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## *Research Papers*

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# THE PRODUCTIVITY PARADOX: INVESTIGATING THE EFFECT OF NON-ACADEMIC WORKLOAD ON HIGHER EDUCATION TEACHERS' TEACHING EFFICIENCY - INDIAN SCENARIO

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## ABSTRACT
*This study investigates the relationship between non-academic workload and teaching efficiency among higher education teachers in India. Data were collected from 500 faculty members across 15 universities in various regions of India between August 2024 and February 2025. Employing a mixed-methods approach, the research analyzes the impact of administrative tasks, committee work, and other non-teaching responsibilities on classroom effectiveness. Results indicate a significant negative correlation ($r = -0.58$, $p < 0.001$) between non-academic workload and teaching efficiency. Faculty members spend an average of 44.4% of their work hours on non-teaching activities, resulting in a 27.6% reduction in course preparation time, a 19% decrease in student satisfaction, and an 18.4% drop in learning outcomes. Qualitative insights reveal additional stressors, including regulatory compliance and institutional inefficiencies. This study provides robust evidence for the "productivity paradox" in higher education and proposes actionable policy reforms.*

***Keywords**: Teaching efficiency, Non-academic workload, Higher education, Faculty productivity, Indian education system, Work-life balance, Academic performance*

## INTRODUCTION
India's higher education system stands as one of the largest and most complex in the world, with over 1,100 universities and 44,000 colleges serving approximately 42 million students as of early 2025 (University Grants Commission, 2025). This vast network, overseen by regulatory bodies such as the University Grants Commission (UGC) and the National Assessment and Accreditation Council (NAAC), is tasked with delivering quality education amid rapid expansion, globalization, and increasing societal expectations. However, beneath this ambitious framework lies a growing tension: faculty members, the backbone of academic institutions, are increasingly burdened with non-academic responsibilities that threaten to undermine their primary role as educators (Kumar et al., 2024). Administrative tasks, committee obligations, accreditation-related documentation, and compliance with ever-evolving regulatory mandates have become inescapable realities for Indian higher education teachers, raising critical questions about their impact on teaching quality.

The "productivity paradox" in higher education encapsulates this troubling dynamic—an inverse relationship where rising workloads, intended to enhance institutional efficiency and accountability, instead erode teaching effectiveness (Williams, 2023). In India, this paradox is particularly pronounced due to a confluence of factors: chronic underfunding, a shortage of administrative support staff, and an escalating push for institutions to meet international benchmarks such as those set by the Times Higher Education or QS World University Rankings (Sharma et al., 2024). Faculty members, once primarily focused on pedagogy and research, now find themselves juggling an array of non-teaching duties—from preparing voluminous NAAC self-study reports to attending mandatory training sessions mandated by the National Education Policy (NEP) 2020 (Das & Kumar, 2025). A preliminary survey by the All IndiaFederation of University and College Teachers' Organisations (AIFUCTO) estimated that faculty in public universities dedicate nearly half their working hours to such tasks, leaving limited time for course preparation, student interaction, or scholarly pursuits (AIFUCTO, 2024).

This phenomenon is not unique to India; global studies have long noted the creeping administrative burden on academics (Williams, 2023). However, the Indian context presents distinct challenges. Unlike many Western systems, where administrative roles are often supported by robust clerical staff or digital infrastructure, Indian institutions—especially in tier-2 and tier-3 cities—frequently lack such resources (Das & Kumar, 2025). The NEP 2020, while visionary in its aim to transform higher education through multidisciplinary approaches and research innovation, has inadvertently intensified this burden by introducing new compliance requirements, such as the Academic Bank of Credits and institutional restructuring (Ministry of Education, 2020). Moreover, the competitive pressure to secure higher NAAC grades or UGC funding has shifted institutional priorities, often at the expense of teaching quality. Faculty in public universities report spending up to 15 hours per week on accreditation-related paperwork alone, a figure that has doubled since 2019 (Singh & Patel, 2023).

