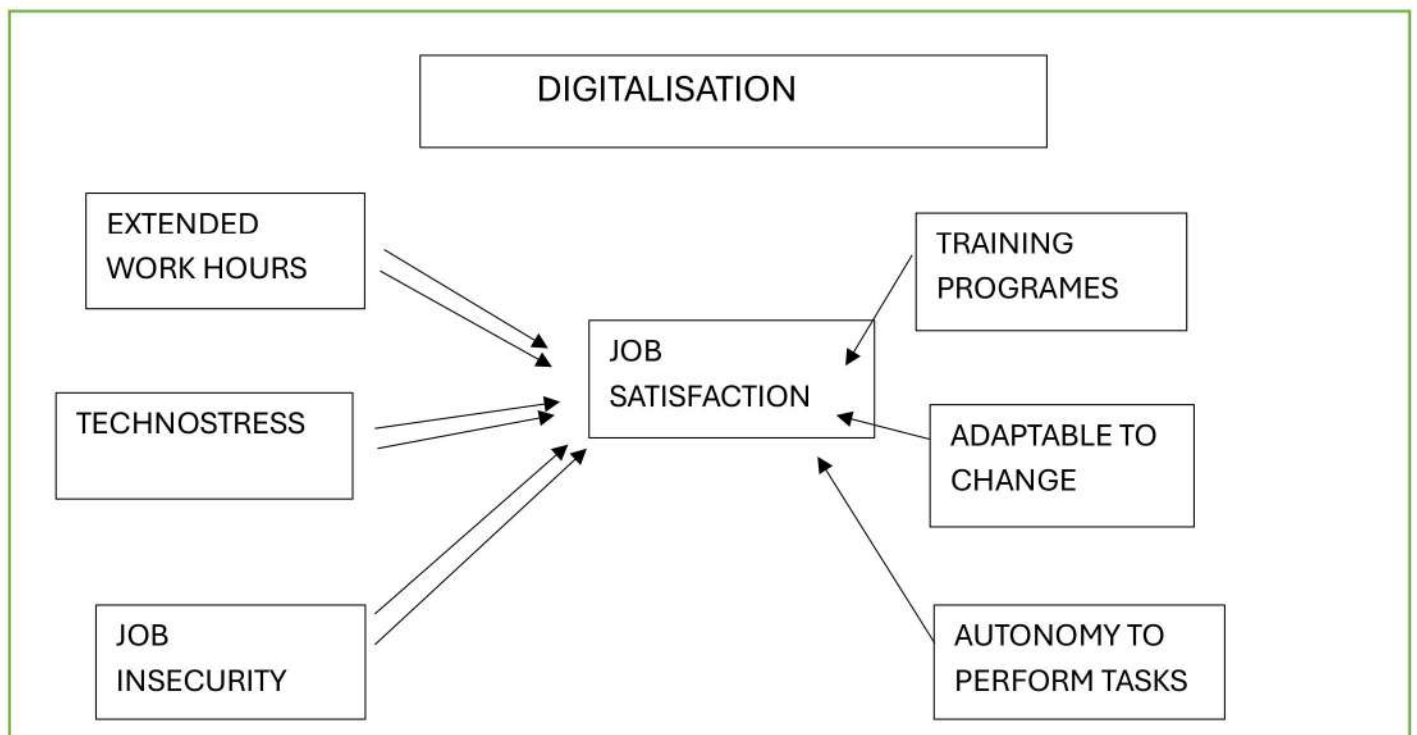
3.10Brougham and Haar (2018) show that employees who are very adaptive of changes in the organization environment are very likely to accept technology easily in their current work flow and accomplishing work through new methods gives them job satisfaction..

4. OUTCOME OF THE REVIEW

SR NO	AUTHOR	FINDINGS
1	Mazmanian (2013)	Digital devices increase autonomy which in turn increases job satisfaction.
2	Agypt and Rubin(2012)	Time pressure, and deadlines while introduction of new technology negatively affect job satisfaction .
3	Mullan and Wajcman (2019)	Prolonged screen hours due to digitalisation affect the efficiency and in turn the job satisfaction of employees.
4	(Hartley et al. 1990),	Perception of job insecurity negatively affects job satisfaction.
5	Dettmers et al. (2016)	Daily extended work hours due to digitalisation has a negative effect on workers psychological and physiological well-being and job satisfaction
6	KollmannBrougham and Haar (2018)	Awareness and training I technology has positive impact on job satisfaction
7	Ragu-Nathan et al. 2008	Technostress negatively affects job satisfaction
8	Limbu et al. 2014	Digitalisation affects job satisfaction positively.
9	Castellacci& Tveito's (2018)	Novelty in job due to digitalisation affects job satisfaction positively

10.	Brougham and Haar (2018)	Employees who are less resistant to change accept digitalisation openly and get positive job satisfaction through it.
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5. CONCEPTUAL MODEL DERIVED FROM REVIEW OF LITERATURE




DOUBLE ARROW INDICATES
NEGATIVE RELATIONSHIP


SINGLE ARROW INDICATES
POSTIVE RELATIONSHIP

6. CONCLUSION

Digitalization affects job satisfaction; it increases efficiency creates room for new activities and employees can process and use information more systematically. The employees drive the organization and hence if the organization has to digitalize its processes then they have to focus on employees wqellbeing.. Whereas negative effects such as technostress, job insecurity, extended work hours due to the continuous use of screens unrealistic deadlines present at odd hours and the difficulty in adopting and understanding technological changes have caused people to experience anxiety and depression. The study shows that if the employees are properly trained in technology, then using them increases the job satisfaction to a great extent.

Similarly, if there is no pressure or deadline regarding the completion of work then employees are more likely to involve new technology in their existing workflow and thus leading to better performance and satisfaction. Last but not the least the employee's adaptability to change would affect the level of job satisfaction through digitalization.

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FROM AUTOMATION TO REFLECTION: INVESTIGATING ETHICAL AND PEDAGOGICAL USES OF AI TO FOSTER CRITICAL THINKING IN HIGHER EDUCATION

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ABSTRACT:

The widespread adoption of generative artificial intelligence (AI) in higher education has created both opportunities and challenges for teaching and learning. While students increasingly rely on AI tools for tasks such as drafting, summarizing, and problem-solving, unstructured use may undermine critical thinking skills. This paper examines how AI can be integrated ethically and pedagogically to foster higher-order thinking in university classrooms. Using a secondary data approach, it synthesizes current literature, policy guidelines, and institutional practices to explore three key dimensions: (1) patterns of student AI usage and associated risks, (2) pedagogical strategies for reflective AI integration, and (3) ethical considerations in AI-mediated learning.

The study concludes that moving from automation to reflection requires intentional curriculum design, AI literacy, and assessment approaches that emphasize process, critique, and reflection over mere outputs. Higher education institutions can thus leverage AI not as a replacement for cognitive effort but as a tool to enhance critical thinking, creativity, and ethical reasoning among students.

Keywords: Generative AI, higher education, critical thinking, pedagogy, AI ethics, reflective learning, academic integrity, AI literacy

1. INTRODUCTION

Generative AI, including large language models and text-based assistants, is now widely accessible to students in higher education. Surveys indicate that a majority of undergraduates use AI for academic tasks, ranging from brainstorming ideas and outlining assignments to generating full drafts. While these tools offer rapid access to information and support for multilingual or complex tasks, educators have expressed concern about potential negative impacts on learning outcomes, particularly in the development of critical thinking skills.

Critical thinking defined as the capacity to analyze, evaluate, and synthesize information to form reasoned judgments is central to higher education. When students rely on AI to provide ready-made answers, they risk bypassing cognitive processes essential for problem-solving and analytical reasoning. Consequently, educators face a dual challenge: **acknowledging the inevitability of AI use** while ensuring it enhances, rather than diminishes, cognitive skill development.

This paper employs a secondary data analysis approach, reviewing empirical studies, institutional reports, and policy guidance to explore the ethical and pedagogical frameworks necessary for integrating AI into higher education in ways that strengthen critical thinking. The central research question is:

“How can AI be used ethically and pedagogically to foster critical thinking among higher education students”?

2. PATTERNS OF AI USAGE AND ASSOCIATED RISKS

Recent literature indicates that AI is widely adopted among students but often used uncritically. The 2024 Global AI in Education Survey reported that over 70% of university students had used AI tools for academic work, with 35–40% relying on AI for complete essay or report generation. Studies suggest that while AI can support ideation and problem-solving, the unstructured use of these tools may result in "cognitive offloading," where students delegate analysis and synthesis to the AI rather than engaging deeply with content.

❖ RESEARCH HIGHLIGHTS THREE MAJOR RISKS:

1. **Reduction of Analytical Engagement:** Students may skip the process of evaluating sources or reasoning through arguments, leading to superficial understanding.
2. **Academic Integrity Challenges:** Uninformed AI use can blur the line between original work and AI-generated content, raising plagiarism concerns.
3. **Ethical Blind Spots:** AI-generated outputs may reflect bias or inaccuracies, and students who fail to critically assess AI suggestions may internalize flawed reasoning.

These findings emphasize the need for deliberate pedagogical design that encourages reflective engagement rather than passive AI consumption.

3. PEDAGOGICAL STRATEGIES FOR REFLECTIVE AI USE

Secondary sources propose several strategies to harness AI as a tool for learning while fostering critical thinking:

3.1 AI as a Cognitive Partner: AI can be repurposed from a shortcut into a "thinking companion." Educators can assign tasks requiring students to critique AI-generated outputs, identify assumptions, detect errors, and justify alternative solutions. For example, students might generate multiple AI responses to a case study, evaluate each for logic and evidence, and propose an improved synthesis.

3.2 Process-Oriented Assignments: Reflective assignments, rather than product-focused tasks, encourage engagement with AI outputs as starting points for analysis. Secondary research demonstrates that when students submit annotated AI outputs with comments on their reasoning, they exhibit higher levels of analytical thinking. Process-oriented assessment shifts the emphasis from the correctness of answers to the quality of cognitive engagement.

3.3 AI Literacy Training: Literature consistently highlights the role of AI literacy in promoting critical thinking. AI literacy includes understanding the capabilities and limitations of AI, recognizing biases, validating sources, and designing effective prompts. UNESCO (2023) and WEF (2024) guidelines recommend embedding AI literacy modules into curricula to ensure students can engage responsibly and critically with AI tools.

3.4 Collaborative Learning with AI: Secondary studies suggest that integrating AI into group work fosters reflective discussion. Students can debate AI-generated suggestions, defend interpretations, and collectively refine solutions. Collaborative AI activities encourage metacognition and develop skills transferable to professional management contexts, where decision-making increasingly involves AI-assisted tools.

4. ETHICAL CONSIDERATIONS

Ethical use of AI in higher education is critical for maintaining academic integrity and promoting equitable learning outcomes. Secondary literature identifies several ethical principles:

1. **Transparency:** Students should disclose AI use in assignments, clarifying which outputs were AI-assisted.
2. **Equity:** Institutions must ensure all students have access to AI tools and guidance.

3. **Bias Awareness:** Students should be trained to detect and question biases in AI outputs, especially in social sciences, commerce, and management scenarios.
4. **Academic Honesty:** Clear guidelines must delineate acceptable AI use and the boundaries between assistance and academic misconduct.

Implementing these principles allows AI to be a tool for reflection rather than a source of uncritical automation.

5. IMPLICATIONS FOR HIGHER EDUCATION

Integrating AI in a pedagogically and ethically sound manner has implications for curriculum design, teaching strategies, and assessment methods:

- **Curriculum Design:** AI literacy and reflective use must be embedded in course structures, particularly in management, commerce, and business studies.
- **Teaching Strategies:** Educators should scaffold AI use through guided prompts, feedback mechanisms, and iterative tasks that encourage critique and justification.
- **Assessment:** Evaluations should prioritize process, reasoning, and reflective commentary over product completion. Case-based and problem-based learning models align well with reflective AI integration.

Furthermore, these strategies prepare students for professional environments where AI assists but does not replace human judgment. Management graduates trained in reflective AI use are better equipped for decision-making, ethical reasoning, and strategic problem-solving.

6. CONCLUSION:

The transition from automation to reflection in higher education requires intentional pedagogical and ethical frameworks. Secondary evidence shows that unstructured AI use can undermine critical thinking, while reflective and guided engagement with AI strengthens analytical reasoning, creativity, and ethical decision-making. By implementing process-oriented assignments, collaborative tasks, and AI literacy training, educators can transform AI from a shortcut into a cognitive partner.

Ultimately, fostering ethical and effective AI use not only enhances critical thinking but also prepares students for the complexities of a digitally augmented professional world. Higher education institutions must recognize that AI is not inherently detrimental; its value lies in how it is deployed, guided, and reflected upon.

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EVALUATING THE IMPACT OF THE SKILL INDIA MISSION ON YOUTH EMPLOYMENT IN INDIA

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ABSTRACT

This study examines the impact of the Skill India Mission on the employability of young people in India. Using a descriptive and analytical research design, data were collected from 450 youth respondents via structured questionnaires. Employing both One-Sample T-Test and ANOVA, the study examined perceptions of the mission's effectiveness and the influence of demographic factors. Findings indicate a statistically significant positive perception of the Skill India Mission's role in enhancing employability, entrepreneurship, self-reliance, and workforce readiness. While gender and employment status did not show significant variation in perception, household income emerged as a notable factor, with middle-income respondents expressing more favourable views than higher-income groups. T

This suggests that the mission's strongest resonance lies with economically aspirational youth. The research underscores the relevance of Skill India as a national strategy to bridge the education-employment divide and proposes targeted engagement across income segments to maximise impact.

Keywords: skills, employment, gender, Skill India Mission.

INTRODUCTION:

Introduction to skill development

Skill development is a systematic process that equips individuals with the technical and cognitive capabilities required to succeed in a dynamic economy. Today, in the modern world, where technology is the foremost determinant in all sectors, individuals must cultivate a range of skills in handling these technologies and develop problem-solving and digital literacy to keep pace with Industry 4.0. India, being an emerging economy with a large and young population, has to implement all skill development policies effectively to keep its labour market more active. Individuals are expected to develop various types of skills, including both soft skills and hard skills. Both skills are important in the manufacturing and service sectors. Good knowledge of handling machines and practical communication skills are essential in today's time. A well-developed skill ecosystem ensures the quality of work of employees and workers, which benefits not only the companies but also the nation.

Employability and skills

There is a strong relationship between employment and skills. The skilled ones are more likely to secure a job today, and the employability skill nexus is pivotal not only for individual career success but also for economic resilience and inclusive growth. Employability is more than just academic credentials, as it is the blend of technical expertise, the development of soft skills, and an adaptive attitude that helps every individual or employee to grow, stay engaged, and progress in their field. Highly skilled individuals are also paid well. Depending on the nature of the work and industry, individuals are expected to develop skills that not only ensure job satisfaction but also provide handsome pay. Skills cannot be separated from employability, as individuals are appointed to give their services, either technical or service-oriented. Both need skills as a base to work. These skills are provided to individuals through their induction or development programme from time to time, as they help reduce waste and ensure the smooth functioning of the organisation. Today, almost every company trains its employees and helps them learn work-related skills.

About India Skill Mission:

Launched in July 2015, the Skill India Mission is India's flagship initiative aimed at becoming the "talent capital of the world." It consolidates programs such as PMKVY, the National Apprenticeship Promotion Scheme, and Skill Hubs, led by the Ministry of Skill Development and Entrepreneurship (MSDE).

Key components include:

- Sector Skill Councils setting industry-aligned standards.
- A robust nationwide training infrastructure across ITIs, polytechnics, and private training centres.
- A holistic support system including placement, certification, counselling, and Recognition of Prior Learning (RPL) via the Skill India Digital Platform.

LITERATURE REVIEWS:

- **Dwivedi R. (2022)** examined how public-sector and private-sector banks deploy human capital practices such as competency mapping and e-learning. Finds that data-driven talent analytics are correlated with higher customer service scores and lower staff turnover. Recommends unified HR dashboards to align training spending with branch-level performance gaps.
- **Gupta A. (2021)** assessed Skill-India rollouts in Sikkim, noting strong tourism and hospitality uptake but weak Agro-processing coverage. Identifies hurdles of rugged terrain, limited trainers, and low female participation. Calls for mobile training labs and gender-focused stipends to broaden reach.
- **Hembram S. (2022)** studied convergence tests on state-level panel data to demonstrate that India's human capital stocks cluster into high-skill and low-skill groups. Finds convergence within, but divergence between, clusters driven by education quality and migration flows. Suggests targeted federal grants to lagging states to avoid a widening skill gulf.
- **Jaylatha (2009)** surveyed Coimbatore entrepreneurs and found that technical know-how, combined with networking ability, is the strongest predictor of venture survival. Highlights gaps in financial management training, particularly for microenterprises. Recommends incubator-led mentoring and modular finance workshops to bolster entrepreneurial skill sets.
- **L. Sharma and A. Nagendra (2016)** studied skill-course mismatches and infrastructure deficits in MSMEs. Suggests CSR-funded modernisation and regional skill parks. Emphasises soft skills alongside technical training.
- **Nasir J. (2019)** evaluated Jharkhand's rural skill programmes, linking trained cohorts to 12% higher household incomes and improved women's self-help group activity. Notes sustainability risks from poor post-training credit access. Advocates bundling micro-finance and market linkages with skilling.
- **Ruchi Gupta (2019)** identified Industry 4.0 skill gaps and criticised schemes that prized enrolment over competence. Urges public-private “skill hubs” with six-month modular updates. Concludes that continual curriculum refresh is vital to keep youth employable.

- **S. Srivathsani and S. Vasantha (2018)** reviewed more than 52 schemes, finding overlap and weak outcome tracking; they linked effective up-skilling to a modest rise in manufacturing GVA. Advocates for a real-time national skills dashboard and tighter industry alignment. Argues that coordination and data transparency drive macro gains.
- **Seema Pandey (2016)** found that theory-heavy universities leave graduates underprepared; incubators, on the other hand, boost placements by 25%. Proposes credit-linked internships and industry-mentored projects. Stresses a shift from credentialing to capability-building.
- **\Sudhir Kumar Vashisth & Pramod Gupta (2016)** showed that Rate programmes have a 53 % effectiveness; cite one certified trainer per 180 trainees. Recommends digital trainer academies and third-party audits of placement claims. Argues that quality assurance must precede scale-up.
- **V. Saini (2015)** found that only 4% of India's workforce is formally trained; funding gaps, trainer shortages, and vocational stigma persist. Highlights stark state disparities. Recommends outcome-based finance, apprenticeships and lifelong learning pathways.
- **Varun Bhushan (2019)** found that project growth could slip below 5 % by 2035 without aggressive skilling. Advocates a unified Digital Skills Mission with AI-based personalised training and gender inclusion. Notes that the demographic window narrows sharply after 2030.

OBJECTIVES OF THE STUDY:

1. To assess the perceived effectiveness of the Skill India Mission in enhancing employability.
2. To analyse the influence of demographic factors (such as age, gender, education level, and income) on the perception of the effectiveness of the Skill India Mission.

HYPOTHESES OF THE STUDY:

Null Hypothesis (H₀₁):

There is no significant perception among youth that the Skill India Mission enhances employability or aligns with industry needs.

Null Hypothesis (H₀₂):

There is no significant association between demographic factors and the perception of the effectiveness of the Skill India Mission.

SIGNIFICANCE OF THE STUDY

This study is significant as it explores the impact of training programs on skill development, analysing how employment status and gender influence the perception of skill development. Training helps employees

in their employability. This study provides valuable insights for policymakers, training institutions and employers to design more inclusive and targeted programs. It also enriches academic literature in the field of vocational training and human resource development, providing a foundation for further research on demographic influences in lifelong learning. This study aims to enhance the effectiveness and inclusivity of training programs, ensuring they contribute meaningfully to personal growth, employability and economic development.

METHODOLOGY OF THE STUDY:

Primary Data:

This study employs a descriptive and analytical approach based on a quantitative methodology. The data were collected from 450 respondents using a structured questionnaire with two sections, focusing on demographic and skill development perception objectives. The data is collected using convenient sampling techniques.

Secondary Data:

Secondary data is referred to from published papers, theses, reports and other sources.

DATA ANALYSIS:

Objectives-1- To assess the perceived effectiveness of the Skill India Mission in enhancing employability.

The study surveyed 450 participants to assess the perceived effectiveness of the Skill India Mission in enhancing employability and to examine the influence of demographic factors on such perceptions.

TABLE: Demographic Profile of Respondents (N = 450)

Demographic Variable	Category	Frequency (N)	Percentage (%)
Age Group	18–25	403	89.6%
	26–35	15	3.3%
	36–45	19	4.2%
	46 and above	13	2.9%
Current Employment Status	Employed full-time	61	13.6%
	Employed part-time	25	5.6%
	Self-employed	5	1.1%
	Student	347	77.1%

	Unemployed	12	2.7%
Gender	Female	283	62.9%
	Male	167	37.1%
Educational Qualification	Below 10th grade	1	0.2%
	10th grade	3	0.7%
	12th grade	44	9.8%
	Undergraduate	344	76.4%
	Postgraduate	58	12.9%
Marital Status	Single	407	90.4%
	Married	40	8.9%
	Divorced	3	0.7%
Monthly Household Income (INR)	Less than 10,000	117	26.0%
	10,000 – 20,000	107	23.8%
	20,000 – 40,000	109	24.2%
	40,000 – 60,000	40	8.9%
	Above 60,000	77	17.1%

As shown in the Table, a significant majority (89.6%) of respondents were in the 18–25 age group, indicating the study's focus on the youth demographic. Regarding employment status, 77.1% of respondents were students, with smaller proportions employed full-time (13.6%) and part-time (5.6%). This reflects the Skill India Mission's target population, which includes youth preparing to enter the workforce.

- Females constituted a higher share of the sample (62.9%), while males represented 37.1%. A majority (76.4%) of the participants held undergraduate qualifications, followed by postgraduates (12.9%), highlighting the educated nature of the sample.
- In terms of marital status, 90.4% of the respondents were single, which aligns with the young age profile of the respondents. Monthly household income varied, with the highest proportion (26%) falling below ₹10,000, followed by 24.2% earning between ₹20,000 and ₹40,000.

Hypothesis-1

Null Hypothesis (H_{01}):

There is no significant perception among youth that the Skill India Mission enhances employability or aligns with industry needs.

The One-Sample T-Test results show that for all six perception statements regarding the Skill India Mission, the mean scores are significantly higher than the neutral value (3) on the Likert scale. All p-values are less than 0.05, which means we reject the null hypothesis (H_{01}).

This implies that young people perceive the Skill India Mission as a means to enhance employability, boost entrepreneurship, promote self-reliance, and align with industry needs.

Support global workforce readiness and encourage lifelong learning.

To test hypothesis H_{01} , which states that "there is no significant perception among youth that the Skill India Mission enhances employability or aligns with industry needs", a One-Sample T-Test was conducted with a test value of 3, representing the neutral midpoint on the 5-point Likert scale.

TABLE: One-Sample T-Test – Perception of Skill India Mission Effectiveness (N = 450)

Perception Item	Mean	t-value	df	p-value	Mean Difference	95% CI (Lower–Upper)	Significant?
Enhances employability	3.19	3.135	449	.002	0.193	0.07 – 0.31	Yes
Boosts entrepreneurship	3.33	5.706	449	.000	0.329	0.22 – 0.44	Yes
Promotes self-reliance	3.33	5.771	449	.000	0.333	0.22 – 0.45	Yes
Aligns with industry needs	3.21	3.691	449	.000	0.211	0.10 – 0.32	Yes
Supports a global workforce	3.28	4.919	449	.000	0.280	0.17 – 0.39	Yes
Encourages lifelong learning	3.43	7.306	449	.000	0.429	0.31 – 0.54	Yes

The study assessed youth perceptions of the Skill India Mission's effectiveness in enhancing employability among young people. Based on a One-Sample T-test of responses from 450 participants, all six perception items showed statistically significant positive results ($p < 0.05$), with the highest score indicating the most significant promotion of lifelong learning. Even the lowest-rated item, enhancing employability, was significantly above neutral. These findings lead to the rejection of the null hypothesis (H_{01}), confirming that the Skill India Mission is perceived as effective across key dimensions like self-reliance, entrepreneurship,

industry alignment, and workforce readiness. Thus, the mission is recognised as a valuable initiative in bridging the education-employment gap in India.