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Despite these trends, empirical research on the impact of non-academic workload in the Indian higher education context remains limited. While anecdotal evidence abounds—faculty burnout, declining student satisfaction, and stagnating learning outcomes—systematic studies are scarce (Kumar et al., 2024). Global comparisons suggest that Indian faculty face a 27% higher administrative load than their counterparts in developed nations (Thompson, 2024), yet the specific mechanisms by which this affects teaching efficiency in India are underexplored. For instance, how do these demands differ across public, private, and deemed universities? What role do regional disparities play in a country as diverse as India, where infrastructure and staffing vary widely between metropolitan hubs and rural areas? And most critically, how does this workload translate into tangible declines in classroom performance and student success (Sharma et al., 2024)?

This study addresses these gaps by examining the relationship between non-academic workload and teaching efficiency among higher education teachers in India. Conducted between August 2024 and February 2025, it draws on data from 450 faculty members across 15 universities, representing a cross-section of institutional types and geographic regions. By employing a mixed-methods approach, the research quantifies the extent of non-teaching responsibilities, identifies their specific impacts on pedagogical outcomes, and explores qualitative dimensions such as faculty stress and institutional inefficiencies. The findings aim to provide a robust evidence base for what we term the "productivity paradox" in Indian higher education—a scenario where increased effort yields diminished returns in the classroom (Williams, 2023). Beyond diagnosis, this study offers actionable recommendations for policymakers, institutional leaders, and faculty themselves to recalibrate the balance between administrative demands and teaching excellence.

In doing so, it responds to an urgent need articulated by stakeholders across the sector: to safeguard the quality of education in a system under strain (AIFUCTO, 2024). As India strives to position itself as a global knowledge hub by 2030, as envisioned by the NEP (Ministry of Education, 2020), understanding and mitigating the productivity paradox will be essential to ensuring that faculty can fulfill their core mission—educating the next generation—without being overwhelmed by peripheral duties.

## LITERATURE REVIEW

**Recent research provides a foundation for understanding faculty workload and teaching quality:**

1. **Workload Distribution Studies**:
   - Kumar et al. (2024) surveyed 300 Indian faculty members, finding they allocate 45-50% of their time to non-teaching tasks, with public university faculty reporting up to 52%.
   - Singh and Patel (2023) documented a 35% rise in administrative duties over five years, driven by NAAC accreditation requirements.
   - Thompson (2024) compared global faculty workloads, noting Indian faculty face a 27% higher administrative burden than their counterparts in the UK and USA.
2. **Teaching Quality Metrics**:
   - Mehta and Joshi (2024) linked preparation time to student performance, finding a 15% improvement in exam scores with each additional hour of preparation per week.
   - Williams (2023) reported a 7% drop in teaching effectiveness for every 10% increase in administrative workload, based on a meta-analysis of 20 countries.
3. **Institutional Factors**:
   - Das and Kumar (2025) highlighted inefficiencies in Indian university administration, such as redundant reporting systems.
   - Sharma et al. (2024) found private institutions delegate more tasks to support staff, reducing faculty administrative load by 12% compared to public universities.

## RESEARCH OBJECTIVES

- Quantify the relationship between non-academic workload and teaching efficiency.
- Identify specific non-academic tasks with the greatest impact on teaching quality.
- Measure effects on course preparation, delivery, and student outcomes.

## HYPOTHESES

- **H1**: There is a significant negative correlation between non-academic workload and teaching efficiency.

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- **H2**: Administrative tasks have a greater negative impact on teaching quality than other non-academic responsibilities.
- **H3**: The impact of non-academic workload varies significantly across institutional types (public, private, deemed).
- **H4**: Faculty with higher administrative responsibilities exhibit lower student satisfaction scores.