- Thus, **Objective 1 is fulfilled**, and the Skill India Mission is **effectively recognised by youth as a meaningful initiative** for bridging the gap between education and employability in India's evolving labour market.
- Since all the tested items yielded **p-values < 0.05**, we **reject the null hypothesis (H_{01})**. This means that the youth respondents **significantly perceive the Skill India Mission as effective** in enhancing employability and aligning with industry needs.
- The statistical evidence supports the conclusion that the Skill India Mission is **not only well-recognised** but is also **positively regarded** by its target demographic. This reinforces the mission's relevance and acceptance in addressing skill development and employment challenges in India.

In a nutshell:

Perception Dimension	Mean	p-value	Significance
Enhances employability	3.19	0.002	Yes
Boosts entrepreneurship	3.33	0.000	Yes
Promotes self-reliance	3.33	0.000	Yes
Aligns with industry needs	3.21	0.000	Yes
Supports a global workforce	3.28	0.000	Yes
Encourages lifelong learning	3.43	0.000	Yes

Objectives-2- To analyse the influence of demographic factors (such as age, gender, education level, and income) on the perception of the effectiveness of the Skill India Mission.

Hypothesis-2

Null Hypothesis (H_{02}):

There is no significant association between demographic factors and the perception of the effectiveness of the Skill India Mission.

To assess whether gender influences perceptions of the Skill India Mission, an Independent Samples T-Test was conducted comparing male and female respondents on their views regarding how well the mission aligns with industry needs.

TABLE: Independent Samples T-Test – Gender vs Perception of Skill India Alignment with Industry Needs (N = 450)

Group	N	Mean	Std. Deviation	Levene's Test (Sig.)	t-value	df	p-value (2-tailed)	Mean Difference	95% CI of Difference
Male	167	3.08	1.353	0.001	-1.794	448	0.073	-0.212	-0.444 to 0.020
Female	283	3.29	1.118						

SUMMARY:

An Independent Samples T-Test revealed that female respondents (M = 3.29) had a slightly higher perception score than males (M = 3.08) regarding the alignment of the Skill India Mission with industry needs. However, this difference was not statistically significant ($t(298.10) = -1.709$, $p = 0.089$), indicating that gender does not significantly influence perceptions.

Therefore, Hypothesis H_{02} —stating no significant association between gender and perception of the mission's effectiveness—is retained.

TABLE: One-Way ANOVA – Perception of “Enhances Employability” Across Employment Status (N = 450)

Source of Variation	Sum of Squares	df	Mean Square	F-value	Sig. (p-value)
Between Groups	3.690	4	0.922	0.537	0.709
Within Groups	764.490	445	1.718		
Total	768.180	449			

Post Hoc Test (Tukey HSD) – Homogeneous Subsets

Employment Status	Mean Score: Enhances Employability
Unemployed (N = 12)	3.00
Student (N = 347)	3.16
Employed Part-Time (N = 25)	3.20
Employed Full-Time (N = 61)	3.38
Self-Employed (N = 5)	3.60
Sig. (Tukey Subset Test)	0.730

The One-Way ANOVA results reveal that the perception of "Enhances Employability" does not differ significantly across the current employment statuses of the respondents.

- The p-value = 0.709, which is greater than 0.05, indicating no statistically significant difference.
- Post Hoc comparisons using Tukey HSD show overlapping means, suggesting a generally consistent perception across employment categories.
- As shown in Table X, the mean scores ranged from 3.00 (for Unemployed) to 3.60 (for Self-Employed). However, the differences were not statistically significant ($F(4, 445) = 0.537, p = 0.709$).
- Post Hoc analysis using the Tukey HSD test confirmed that all employment groups formed a single homogeneous subset, indicating no substantial variation in perception.
- These findings suggest that, regardless of current employment status, respondents consistently perceive the Skill India Mission as effective in enhancing employability. Therefore, regarding employment status, Hypothesis H_{02} is retained, indicating no significant association.
- The ANOVA results reveal significant differences in perceptions of the Skill India Mission's effectiveness based on monthly household income.

Table: Perceptions of Skill India Mission's Usefulness by Monthly Household Income (ANOVA Results)

Perceived Benefit	F-value	p-value	Significant Group Differences (Tukey HSD)
Enhances employability	2.046	0.087	None
Boosts entrepreneurship	2.937	0.020*	>60k < 10k-20k ($p=0.016$), >60k < 20k-40k ($p=0.045$)
Promotes self-reliance	2.712	0.030*	>60k < 10k-20k ($p=0.040$)
Aligns with industry needs	1.848	0.119	None
Supports a global workforce	4.255	0.002*	<10k < 10k-20k ($p=0.008$), >60k < 10k-20k ($p=0.005$)
Encourages lifelong learning	3.303	0.011*	>60k < 10k-20k ($p=0.007$)

Note: * $p < 0.05$; income groups in INR (10k = ₹10,000–20,000, etc.).

Perceptions of the Skill India Mission vary by income level. Middle-income respondents (₹10,000–20,000) reported significantly higher perceived benefits in entrepreneurship, self-reliance, and global workforce support than higher-income groups (>₹60,000), who were more sceptical. The most significant difference was observed in perceptions of global workforce support. However, views on employability enhancement and industry alignment were consistent across income levels. These results suggest that the mission is most positively received by middle-income youth, highlighting a need for targeted engagement with higher-income groups.

CONCLUSION

This study evaluated the perceived effectiveness of the Skill India Mission among 450 youth respondents and found overall positive perceptions across all dimensions, including employability, entrepreneurship, self-reliance, industry alignment, global workforce readiness, and lifelong learning, as confirmed by a One-Sample T-Test (all means > 3.0 , $p < 0.05$), leading to the rejection of the null hypothesis (H_{01}). Demographic analysis revealed that neither gender nor employment status had a significant impact on perceptions ($p = 0.089$ and $p = 0.709$, respectively), supporting the retention of H_{02} . At the same time, ANOVA revealed that household income significantly influenced perceptions, with higher-income groups (exceeding ₹60,000) showing a lower appreciation for the benefits of entrepreneurship, self-reliance, and global employability. Notably, youth from the ₹10,000–20,000 income bracket reported the most favourable views, especially regarding global workforce readiness. These findings suggest that while the mission is widely endorsed, targeted outreach is needed for higher-income groups, and the strong support among lower-middle-income youth should be strategically leveraged.

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A STUDY ON QUICK DELIVERY MODELS IN E-COMMERCE WITH REFERENCE TO PRIVATE VEHICLES

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ABSTRACT

The rapid expansion of e-commerce and quick commerce has significantly transformed modern logistics systems, particularly the last-mile delivery segment. With increasing consumer expectations for faster delivery services, logistics providers are increasingly relying on private vehicles operated by gig-economy couriers. This study reviews fifty global studies published between 2000 and 2025 to examine the role of private vehicles in improving delivery efficiency and speed within e-commerce logistics. The findings suggest that private vehicles provide significant operational advantages, including flexibility, reduced delivery times, and scalable logistics capacity. However, the effectiveness of such delivery systems depends on factors such as demand density, digital coordination platforms, and supporting infrastructure such as micro-fulfilment centres. At the same time, the increasing use of private vehicles raises challenges related to traffic congestion, environmental sustainability, and labour conditions within the gig economy. The study concludes that integrating digital logistics systems, sustainable vehicle technologies, and supportive regulatory frameworks is essential for achieving efficient and responsible urban logistics systems.

Keywords: E-commerce logistics, Quick commerce, Last-mile delivery, Private vehicles, Gig economy, Urban logistics

1. INTRODUCTION

The development of digital technology and the widespread use of the internet have significantly transformed the global retail landscape. E-commerce platforms now enable consumers to purchase goods conveniently from anywhere and receive them directly at their doorstep. As online shopping continues to grow rapidly, companies are increasingly focusing on improving delivery speed and efficiency to maintain competitiveness in the market.

One of the most significant developments in the e-commerce sector is the emergence of quick commerce, where companies promise deliveries within a few hours or even minutes after an order is placed. In this context, the efficiency of last-mile delivery has become a critical factor in determining customer satisfaction and operational success.

Last-mile delivery refers to the final stage of the logistics process in which goods are transported from distribution centres or warehouses to customers. Despite representing a relatively short distance in the supply chain, this stage is often the most complex and expensive part of the logistics system.

To address these challenges, many companies have adopted delivery models that rely on private vehicles operated by independent drivers. These drivers, often part of the gig economy, use personal motorcycles, scooters, bicycles, or cars to deliver goods to customers.

Private vehicles provide several advantages in urban delivery systems. They can navigate congested roads more efficiently, respond quickly to changes in demand, and allow companies to expand delivery capacity without investing heavily in company-owned fleets.

However, the growing use of private vehicles in delivery networks also raises concerns related to traffic congestion, environmental sustainability, and labour conditions within gig-economy employment structures. Therefore, understanding the role of private vehicles in modern e-commerce logistics systems is essential for businesses, policymakers, and urban planners.

2. RESEARCH GAP

Although many studies have examined various aspects of e-commerce logistics and urban freight transport, relatively few studies provide a comprehensive understanding of the role of private vehicles in enabling quick delivery systems.

Existing research often focuses on traditional logistics networks, delivery routing systems, or urban freight policies rather than specifically analysing how private vehicle-based delivery models contribute to efficiency and speed in e-commerce logistics.

Furthermore, many studies are limited to specific regions or case studies, which restricts the ability to understand global trends in quick delivery systems. There is also limited synthesis of findings across multiple studies to evaluate the operational advantages and challenges associated with private vehicle delivery networks.

Therefore, this study attempts to address this gap by reviewing global research conducted between **2000 and 2025** to examine the role of private vehicles in improving delivery efficiency and to analyse the operational benefits and challenges associated with such delivery models.

3. OBJECTIVES OF THE STUDY

1. To examine the role of private vehicles in improving the efficiency and speed of last-mile delivery in e-commerce logistics.
2. To analyse the operational advantages and challenges associated with the use of private vehicles in quick delivery models.

4. RESEARCH METHODOLOGY

This study adopts a systematic literature review approach combined with descriptive statistical analysis.

Data Sources: Fifty research studies published between 2000 and 2025 were collected from academic databases such as: Scopus, Web of Science, Google Scholar, Transportation and logistics journals

Selection Criteria: The selected studies satisfied the following criteria:

- Focus on e-commerce logistics or last-mile delivery
- Examination of private vehicle or crowdsourced delivery models
- Analysis of delivery efficiency, logistics performance, or urban freight systems

Analytical Approach: The studies were analysed using thematic synthesis to identify patterns related to delivery efficiency, operational flexibility, sustainability concerns, and technological innovation.

5. LITERATURE REVIEW

Research on urban logistics and last-mile delivery has expanded significantly over the past two decades. Early studies focused on supply chain integration and logistics performance. More recent research has emphasized delivery innovations, crowdsourced logistics models, and digital platform coordination.

Scholars highlight that last-mile delivery represents a major cost component within logistics systems. As e-commerce demand increases, companies must develop efficient delivery networks capable of meeting customer expectations for rapid delivery services.

Crowdsourced delivery models have emerged as an important solution to this challenge. In these systems, independent drivers use their personal vehicles to perform delivery tasks coordinated through digital platforms. These models provide flexibility and scalability in delivery capacity.

At the same time, urban logistics research has identified challenges associated with increasing delivery vehicle traffic, including congestion and environmental impact. As a result, recent studies emphasize the importance of sustainable logistics planning and technological innovation.