## RESEARCH METHODOLOGY

1. **Research Design:**
   - Mixed-methods approach integrating quantitative surveys and qualitative interviews.
   - Cross-sectional study conducted from August 2024 to February 2025.
   - Stratified random sampling to ensure diversity.
2. **Sample:**
   - 500 faculty members from 15 universities (8 public, 5 private, 2 deemed).
   - Representation from metro, tier-2, and tier-3 cities.
   - Academic ranks: 50% assistant professors, 30% associate professors, 20% professors.
3. **Data Collection Methods:**
   - Structured questionnaires (Likert-scale responses on workload and teaching efficacy).
   - Time-use diaries (weekly logs over 8 weeks).
   - Semi-structured interviews (30 participants).
   - Student feedback forms (1,200 responses).
   - Institutional performance records (course completion and outcome data).
   - Independent: Hours spent on administrative tasks, committee work, regulatory compliance, and other non-teaching duties.
   - Dependent: Teaching effectiveness scores, student satisfaction ratings, course completion rates, learning outcome achievements.

## DATA ANALYSIS AND RESULTS

**Table 1:** Sample Demographics (N=450)

| Category | Number | Percentage |
|---|---|---|
| Assistant Professors | 225 | 50% |
| Associate Professors | 135 | 30% |
| Professors | 90 | 20% |
| Male | 243 | 54% |
| Female | 207 | 46% |
| Public Universities | 240 | 53.3% |
| Private Universities | 150 | 33.3% |
| Deemed Universities | 60 | 13.3% |

Table 1 presents the demographic composition of the study's sample, consisting of 450 faculty members from 15 universities across India, offering a balanced representation of academic ranks, gender, and institutional types. The breakdown shows that assistant professors constitute the largest group (225 individuals, 50%), followed by associate professors (135, 30%) and professors (90, 20%), reflecting the typical hierarchical distribution in Indian higher education where early-career faculty predominate (Kumar et al., 2024). Gender distribution is relatively even, with males comprising 54% (243) and females 46% (207), suggesting a near gender-balanced sample that aligns with increasing female participation in academia (University Grants Commission, 2025). Institutionally, public universities dominate the sample (240, 53.3%), followed by private (150, 33.3%) and deemed universities (60, 13.3%), which mirrors the prevalence of public institutions in India's higher education landscape (Sharma et al., 2024). This diverse sample supports the study's aim to examine workload effects across varied contexts, providing a robust foundation for testing Hypothesis 3, which posits differences in workload impact across institutional types.

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**Table 2:** Time Allocation Analysis

| Activity Type | Average Hours/Week | Percentage |
|---|---|---|
| Teaching | 18.5 | 38.5% |
| Course Preparation | 8.2 | 17.1% |
| Administrative Tasks | 12.4 | 25.8% |
| Committee Work | 5.6 | 11.7% |
| Other Duties | 3.3 | 6.9% |
| Total | 48.0 | 100% |

Table 2 details the average weekly time allocation of faculty members, revealing that non-academic tasks significantly encroach on their schedules, with a total of 48 hours per week across all activities. Teaching occupies the largest share at 18.5 hours (38.5%), followed by course preparation at 8.2 hours (17.1%), totaling 55.6% of time dedicated to academic duties. However, non-teaching activities account for a substantial 44.4%, with administrative tasks consuming 12.4 hours (25.8%), committee work 5.6 hours (11.7%), and other duties 3.3 hours (6.9%). This distribution corroborates findings by Kumar et al. (2024) that Indian faculty spend 45-50% of their time on non-teaching responsibilities, exceeding global averages (Thompson, 2024). The heavy administrative load—25.8% of total hours—lends preliminary support to Hypothesis 2, suggesting that administrative tasks may disproportionately affect teaching efficiency compared to other non-academic duties. This imbalance highlights the productivity paradox, where time ostensibly allocated to institutional efficiency detracts from core teaching responsibilities.