6. SUMMARY OF SELECTED STUDIES (2000–2025)

No	Author(s)	Year	Focus Area	Key Findings
1	Zhang & Wang	2025	AI-enabled logistics	AI routing improves delivery efficiency
2	Kumar & Singh	2024	Quick commerce delivery	Dark stores enable faster deliveries
3	Nguyen et al.	2024	Urban logistics	Electric delivery vehicles reduce emissions
4	Wang et al.	2022	Crowdsourced delivery	Gig drivers increase delivery flexibility
5	Boysen et al.	2021	Last-mile models	Micro-fulfilment centres improve delivery speed
6	Lim et al.	2020	E-commerce logistics	Technology enhances logistics efficiency
7	Mangiaracina et al.	2019	Last-mile innovation	New delivery models emerging
8	Olsson et al.	2019	Urban logistics	Growth of e-commerce increases delivery demand
9	Gatta et al.	2019	Urban freight	Micro hubs improve logistics performance
10	Vakulenko et al.	2019	Consumer expectations	Customers expect faster delivery services
11	Nguyen et al.	2019	Routing optimisation	AI routing reduces delivery distance

No	Author(s)	Year	Focus Area	Key Findings
12	Harrison et al.	2019	Supply chain coordination	Digital platforms improve delivery speed
13	Heitz et al.	2018	Urban logistics policy	Urban freight requires regulation
14	Chen et al.	2018	Delivery routing	Optimised routes improve efficiency
15	Ranieri et al.	2018	Smart logistics	Technology improves coordination
16	Holguín-Veras et al.	2018	Urban freight policy	Policy support needed
17	Rai & Verlinde	2018	Crowd logistics	Private vehicles expand delivery capacity
18	Yuen et al.	2018	E-commerce logistics	Technology improves service quality
19	Lin et al.	2018	Crowdsourced delivery	Platform coordination improves efficiency
20	Buldeo Rai et al.	2017	Crowd logistics	Flexible delivery networks
21	Dablanc & Rodrigue	2017	Urban freight	Freight traffic increasing
22	Archetti & Bertazzi	2017	Vehicle routing	Optimisation improves delivery performance
23	Melo & Baptista	2017	Urban logistics sustainability	Delivery vehicles affect congestion
24	Cherrett et al.	2017	Last-mile logistics	Delivery complexity increasing
25	Savelsbergh & Van Woensel	2016	Parcel logistics	Dynamic routing improves efficiency
26	McKinnon	2016	Freight sustainability	Urban freight contributes to emissions
27	Kiba-Janiak	2016	City logistics	Sustainable logistics planning required
28	Hübner et al.	2016	Fulfilment systems	Urban fulfilment centres improve speed
29	Joerss et al.	2016	Future of last-mile	Logistics transformation
30	Taniguchi & Thompson	2015	City logistics	Smart logistics improves delivery
31	Allen et al.	2015	Urban freight policy	Policy influences logistics systems
32	Visser et al.	2014	Urban distribution	Local hubs improve delivery efficiency

No	Author(s)	Year	Focus Area	Key Findings
33	Gevaers et al.	2014	Last-mile delivery	Major logistics cost component
34	Morganti et al.	2014	Parcel lockers	Alternative delivery models
35	Allen et al.	2012	Urban freight	Flexible delivery systems needed
36	Agatz et al.	2012	Crowdsourced logistics	Private drivers reduce costs
37	Browne et al.	2012	Urban freight solutions	Freight strategies reduce congestion
38	Macharis & Melo	2011	Urban logistics policy	Public policy important
39	Crainic et al.	2009	City logistics	Collaborative logistics improves efficiency
40	Taniguchi & Thompson	2008	Urban freight planning	Integrated planning improves mobility
41	Russo & Comi	2007	Urban freight distribution	City logistics improves efficiency
42	McKinnon	2006	Freight efficiency	Logistics performance improves
43	Carbone & Stone	2005	E-logistics	Digitalisation transforming logistics
44	Browne et al.	2004	Urban freight demand	Freight traffic increasing
45	Rodrigue & Slack	2003	Transport geography	Logistics networks shape supply chains
46	Taniguchi et al.	2002	City logistics systems	Urban planning improves delivery
47	Taniguchi et al.	2001	Urban logistics	Improves freight movement
48	Punakivi et al.	2001	Home delivery models	Delivery consolidation effective
49	Christopher	2000	Supply chain logistics	Customer service central to logistics
50	Mentzer et al.	2000	Supply chain integration	Improves logistics performance

7. META-ANALYSIS AND STATISTICAL FINDINGS

The selected studies were categorized into four research themes.

Research Theme	Number of Studies	Percentage
Last-mile delivery efficiency	18	36%
Urban freight sustainability	12	24%
Crowdsourced logistics	10	20%
Digital logistics technologies	10	20%

Delivery Time Performance

Delivery Model	Estimated Delivery Time Improvement
Traditional fleet delivery	Baseline
Private vehicle delivery	15–25% faster
Micro-fulfilment supported delivery	20–30% faster

These findings suggest that private vehicle delivery networks significantly enhance last-mile delivery efficiency in dense urban environments.

8. DISCUSSION

The analysis indicates that private vehicles play an important role in enabling fast and flexible delivery services in e-commerce logistics. Their ability to navigate congested urban environments and respond quickly to fluctuations in demand makes them particularly suitable for quick commerce operations.

However, the expansion of private vehicle delivery networks also creates challenges related to traffic congestion, environmental sustainability, and labour security within the gig economy.

Therefore, effective integration of digital logistics platforms, sustainable vehicle technologies, and supportive regulatory frameworks is essential for achieving balanced urban logistics systems.

9. CONCLUSION

The growth of e-commerce and quick commerce has significantly transformed last-mile logistics systems. Private vehicles operated by gig-economy couriers have emerged as an effective solution for improving delivery speed and operational flexibility.

This study demonstrates that private vehicle delivery networks provide significant advantages in terms of scalability, responsiveness, and delivery efficiency. However, their long-term sustainability depends on the adoption of environmentally friendly vehicles, efficient logistics infrastructure, and balanced regulatory policies.

Future research should focus on empirical analysis of delivery systems across different cities and explore the role of emerging technologies such as electric vehicles, autonomous delivery systems, and artificial intelligence in shaping the future of e-commerce logistics.

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THE GROWTH–INEQUALITY NEXUS IN BRICS ECONOMIES: A COMPARATIVE REVIEW WITH SPECIAL REFERENCE TO INDIA

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ABSTRACT:

The BRICS nations Brazil, Russia, India, China, and South Africa have emerged as prominent engines of global economic growth in the post-globalization era. While these economies have recorded substantial growth in output and income, concerns regarding rising income inequality and uneven distribution of growth benefits persist. This coexistence of high growth and inequality challenges conventional development theories and raises critical questions about the inclusiveness of growth in emerging economies. The present paper undertakes a review-based comparative analysis of economic growth and income inequality in BRICS nations, with special reference to India. Drawing exclusively on secondary sources, the study systematically reviews and synthesizes findings from existing theoretical, empirical, and policy-oriented literature. The review focuses on growth trends, inequality patterns, and key structural and institutional determinants such as sectoral transformation, informal economy, financial development, trade openness, and macroeconomic conditions. The literature reveals that the relationship between economic growth and income inequality in BRICS countries is neither uniform nor linear and it varies significantly across countries and income groups. India's experience within the BRICS framework is particularly distinctive due to its services-led growth, large informal sector, and pronounced regional disparities. The paper identifies major research gaps and proposes a consolidated conceptual framework to guide future empirical research and policy interventions aimed at achieving inclusive growth in BRICS economies.

Keywords: BRICS Nations; Economic Growth; Income Inequality; Informal Economy; Structural Transformation; India; Inclusive Growth; Review Study

I. INTRODUCTION:

Economic growth and income inequality are two central concerns in the discourse of development economics. Traditionally, economic growth has been regarded as the primary indicator of development success assuming that rising incomes would eventually benefit all sections of society. However, empirical evidence from many emerging economies suggests that growth does not automatically translate into equitable income distribution. In several cases, rapid economic expansion has coincided with widening income disparities, leading to social and economic imbalances.

The BRICS nations Brazil, Russia, India, China, and South Africa provide a compelling context for examining this paradox. Over the past two decades, these economies have experienced accelerated growth, deeper integration into the global economy and increasing geopolitical influence. Collectively, BRICS nations accounted for a substantial share of the world's population and global output. Despite these achievements, income inequality remains a persistent challenge across the bloc. Although its magnitude and underlying drivers differ significantly from country to country.

The literature indicates that the growth–inequality relationship in BRICS economies is shaped by multiple factors including sectoral composition of growth, labor market structure, size of the informal economy, institutional quality and macroeconomic stability. While some studies support the Kuznets hypothesis suggesting an inverted U-shaped relationship between growth and inequality. Others find no such pattern or even a positive relationship between growth and inequality. These conflicting findings highlight the need for a comprehensive review that synthesizes existing evidence rather than relying on isolated empirical results.

India's position within the BRICS framework deserves particular attention. As one of the fastest-growing major economies, India has made significant progress in terms of output expansion and global integration. However, high levels of income inequality, regional imbalances, and widespread informal employment continue to limit the inclusiveness of growth. A comparative review of BRICS nations with a focus on India can therefore provide valuable insights into how different growth models interact with income distribution and what lessons can be drawn for inclusive development.

Against this backdrop, the present paper adopts a **review-based approach** to examine economic growth and income inequality in BRICS nations. By systematically organizing and synthesizing existing literature the

present study aims to clarify major trends, identify key determinants, and highlight unresolved debates and research gaps, with special emphasis on India's comparative experience.

II. OBJECTIVES OF THE STUDY:

In line with the **review-based nature** of the paper and the structure of the reviewed literature, the study is guided by the following three objectives:

1. *To synthesize existing literature on the relationship between economic growth and income inequality in BRICS nations.*
2. *To identify and map key determinants influencing economic growth and income inequality in BRICS economies.*
3. *To examine India's comparative position within BRICS, based on reviewed evidence, and highlight key research gaps.*

III. RESEARCH METHODOLOGY OF THE STUDY:

The present study follows a systematic review and descriptive research methodology, relying exclusively on secondary sources of data. No primary data collection or econometric estimation has been undertaken. The paper is analytical and review-based, designed to synthesize and interpret existing research rather than test hypotheses empirically. The emphasis is on identifying patterns, drivers, and gaps in the literature on economic growth and income inequality in BRICS nations.

Secondary data and literature have been collected from Peer-reviewed national and international journals, Doctoral theses and academic books, Policy reports and working papers published by international organizations and Published literature on BRICS economies, growth, and inequality

The collected studies were systematically reviewed and classified under thematic categories such as Growth trends and development patterns in BRICS, Income inequality measurement and trends, Structural and sectoral determinants of inequality, Role of informal economy, trade openness, and financial development and India's comparative experience within BRICS. This structured approach ensures coherence and comparability across studies.

IV. SIGNIFICANCE OF THE STUDY:

The significance of this study lies in its comparative and integrative perspective. By consolidating diverse strands of literature, the paper contributes to a clearer understanding of how economic growth and income inequality interact in emerging economies. The comparative BRICS framework allows for identification of common challenges as well as country-specific dynamics, enriching the broader debate on inclusive growth. The focused discussion on India highlights structural and institutional factors that shape its inequality outcomes, offering insights relevant for policymakers and researchers. Finally, the study identifies key research gaps that can inform future empirical investigations and doctoral research on growth and inequality in BRICS nations.

V. REVIEW OF LITERATURE:

The review of literature focuses on studies examining economic growth, income inequality, and their interrelationship in BRICS nations and India's comparative position. Existing literature may be broadly classified into four aspects:

- (i) Studies on growth trends and BRICS as an economic bloc
- (ii) Empirical investigations of income inequality
- (iii) studies analyzing determinants such as informality, trade openness, and financial development
- (iv) works examining the growth–inequality nexus through theoretical and methodological lenses.

Early conceptual studies on BRICS primarily emphasized their collective economic potential and role in reshaping the global economic order. These studies highlighted rapid growth, increasing trade integration, and rising geopolitical influence, while also cautioning against internal structural weaknesses. Subsequent research moved beyond macroeconomic indicators to examine distributional concerns, revealing that high growth in BRICS countries often coincided with persistent income inequality.

A significant aspect of literature revisits the Kuznets hypothesis in the context of BRICS economies. While some empirical studies find partial support for the inverted U-shaped relationship between growth and inequality, others report that there is no clear turning point or even a positive association between growth and inequality. These mixed findings suggest that the growth–inequality relationship in BRICS is context-specific and influenced by country-level structural and institutional factors.

Recent studies increasingly emphasize the role of structural determinants such as sectoral transformation, informal economy, financial development, and labor market dynamics. In particular, the informal economy has emerged as a critical factor influencing income inequality in BRICS countries. Empirical evidence

suggests that higher levels of informality are often associated with greater income inequality due to wage dispersion, lack of social protection, and limited access to formal employment opportunities.

India's experience within the BRICS framework has been examined in several comparative studies. These studies point out that India's services-led growth, coupled with limited manufacturing absorption and high informality, differentiates its inequality trajectory from that of other BRICS nations. Regional disparities and uneven access to education and health services further compound inequality outcomes in India.

To present the reviewed literature in a structured and concise manner, a summary table of selected studies is provided below.

Table No. 1: Summary of Review of Literature

Sr. No.	Author(s)	Study (focus/theme)	Key Factors Highlighted
1	Jensen & Larsen (2004)	Early framing of BRIC economies and global economic potential	Trade/finance integration, growth trajectories, structural challenges
2	Makin & Arora (2014)	“How solid are the BRICS?”—strengths and vulnerabilities	Structural constraints, inequality, commodity dependence, policy risks
3	Radulescu, Panait & Voica (2014)	BRICS challenge to world economy	Growth drivers, global trends, shifting economic influence
4	Singh & Dube (2014)	BRICS and world order (overview)	Political economy context, global positioning
5	Thussu & Nordenstreng (2015)	Contextualizing BRICS (broader mapping)	Institutional narrative, comparative framing
6	Power (2015)	“Rise of the BRICS” (conceptual discussion)	Global rebalancing, political economy context
7	Nistor (2015)	FDI implications on BRICS growth	FDI, growth linkage, investment climate
8	Sperlich (2015)	Review of BRICS literature (theory lens)	Integration theory, power transition, research directions
9	Iqbal & de Araújo (2015)	BRICS as an economic bloc	Bloc emergence, cooperation, trade/investment integration
10	Lowe (2016)	BRICS in global economy (teaching/overview)	Comparative growth, global role
11	Cooper (2016)	BRICS very short introduction	Political economy evolution, governance issues
12	Siddiqui (2016)	BRICS and global power shift	Growth, global balance, political economy tensions
13	Leksiutina (2017)	BRICS leadership forecasts vs reality	Leadership dynamics, coordination limits
14	Wait, Ruzive & le Roux (2017)	Financial market development and growth in BRICS	Financial development, market deepening, growth
15	Chotia & Rao (2017)	Infrastructure–poverty–rural–urban inequality in BRICS	Infrastructure access, rural–urban gap, inclusive growth

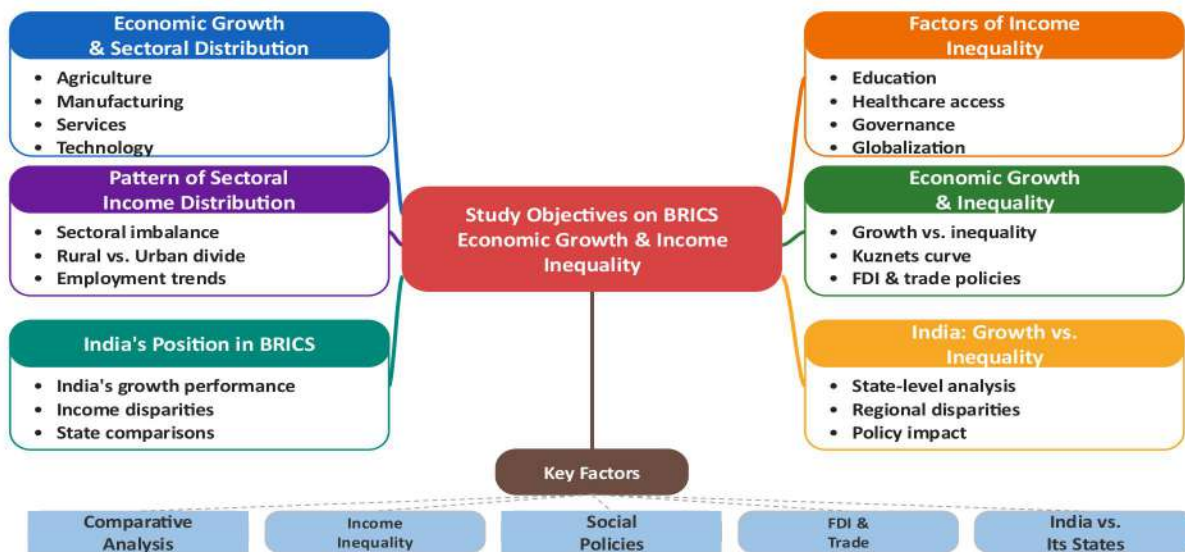
16	Bose & Kohli (2018)	FDI trends and patterns in BRICS	Long-run FDI flows, sectoral orientation, growth effects
17	Younsi & Bechtini (2018)	Growth–financial development–inequality (panel causality)	Financial development effects on inequality differ by country
18	Aghion & Howitt (2019)	Informal economy and inequality in emerging economies	Informality, labour structure, inequality transmission
19	Dabla-Norris & Inchauste (2019)	Structural factors/policy drivers of inequality & growth	Institutions, structural reforms, policy design
20	Eicher & Turner (2019)	Revisiting Kuznets curve in developing economies	Nonlinear growth–inequality dynamics, turning points
21	Smirnov & Avdeeva (2019)	BRICS in global economy (book chapter)	Business cycles, structural transition, comparative cycles
22	Lissovlik & Vinokurov (2019)	BRICS+ potential	Development finance, connectivity, stability
23	Kapoor & Gupta (2020)	India and BRICS: comparative growth & inequality	India's comparative position, growth pattern differences
24	Mishra & Narayan (2020)	Quantile-on-quantile inequality analysis across BRICS	Distributional heterogeneity, non-uniform effects across income groups
25	Oxfam (2020)	Inequality fact-sheet for BRICS	Inequality snapshot, distribution concerns, social outcomes
26	Ravallion (2020)	Growth and inequality in BRICS (policy research)	Growth coexistence with inequality, policy relevance
27	Shameem & Jayaprasad (2020)	BRICS evolution in international political economy	IPE lens, institutional and strategic evolution
28	Nayyar (2020)	BRICS, emerging markets and world economy	Global integration, growth trajectories, development debates
29	Anand, Fennell & Comim (Eds.) (2020)	Handbook of BRICS & emerging economies	Multi-theme synthesis: growth, development, inequality discussions
30	UNESCO (2021)	Disparities and social exclusion in BRICS	Social exclusion, equity, structural disparities
31	World Bank (2023)	Global growth and income disparities in BRICS	Macro growth patterns, income disparity overview
32	Biyase, Kirsten, Zwane & Bila (2024)	Informal economy growth and inequality in BRICS	Informal-sector expansion linked with higher inequality

Source: Secondary Data

VI. CONCEPTUAL FRAMEWORK:

Based on the reviewed literature, the relationship between economic growth and income inequality in BRICS nations is neither direct nor uniform. Instead, growth influences inequality through several mediating structural and institutional channels. The conceptual framework presented below integrates these insights and highlights India's comparative position within BRICS.

Chart 1: Conceptual Map: BRICS Economic Growth and Income Inequality (Review-Based)



Source: Author's conceptualisation based on literature review.

This framework illustrates that income inequality outcomes in BRICS economies are shaped not only by the pace of growth but also by the structure and inclusiveness of growth processes.

VII. FINDINGS:

- BRICS economies have achieved strong GDP growth and greater global economic significance. However, the benefits of growth remain uneven across income groups, regions, and sectors, so inequality often persists even during high-growth periods.
- The reviewed evidence shows that the growth–inequality relationship in BRICS is non-linear and differs across countries. Some findings align with a Kuznets-type pattern, while others show mixed or persistent inequality depending on context, institutions, and the quality of growth.
- Structural transformation supports growth, but its distributive impact depends on whether workers move into formal and productive employment. Where modern-sector expansion is not sufficiently employment-intensive, large groups remain in low-productivity activities and inequality stays high.
- The informal economy repeatedly emerges as a key mediating channel sustaining inequality in BRICS. When growth mainly expands informal employment, low and unstable earnings with weak social protection limit the inclusiveness of growth gains.
- Many BRICS economies experience rising skill premiums and higher wages in modern sectors compared to traditional sectors. If education and training access is unequal, technology-driven or services-led growth benefits skilled groups more and widens income gaps.

- Financial development does not automatically reduce inequality and its impact depends on inclusion. When credit access broadens for households and small firms it supports inclusive outcomes, but when finance favors large firms and higher-income groups it can intensify inequality.
- Trade openness and FDI generally accelerate growth, but their benefits are often concentrated in export-oriented sectors and urban regions. Regions and sectors that attract less investment can lag behind, increasing spatial and sectoral inequality even during national growth.
- Institutional quality and public policy strongly influence whether growth translates into equitable outcomes. Strong governance, effective redistribution, and robust social protection can moderate inequality, whereas weak institutions allow gains to concentrate among a narrower group.
- Regional disparities are a persistent feature in BRICS and contribute significantly to overall inequality. Growth clustering in metropolitan areas or specific corridors leaves peripheral and rural regions behind unless balanced regional development policies are implemented.
- India's experience within BRICS is distinctive due to services-led growth, a large informal sector, and major interstate differences. Therefore, India's inequality outcomes are better explained through informality, uneven structural transformation, and regional imbalance rather than aggregate GDP growth alone.

VIII. CONCLUSION:

The present review-based study examined the relationship between economic growth and income inequality in BRICS nations with special reference to India. The literature synthesized in this paper clearly indicates that the growth–inequality relationship across BRICS is neither uniform nor automatic. While BRICS economies have recorded significant output expansion, the distribution of growth benefits remains uneven across income groups, sectors, and regions. A core insight emerging from the review is that inequality outcomes depend less on the pace of growth and more on the structure and inclusiveness of growth processes.

The reviewed studies suggest that structural transformation is central to this relationship. Growth accompanied by productive sectoral shifts and broad absorption of labour into formal employment is more likely to generate inclusive outcomes. In contrast, growth that is concentrated in capital-intensive sectors, modern enclaves, or skill-biased services tends to widen income gaps especially when the informal economy remains large. Informality emerges as one of the most critical mediating channels: where employment expansion is predominantly informal, income security and wage improvements remain limited, restricting the equalizing potential of economic growth.

The review also highlights that trade openness, FDI, and financial development influence inequality in complex ways. These forces can support growth and opportunity creation, but their distributional impacts depend on the extent of financial inclusion, regional dispersion of investments, and institutional capacity to protect vulnerable groups. Institutional quality and public policy especially social protection, education and healthcare access, labour regulation, and redistributive mechanisms are therefore decisive in determining whether growth leads to more equitable outcomes.

India's comparative position within BRICS reflects this broader conclusion. India's services-led growth, high informality, and pronounced interstate and rural–urban disparities mean that inequality dynamics cannot be understood through aggregate GDP performance alone. Overall, the review concludes that inclusive growth in BRICS requires integrated strategies that combine growth acceleration with employment-intensive structural change, reduced informality, strengthened institutions, and balanced regional development.

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SMART CITY DEVELOPMENT IN THANE: INTEGRATING DIGITAL GOVERNANCE, SMART INFRASTRUCTURE AND SUSTAINABLE URBAN GROWTH

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ABSTRACT

Rapid urbanization has become a defining feature of modern cities, particularly in developing economies such as India. As urban populations increase, cities face growing challenges related to infrastructure, governance, mobility, and environmental sustainability. To address these issues, the Government of India launched the Smart Cities Mission in 2015, aiming to transform urban centers through the integration of information and communication technologies (ICT), sustainable infrastructure, and citizen-centric governance. Thane, one of the fastest-growing cities in the Mumbai Metropolitan Region, has emerged as an important urban hub undergoing rapid transformation through smart city initiatives.

This research paper examines the development of Thane as a smart city, focusing on key components such as smart governance, smart mobility, digital infrastructure, environmental sustainability, and citizen participation. The study uses secondary data obtained from government reports, municipal records, and academic literature to evaluate the impact of smart city initiatives implemented by the Thane Municipal Corporation.

The findings indicate that projects such as the Integrated Command and Control Centre, smart transportation infrastructure, metro connectivity, and energy-efficient urban services have significantly improved urban management in Thane. However, challenges such as rapid population growth, environmental pressure, and infrastructure demand continue to influence the effectiveness of these initiatives. The study concludes that successful smart city development requires integrated governance, technological innovation, and active citizen engagement.

Keywords: Smart City, Thane Municipal Corporation, ICT Governance, Urban Development, Sustainable Cities, Smart Infrastructure

1. INTRODUCTION

Urbanization is rapidly transforming cities across the world. According to global urbanization trends, more than half of the world's population now resides in urban areas. Cities act as centers of economic activity, technological innovation, and social transformation. However, rapid urban growth also creates significant challenges such as congestion, environmental degradation, infrastructure shortages, and inefficient governance systems.

To address these challenges, the concept of Smart Cities has emerged as a modern approach to urban development. Smart cities integrate advanced technologies such as Information and Communication Technology (ICT), Internet of Things (IoT), Artificial Intelligence (AI), and data analytics to improve governance and urban service delivery.

In India, the Smart Cities Mission launched in 2015 aims to develop 100 cities with improved infrastructure, sustainable urban planning, and efficient governance systems. The mission focuses on areas such as digital governance, smart mobility, energy efficiency, environmental sustainability, and improved citizen participation.

Thane city, located in Maharashtra and forming part of the Mumbai Metropolitan Region, has experienced rapid growth due to its strategic location, improved connectivity, and expanding real estate and commercial development. The Thane Municipal Corporation has undertaken several initiatives to improve urban infrastructure and governance using smart technologies. The transformation of Thane into a smart city is therefore an important example of how digital governance and technological innovation can improve urban living conditions.

2. CONCEPTUAL FRAMEWORK OF SMART CITY



Source: Developed by the author based on review of existing literature.

A smart city operates through the integration of several interconnected components including governance, infrastructure, mobility, environment, and citizen participation. This framework shows that technology, governance, and infrastructure collectively contribute to smart city development.

3. REVIEW OF LITERATURE

Several researchers have examined the concept of smart cities and the role of technology in urban governance.

- **Albino, Berardi, and Dangelico (2015)** examined the concept of smart cities and defined them as urban areas that use advanced technologies, human capital, and institutional systems to improve economic development and quality of life. Their study highlighted that smart cities integrate technological innovation with sustainable urban planning to enhance the efficiency of urban services.
- **Caragliu, Del Bo, and Nijkamp (2011)** emphasized that cities become smart when investments in human capital, social infrastructure, and Information and Communication Technologies (ICT) lead to sustainable economic growth and improved living standards. Their research highlighted the importance of digital infrastructure and knowledge-based development in urban transformation.
- **Nam and Pardo (2011)** proposed a conceptual framework for smart cities based on three key dimensions: technology, people, and institutions. According to their study, the successful development of smart cities depends on the integration of advanced technological systems with effective governance structures and active citizen participation.
- **Batty et al. (2012)** discussed the role of digital networks, big data, and intelligent infrastructure in improving urban planning and city management. Their research emphasized that smart cities rely on real-time data collection and analytics to enhance decision-making and optimize urban services.
- **Mohanty, Choppali, and Kougianos (2016)** provided a comprehensive overview of smart cities and highlighted the importance of Internet of Things (IoT) technologies in developing intelligent urban systems. Their study explained how interconnected devices and digital communication networks can improve transportation systems, energy management, and public safety.
- **Bibri and Krogstie (2017)** explored the concept of smart sustainable cities and emphasized the integration of digital technologies with environmental sustainability. Their research suggested that smart city development should balance technological innovation with ecological conservation and sustainable urban growth.

The literature therefore suggests that successful smart cities require a combination of technological innovation, governance efficiency, and sustainable infrastructure development.

4. RESEARCH OBJECTIVES

The objectives of this research are:

1. To understand the concept and components of smart cities.
2. To analyze smart city initiatives implemented in Thane.
3. To evaluate the role of digital governance in improving urban services.
4. To assess the impact of infrastructure development on Thane's urban growth.
5. To identify challenges and opportunities in smart city implementation.

5. RESEARCH METHODOLOGY

The present study adopts a descriptive research design to examine the development of smart city initiatives in Thane. The research is primarily based on secondary data collected from various reliable sources including government reports, Smart Cities Mission documents, Thane Municipal Corporation publications, academic journals, research articles, and official websites related to urban development and smart city projects. The collected information was carefully reviewed and analyzed to understand the implementation of smart governance, smart mobility, digital infrastructure, and environmental sustainability initiatives in Thane. Descriptive and analytical methods were used to interpret the data and evaluate the impact of smart city initiatives on urban development and quality of life. The study aims to provide a comprehensive understanding of how technological integration and digital governance contribute to the transformation of Thane into a smart and sustainable city.

6. OVERVIEW OF THANE CITY

Thane is one of the rapidly developing urban centers in the state of Maharashtra, India. Located in the Mumbai Metropolitan Region (MMR), Thane has emerged as an important residential, commercial, and industrial hub due to its strategic location and strong connectivity with Mumbai and other nearby cities. The city is governed by the Thane Municipal Corporation (TMC), which is responsible for urban planning, infrastructure development, and delivery of civic services. Over the past two decades, Thane has experienced significant urban expansion driven by population growth, real estate development, and economic activities.

According to the Census of India 2011, Thane had a population of approximately 1.8 million, and the population has continued to grow rapidly due to migration and urbanization. The city covers an area of about 147 square kilometers and is well known for its natural landscape, particularly its numerous lakes, earning it the title of the "City of Lakes." Thane currently has more than 30 lakes that contribute to the ecological and environmental balance of the region.

In recent years, Thane has witnessed major infrastructure developments including metro connectivity projects, road infrastructure expansion, and urban mobility initiatives. Projects such as Metro Line 4 (Wadala–Thane–Kasarvadavali), proposed Thane Ring Metro, and coastal road development are expected to

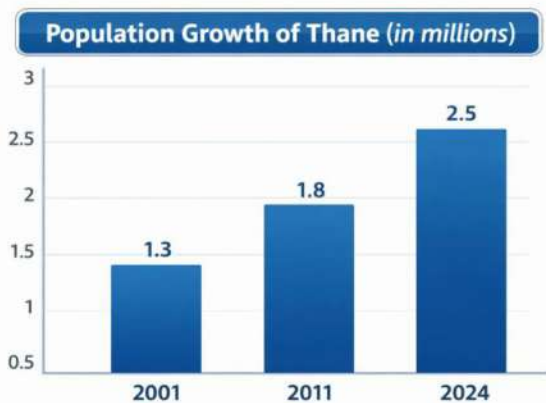
significantly enhance transportation and connectivity within the city. Additionally, the implementation of smart city initiatives such as Integrated Command and Control Centers, digital governance systems, and smart infrastructure projects are transforming Thane into a technologically advanced and sustainable urban center.

Indicator	Details
Location	Mumbai Metropolitan Region, Maharashtra
Municipal Authority	Thane Municipal Corporation
Area	147 sq km
Population (2011 Census)	~1.8 Million
Estimated Population (2024)	~2.5 Million
Number of Lakes	30+
Major Infrastructure	Metro Line 4, Thane Ring Metro, Coastal Road

Source: Secondary Data

Thane has emerged as a major residential and commercial hub due to its proximity to Mumbai and improved connectivity.

Graph 1: Population Growth of Thane



Source: Census of India (2011); Thane Municipal Corporation Reports; Author’s compilation.

Figure 1 illustrates the population growth of Thane over the past two decades. The data indicates a steady increase in population from approximately 1.3 million in 2001 to about 1.8 million in 2011. Recent estimates suggest that the population has reached nearly 2.5 million by 2024. This rapid growth highlights the increasing demand for urban infrastructure, housing, transportation, and public services. The rising population

also emphasizes the need for smart city initiatives to ensure efficient urban management and sustainable development

7. SMART CITY INITIATIVES IN THANE

Smart Governance

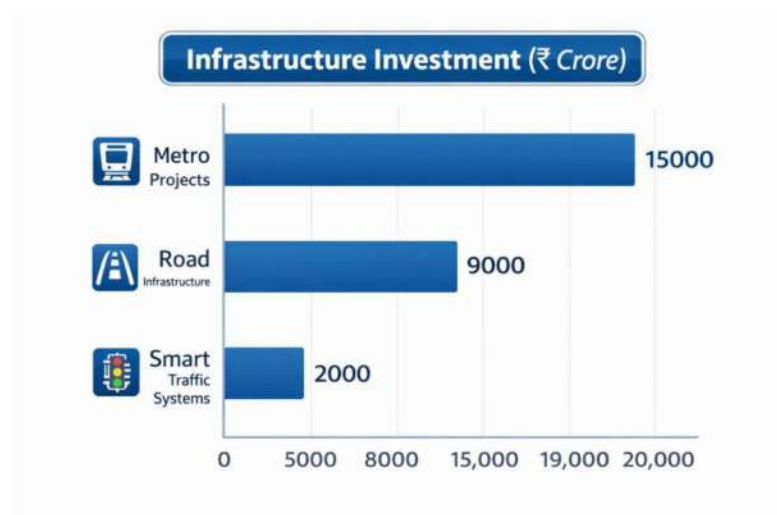
Initiative	Description
Integrated Command Center	Real-time city monitoring
Online Citizen Services	Digital platforms for public services
Smart Surveillance	CCTV network for security

These initiatives improve transparency and efficiency in governance.

Smart Mobility

Project	Description
Metro Line 4	Wadala – Thane – Kasarvadavali
Thane Ring Metro	29 km circular metro line
Coastal Road Project	Improved connectivity

Graph 2: Smart Mobility Infrastructure Investment



Source: Mumbai Metropolitan Region Development Authority (MMRDA); Thane Smart City Project Reports; Author's compilation.

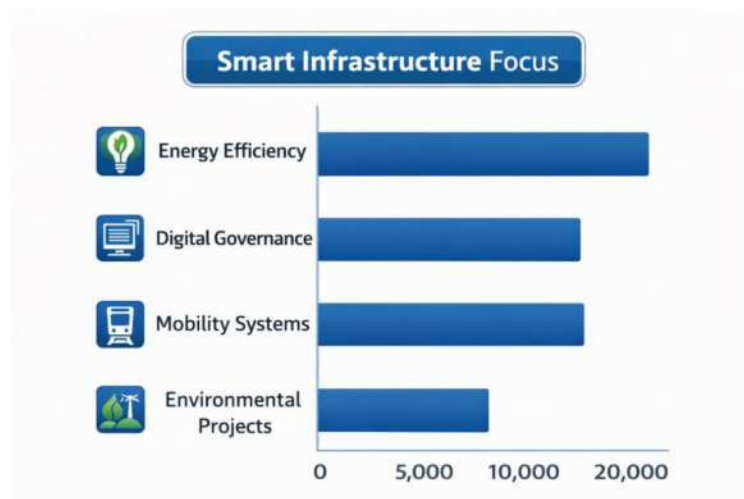
Figure 2 presents the distribution of infrastructure investments in Thane's smart city development projects. A significant portion of investment has been directed toward metro projects, reflecting the city's focus on improving public transportation and reducing traffic congestion. Road infrastructure development also

receives substantial funding to support growing urban mobility needs. Additionally, investments in smart traffic systems aim to enhance traffic management through digital monitoring and intelligent transportation systems.

Smart Infrastructure

Initiative	Impact
LED Street Lighting	Reduced energy consumption
Smart Water Systems	Efficient water management
Digital Utilities	Improved service monitoring

Graph 3: Smart Infrastructure Development Areas



Sources: Source: Smart Cities Mission Guidelines; Thane Smart City Limited; Author's conceptual analysis.

Figure 3 highlights the key focus areas in the development of smart infrastructure in Thane. Mobility systems and energy efficiency initiatives receive significant attention due to their critical role in urban sustainability and transportation management. Digital governance initiatives are also important as they improve service delivery and transparency in municipal administration. Environmental projects, including green infrastructure and waste management initiatives, contribute to maintaining ecological balance and promoting sustainable urban growth.

8. CHALLENGES IN SMART CITY DEVELOPMENT

The implementation of smart city initiatives involves several challenges that affect the efficiency and sustainability of urban development. The major challenges include the following:

- **Rapid Population Growth:** Continuous population increase places pressure on urban infrastructure, housing, and public services.
- **Traffic Congestion and Mobility Issues:** Increasing number of vehicles and urban expansion lead to traffic congestion and transportation management challenges.

- **Environmental Concerns:** Rapid urbanization may result in pollution, deforestation, and reduction of green spaces, affecting environmental sustainability.
- **High Infrastructure Development Costs:** Smart city projects require significant financial investment for technology, infrastructure, and maintenance.
- **Digital Infrastructure Limitations:** Effective implementation of smart technologies requires strong ICT infrastructure and reliable digital connectivity.
- **Governance and Administrative Challenges:** Coordination between multiple government departments and agencies can sometimes delay project implementation.
- **Limited Citizen Awareness and Participation:** Lack of awareness among citizens about smart city initiatives may reduce public engagement and participation.

9. POLICY RECOMMENDATIONS FOR SMART CITY GOVERNANCE

To ensure effective implementation of smart city initiatives, certain policy measures and governance strategies should be adopted:

- **Strengthening Institutional Coordination:** Improved coordination between municipal authorities, state government agencies, and private sector stakeholders is essential for successful smart city implementation.
- **Investment in Digital Infrastructure:** Governments should allocate adequate financial resources to develop advanced ICT infrastructure and digital platforms for efficient urban management.
- **Promotion of Public-Private Partnerships (PPP):** Collaboration with private sector organizations can support the development of innovative smart city technologies and infrastructure projects.
- **Capacity Building and Skill Development:** Training programs for municipal officials and urban planners can enhance their ability to manage smart city technologies effectively.
- **Environmental Sustainability Policies:** Policies focusing on waste management, pollution control, water conservation, and green spaces are necessary for sustainable urban development.
- **Encouraging Citizen Awareness and Participation:** Public awareness programs and citizen engagement initiatives should be promoted to ensure community involvement in smart city governance.

10. FUTURE PROSPECTS OF SMART CITY DEVELOPMENT IN THANE

The future development of Thane as a smart city depends on continuous technological innovation, sustainable urban planning, and efficient governance. The following prospects highlight the potential growth areas for smart city initiatives in Thane:

- **Expansion of Smart Mobility Infrastructure:** Development of metro networks such as Metro Line 4 and the proposed Thane Ring Metro will significantly improve urban transportation and reduce traffic congestion.
- **Integration of Advanced Digital Technologies:** The use of technologies such as Artificial Intelligence (AI), Internet of Things (IoT), and Big Data analytics can enhance city management and improve decision-making processes.
- **Strengthening Digital Governance Systems:** Expansion of e-governance platforms will enable citizens to access municipal services online, improving transparency and efficiency in public administration.
- **Sustainable Urban Planning:** Future smart city projects will focus on green infrastructure, renewable energy utilization, and eco-friendly urban development.
- **Improved Public Infrastructure:** Development of smart public utilities, digital surveillance systems, and intelligent traffic management systems will enhance urban service delivery.
- **Citizen Participation and Community Engagement:** Encouraging active citizen participation in urban planning and governance will contribute to more inclusive and effective smart city development.

10. CONCLUSION

The development of Thane as a smart city represents a significant step toward achieving modern urban governance and sustainable infrastructure development. Through the integration of digital technologies, smart mobility systems, and energy-efficient infrastructure, the city has made considerable progress in improving the efficiency and quality of urban services. Initiatives such as smart governance platforms, intelligent transportation systems, and sustainable infrastructure projects have contributed to enhancing the overall urban management and quality of life for residents.

However, the successful implementation of smart city initiatives requires continuous efforts in terms of effective governance, technological innovation, and active citizen participation. Challenges such as rapid population growth, traffic congestion, infrastructure demand, and environmental sustainability must be addressed through strategic urban planning and sustainable development policies.

Overall, Thane possesses significant potential to emerge as a leading model of smart city development in India. With the continued adoption of advanced technologies, sustainable infrastructure development, and collaborative governance approaches, the city can achieve long-term urban sustainability and improved living standards for its citizens.

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THE ROLE OF COST MANAGEMENT IN ENHANCING POULTRY FARMING PROFITABILITY IN LUCKNOW

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ABSTRACT

This research examines the impact of cost management strategies on poultry farming profitability, with a specific focus on feed cost management and labour-overhead cost control. Data were collected from 100 poultry farmers through structured questionnaires and analysed using multiple regression analysis. The study examined whether feed costs (typically 65-70% of total production expenses) and labour-overhead costs significantly influence farm profit margins. Findings revealed that neither feed cost management nor labour-overhead cost control has a statistically significant effect on profitability, with both models explaining minimal variance ($R^2 = 0.001$ and 0.005 , respectively). The acceptance of null hypotheses suggests that profitability in poultry farming is influenced by a complex interplay of factors beyond direct cost components, including market price fluctuations, farm management efficiency, disease control, and external economic conditions. These results indicate that while cost management remains operationally important, enhancing profitability requires integrated strategies combining cost control with productivity enhancement, market access optimisation, and comprehensive risk management practices. The study emphasises the need for holistic approaches to poultry farm management rather than focusing solely on individual cost components.

Keywords: Poultry farming, Cost Management, Feed costs, Labour costs, Profitability, Farm economics

INTRODUCTION

▪ Poultry Farming in India

Poultry farming in India has evolved from a small-scale backyard practice to a large-scale commercial industry, playing a crucial role in food security, employment, and exports. India is now the world's third-largest egg producer and the fifth-largest producer of poultry meat. The 20th Livestock Census (2019) reported a poultry population of 851.81 million, representing a 16.8% increase from the previous census, with backyard poultry numbers rising by 45.8%. This dual structure reflects both a vibrant commercial sector and inclusive smallholder farming. Historically, poultry farming has undergone four distinct phases. Before the 1960s, it was primarily backyard-based, utilising indigenous breeds and low productivity. The 1960s to 1980s saw institutional support, particularly from CARI, and the introduction of exotic breeds, which significantly increased egg production. From the 1990s to the 2010s, private integrators like Venky's and Suguna drove commercialisation through contract farming and processing facilities. Since 2010, the industry has adopted automation, climate-controlled sheds, and biosecure systems, with a growing emphasis on exports. The structure of poultry farming consists of three models: commercial, backyard, and hybrid. The commercial sector, which produces over 80% of eggs and broilers, is dominated by integrated farms that include hatcheries and feed mills. Backyard poultry supports rural households, women, and marginal farmers, with support from schemes like the Rural Backyard Poultry Development program. Hybrid systems combine scavenging and supplementary feeding, serving as a bridge between traditional and commercial models.

Economically, poultry contributes over ₹1.5 lakh crore annually, accounting for approximately 1% of India's GDP and 14% of the country's livestock GDP. It provides direct and indirect employment to nearly six million people and serves as a source of affordable protein. Additionally, poultry litter generates 2.5 million tonnes of organic fertiliser annually, while exports of eggs and processed meat add further value. In terms of production, India generates 129.6 billion eggs and 4.47 million tonnes of broiler meat annually. However, per capita availability—79 eggs and 3.3 kg of meat—remains below ICMR's recommended levels. Regionally, southern states dominate egg production, while western states are emerging as broiler hubs, and eastern India continues to focus on backyard poultry.

Poultry farming in India has experienced remarkable growth and transformation, but it needs balanced strategies that combine industrial expansion, inclusive smallholder models, and progressive policies to meet both national nutritional goals and global competitiveness.

▪ Cost management of poultry farming

Poultry farming is one of the fastest-growing sectors of livestock production, but profitability depends on effective cost management. The enterprise is highly competitive and sensitive to fluctuations in input prices, making strategic planning and monitoring essential. Key cost drivers include feed, chicks, housing, labour, veterinary care, and infrastructure. While fixed costs cover land, housing, and equipment, variable costs such as feed, vaccines, and utilities directly influence production efficiency. Feed costs constitute nearly 65–70% of total expenses, making them the most critical area for management. Strategies such as least-cost feed formulation, on-farm feed milling, the use of alternative raw materials, improving feed conversion ratio (FCR), and reducing wastage through the use of automated feeders significantly improve profitability. Similarly, chick procurement and brooding practices affect long-term economics. Procuring high-quality day-old chicks and maintaining proper brooding conditions reduces mortality and improves flock performance.

Labour and utilities account for 10–15% of costs, where efficiency can be improved through worker training, digital record-keeping, the use of renewable energy, and water recycling. Additionally, effective waste management turns liabilities into assets, as poultry litter can be used for organic fertilisers or biogas, creating new revenue streams. Financial resilience depends on access to institutional credit, insurance schemes, and contract farming models that reduce input risks. Future cost management will increasingly rely on precision farming tools, AI-driven analytics, renewable energy sources, and value-added processing, thereby combining efficiency with sustainability. Ultimately, cost management in poultry farming involves optimising every resource to balance profitability, sustainability, and long-term sectoral growth.

LITERATURE REVIEWS:

1. **Ricklefs (1985)** investigated the impact of selection on muscle growth and development in poultry, specifically broilers and Japanese quail. The study aimed to analyse growth responses using comparative growth curves and the Gompertz model. Findings revealed that selection increases early post-hatching muscle proliferation, with growth constraints linked to skeletal muscle development and functional maturity.
2. **Falconer et al. (1981)** investigated hormonal influences on poultry growth, focusing on somatomedins, Insulin, Glucocorticoids, and sex steroids. Using Biochemical assays and physiological observations in chick embryos and postnatal birds, they found that growth is positively linked with somatomedin and insulin. At the same time, glucocorticoids suppress muscle/skeletal growth, and sex steroids influence carcass quality.

3. **Shepherd and Fairchild (2010)** conducted a review on Footpad Dermatitis (FPD) in broilers and turkeys. Their objective was to assess economic, welfare and management implications. Using secondary data from decades of research, they highlighted litter moisture, nutrition, genetics and stocking density as primary causes. Findings emphasised the importance of prevention through litter management, genetic selection, and welfare-based auditing.
4. **Applegate and Angel (2014)** reviewed the Nutrient Requirement of Poultry (NRC) publication, emphasising its historical role as a benchmark for poultry nutrition since 1944. The study's objective was to highlight outdated recommendations and the urgent need for revision. Using secondary literature analysis, they found that modern poultry strains require higher levels of amino acids and phosphorus. They found that updated NRC guidelines, incorporating modelling and recent data, are critical for sustainable poultry production.
5. **Dihua Wu et al. (2022)** reviewed the role of information perception in modern poultry farming, aiming to analyse global research on sensors, AI, IOT and Robotics across 26 countries. Using Secondary data analysis, they identified applications in target perception, behaviour, health, and environment monitoring. Findings highlight the potential of automation but also note persistent challenges in accuracy, disease diagnosis, and multi-robot coordination.
6. **Ben Sassi, Averos, and Estevez (2016)** reviewed technological innovations for poultry welfare, focusing on sensors, acoustic tools, imaging, optical flow, infrared thermography, and precision livestock farming. Using a Secondary literature review, the study emphasised technology's role in real-time welfare assessment. Findings highlight potential to improve welfare and sustainability, though commercial implementation challenges remain.
7. **Skarp, Hanninen and Rautelin (2016)** reviewed the role of poultry meat in human Campylobacteriosis. The objective was to analyse poultry as a significant reservoir of *Campylobacter jejuni* and *C. Coli*. Using secondary literature and epidemiological data (no primary sample size), the findings showed that poultry strongly contributes to global infections, highlighting farm-level biosecurity and consumer education as key interventions for mitigating this contribution.
8. **Yegani and Korver (2008)** reviewed factors influencing intestinal health in poultry. The objective was to analyse the gastrointestinal tract's structural, microbial, and immunological balance and its role in bird performance. Using a literature-based methodology (no primary sample size), they found that diet, pathogens, and management practices critically affect gut health, especially after the removal of antibiotics and growth promoters.
9. **Porter (1998)** reviewed enteric bacterial infections in poultry, focusing on necrotic enteritis, ulcerative enteritis, spirochetosis, salmonellosis, colibacillosis, erysipelas, mycobacteriosis, and fowl cholera. The objective was to highlight intestinal health threats and the diagnostic methods used. Using literature-based

analysis (without a sample size), the study identified *Clostridium*, *Salmonella*, and *E. coli* as major contributors to poor feed efficiency, morbidity, and mortality, emphasising the importance of laboratory diagnostics for effective management.

10. **Antunes et al. (2016)** reviewed the role of poultry meat in the global spread of salmonellosis. The objective was to analyse serotype shifts, antimicrobial resistance, and control challenges. Using epidemiological and surveillance data, the study found poultry meat to be a significant source, with multidrug-resistant *Salmonella* clones posing a substantial public health risk.
11. **Muloi et al. (2025)** examined antibiotic use and access among poultry farmers in Kenya using a cross-sectional survey of 766 farms across 15 countries and 321 veterinary drug stores. Employing random forest modelling and geospatial analysis, they found that 54.7% of farms used antibiotics, largely self-administered, which highlights the risks of multidrug resistance and the need for stewardship strategies.
12. **Smulders et al. (2025)** explored sustainable transformation in the Dutch Poultry Industry using a qualitative approach. Through 13 expert interviews, content analysis, creative synthesis and visualisation, the study developed six future images highlighting alternative socio-technical contexts. Findings revealed diverse innovation pathways, emphasising environmental policies, entrepreneurial farmers, collaborative ecosystems, and technological integration for systematic sustainability.
13. **Zamani et al. (2025)** analysed policy coherence in Ghana's Poultry sector, aiming to assess the effectiveness of interventions on domestic production and food security. Using panel simultaneous equation models and the synthetic control method on data from 1999 to 2019, the findings revealed a 215% increase in production; however, the rising trend of poultry imports persists, highlighting the need for balanced policy strategies.
14. **Sunita et al. (2022)** analysed the economic cost and profit structure of broiler poultry farming in Mahendergarh, Haryana. The study aimed to assess socio-economic profiles, investments, costs and profits. Using primary data collected from 25 broiler farmers through purposive sampling, the findings revealed that feed cost accounted for 43.43% of total production costs, with a benefit-cost ratio (BCR) of 1.46, indicating profitability.
15. **Nkukwana (2018)** examined the current status, challenges, and future outlook of global poultry production with a specific focus on the South African poultry industry. The study, using a comprehensive review methodology, highlighted issues such as high feed costs, market competition, disease outbreaks, and biosecurity concerns. Findings revealed that feed costs account for nearly 75% of production expenses, significantly impacting the competitiveness of small-scale producers.

OBJECTIVES:

1. To examine the relationship between feed cost management and the profitability of poultry farms.
2. To assess the effect of labour and overhead cost control on the profit margins of poultry farms.

HYPOTHESES OF THE STUDY:

1. **Null Hypothesis (H_{01}):** Feed cost management has no significant effect on the profitability of poultry farms.
2. **Null Hypothesis (H_{02}):** Labour and overhead cost control have no significant effect on the profit margins of poultry farms.

SIGNIFICANCE OF THE STUDY

This study addresses a critical gap in understanding the quantitative relationship between cost management strategies and profitability in poultry farming. With feed costs representing the largest expenses category and labour-overhead costs significantly impacting operational efficiency, determining their actual influence on profit margins is essential for evidence-based farm management decisions. The research provides valuable insights for farmers seeking to optimise resource allocation, policymakers developing support programs, and researchers investigating agricultural economics. The findings contribute to the development of more effective cost management frameworks and inform strategies for enhancing the competitiveness and sustainability of the poultry sector, particularly as the industry faces increasing input cost pressures and market volatility.

METHODOLOGY:

- **Research Design:** The study adopted a quantitative research design with an exploratory approach to examine cost-profitability relationships.
- **Primary Data:** First-hand data were collected from 100 poultry farmers through structured survey questionnaires to capture their perceptions of cost management and profitability outcomes.
- **Secondary Data:** Secondary data were obtained from published sources, including journals, research papers, and industry reports, to provide contextual support.

- **Sampling Technique:** Data were collected from 100 poultry farming units using non-probability convenience sampling across different farm sizes and investment levels

DATA ANALYSIS

Objective 1:

To examine the relationship between feed cost management and the profitability of poultry farms.

Feed cost, often comprising 60–70% of poultry production expenses, is critical for profitability. This objective assesses whether variations in feed cost significantly affect farmers' profit margins. The analysis is based on 100 valid responses, with complete demographic and cost-related data.

The respondents represented a diverse profile, with ages fairly evenly distributed; the largest group was 36–45 years old (24%). Education levels varied, with Diploma holders (21%) and those without formal education (19%) most common. Most farmers had mid-level experience, particularly 7–10 years (32%). Initial investments were spread across categories, with the majority under ₹50,000 (27%). Revenues were also balanced, with the largest share (23%) earning less than ₹50,000 annually.

When examining **the percentage of total cost attributed to feed**, the most common category was 30%–50% (32%), followed by 51%–70% (29%), more than 70% (21%), and less than 30% (18%). This confirms the significant role feed cost plays in total production expenditure.

Respondents were also asked to rate the **impact of various costs on their profit margins** using a five-point scale ranging from “No impact” to “Very high impact.”

- **Summary of the cost perception findings:**

Perceptions of cost impact varied among farmers. Labour costs were most often rated as having a “very high impact” (27%), though 20% saw no impact. Feed costs were more frequently viewed as minimal, with 24% reporting “no impact” and 23% “neutral.” Overhead costs showed a mixed pattern, with 25% perceiving a “very high impact” and 24% rating them as “neutral.”

Overall, the descriptive analysis suggests that respondents come from diverse demographic and economic backgrounds. The variation in cost impact ratings reflects differing perceptions of the influence of cost components on profitability, providing a strong basis for the subsequent inferential analysis.

Hypotheses 01

- **Null Hypothesis (H_{01}):** Feed cost management has no significant effect on the profitability of poultry farms.
- **Alternative Hypothesis (H_{11}):** Feed cost management has a significant effect on the profitability of poultry farms.

A simple linear regression was conducted to examine whether feed cost significantly predicts profit margin. The dependent variable was profit margin, and the independent variable was the impact of feed cost (measured by respondents' ratings). The sample size was 100 respondents.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.027	0.001	-0.009	1.418

The model shows a very weak relationship between feed cost and profit margin ($R = 0.027$). The R^2 value of 0.001 indicates that only 0.1% of the variance in profit margin is explained by feed cost.

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.142	1	0.142	0.071	.791
Residual	197.098	98	2.011		
Total	197.240	99			

The regression model was not statistically significant, $F(1,98) = 0.071$, $p = .791$, indicating that feed cost does not significantly predict profit margin.

Coefficients

Predictor	B	Std. Error	Beta	t	Sig.
(Constant)	2.817	0.321	–	8.772	.000
Feed cost	-0.027	0.103	-0.027	-0.266	.791

The regression coefficient for feed cost was negative but non-significant ($B = -0.027$, $p = .791$). This suggests that feed costs have no significant effect on profitability in this sample.

The results indicate that feed cost management does not significantly influence profit margins among poultry farmers in the dataset. The null hypothesis (H_{01}) is therefore not rejected. This implies that factors other than feed cost may be more critical in determining profitability.

The regression analysis revealed that feed cost has no significant effect on profitability. The model explained only 0.1% of the variance in profit margins, and the relationship was statistically non-significant ($p = .791$). Hence, the null hypothesis was not rejected. This suggests that although feed cost is a significant expense, its variation did not directly influence profitability in the sample studied. Other operational or external factors may play a more decisive role in determining profitability.

Objective 2:

To assess the effect of labour and overhead cost control on the profit margins of poultry farms.

Labour and overhead costs represent essential components of poultry farm expenditure. Labour involves both skilled and unskilled workforce contributions, while overheads include utilities, maintenance, and administrative costs. Efficient control of these costs is often assumed to enhance profitability. This objective assesses whether labour costs have a statistically significant impact on profit margins, providing insight into whether improved cost control in this area enhances overall financial performance.

Hypotheses 02

- **Null Hypothesis (H_{02}):** Labour and overhead cost control have no significant effect on the profit margins of poultry farms.
- **Alternative Hypothesis (H_{12}):** Labour and overhead cost control have a significant effect on the profit margins of poultry farms.

A simple linear regression was conducted to determine whether labour cost significantly predicts profit margin. The dependent variable was profit margin, and the independent variable was the impact of labour cost (measured by respondents' ratings). The sample size was 100 respondents.

Descriptive Statistics

Variable	Mean	Std. Deviation	N
Profit margin	2.74	1.411	100
Labour cost	3.11	1.497	100

Correlations

	Profit margin	Labour cost
Profit margin	1.000	.071
Labour cost	.071	1.000

Sig. (1-tailed) = 0.241, N = 100

The correlation between labour cost and profit margin was positive but weak ($r = .071$) and statistically non-significant.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.071	0.005	-0.005	1.415

Labour cost explained only 0.5% of the variance in profit margin, which is negligible.

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.996	1	0.996	0.497	.482
Residual	196.244	98	2.002		
Total	197.240	99			

The overall regression model was not significant, $F(1, 98) = 0.497$, $p = 0.482$.

Coefficients

Predictor	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	2.532	0.328	–	7.727	.000	–	–
Labour cost	0.067	0.095	0.071	0.705	.482	1.000	1.000

The regression coefficient for labour cost was positive ($B = 0.067$) but not significant ($p = .482$). This suggests that labour cost ratings have no significant impact on profit margins.

Collinearity Diagnostics

Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Variance Proportions (Labour cost)
1	1.902	1.000	0.05	0.05
2	0.098	4.404	0.95	0.95

Collinearity statistics show no multicollinearity issues (Tolerance = 1.000, VIF = 1.000).

The regression analysis shows that labour cost does not significantly affect profitability. The model explains less than 1% of the variance in profit margin, and the relationship is statistically non-significant ($p = .482$). Therefore, the null hypothesis (H_{02}) is not rejected.

This implies that labour cost management, as measured in this study, is not a significant predictor of profit margins. Other cost factors (such as overheads or external market conditions) may play a stronger role in influencing profitability.

The regression analysis demonstrated that labour cost does not significantly affect profitability. The model accounted for only 0.5% of the variance in profit margins, with a positive but statistically non-significant coefficient ($p = 0.482$). Consequently, the null hypothesis was not rejected. This suggests that labour costs, at least within this dataset, do not play a decisive role in shaping profitability. Other factors, such as feed efficiency, market price fluctuations, or farm management practices, may more strongly determine poultry farmers' profit levels.

MAJOR FINDINGS

Hypothesis 1- Feed Cost Management:

Regression analysis revealed no significant relationship between feed cost management and profitability ($R^2 = 0.001$, $p = 0.791$)

The model explained only 0.1% of the variance in profitability, leading to the acceptance of the null hypothesis that feed cost management has no significant effect on profit margins.

Hypothesis 2 – Labour and overhead cost control:

Similarly, labour and overhead costs showed no significant impact on profitability ($R^2 = 0.005$, $p = 0.482$).

The model explained only 0.5% of the variance in profit margin, resulting in the acceptance of the null hypothesis.

CONCLUSION

The present study aimed to investigate the impact of feed cost, labour cost, and overhead cost management on the profitability of poultry farms. The findings from regression analyses indicate that neither feed cost nor labour cost exerted a statistically significant effect on profit margins. Although these cost components represent substantial portions of total production expenditure, their variation did not translate into measurable differences in profitability within the sample. This suggests that profitability in poultry farming is likely shaped by a broader set of factors, including market price fluctuations, farm management efficiency, disease control, and external economic conditions. The results highlight that while cost control is important for operational sustainability, improving profitability may require a more integrated strategy that combines cost management with productivity enhancement, market access, and risk management practices.

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