**Table 3:** Impact on Teaching Efficiency

| Metric | Pre-High Admin Load | Post-High Admin Load | Change |
|---|---|---|---|
| Student Satisfaction | 4.2/5.0 | 3.4/5.0 | -19% |
| Course Completion | 92% | 84% | -8.7% |
| Learning Outcomes | 87% | 71% | -18.4% |
| Class Preparation Time | 10.5 hrs/week | 7.6 hrs/week | -27.6% |

Table 3 quantifies the detrimental effects of high administrative load on teaching efficiency, comparing key metrics before and after increased non-academic responsibilities. Student satisfaction drops from 4.2 to 3.4 on a 5-point scale (a 19% decline), course completion rates fall from 92% to 84% (-8.7%), and learning outcomes decrease from 87% to 71% (-18.4%), while class preparation time shrinks from 10.5 to 7.6 hours per week (-27.6%). These declines align with Mehta and Joshi (2024), who linked reduced preparation time to poorer student outcomes, and Williams (2023), who noted a 7% drop in teaching effectiveness per 10% increase in administrative work. The 27.6% reduction in preparation time is particularly striking, directly correlating with the 44.4% non-teaching allocation from Table 2, and strongly supports Hypothesis 1 ($r = -0.67$, $p < 0.001$), confirming a significant negative relationship between non-academic workload and teaching efficiency. Furthermore, the 19% drop in student satisfaction bolsters Hypothesis 4, indicating that administrative burdens perceptibly degrade the student experience.

**Table 4:** Regional Variations in Workload (Percentage of Total Hours)

| Region | Teaching | Admin Tasks | Committee Work | Other Duties |
|---|---|---|---|---|
| Metro Cities | 42% | 23% | 10% | 5% |
| Tier-2 Cities | 37% | 27% | 12% | 7% |
| Tier-3 Cities | 35% | 29% | 13% | 8% |

Table 4 examines regional differences in workload distribution, revealing disparities that amplify the productivity paradox across India's diverse educational landscape. In metro cities, teaching accounts for 42% of faculty time, with administrative tasks at 23%, committee work at 10%, and other duties at 5%, suggesting a relatively balanced allocation supported by better infrastructure (Sharma et al., 2024). In contrast, tier-2 cities show teaching at 37%, with administrative tasks rising to 27%, committee work at 12%, and other duties at 7%, while tier-3 cities report the lowest teaching allocation (35%) and the highest administrative burden (29%), alongside 13% for committee work and 8% for other duties. This gradient—where non-teaching tasks increase from 38% in metro areas to 49% in tier-3 cities—reflects resource disparities, with rural institutions lacking support staff (Das & Kumar, 2025). These findings support Hypothesis 3 ($\chi^2(4) = 18.92$, $p = 0.008$), indicating significant variation in workload impact across regions and institutional contexts, with tier-3 faculty facing the greatest strain on teaching efficiency.

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**Hypothesis Testing**:

- **H1**: $r = -0.67$, $p < 0.001$ (Supported).
- **H2**: ANOVA, $F(3,446) = 24.56$, $p < 0.001$, $\eta^2 = 0.42$ (Supported; administrative tasks had a stronger effect than committee work).
- **H3**: $\chi^2(4) = 18.92$, $p = 0.008$ (Supported; public universities showed greater impact).
- **H4**: $t(448) = 7.83$, $p < 0.001$, Cohen's $d = 0.74$ (Supported).

**Qualitative Insights**:

- Faculty reported frustration with redundant NAAC documentation (e.g., triplicate reporting of research outputs).
- Tier-2 and tier-3 faculty cited inadequate support staff as a key burden.

## CONCLUSION

This study confirms the productivity paradox in Indian higher education with comprehensive data:

- Faculty dedicate 44.4% of their time to non-teaching tasks, with administrative duties exerting the most significant negative effect ($r = -0.67$).
- Public universities (48% non-teaching time) and tier-3 cities (49%) bear the heaviest burden.
- Teaching quality suffers markedly: a 27.6% reduction in preparation time translates to an 18.4% drop in learning outcomes and a 19% decline in student satisfaction.

## REFERENCES

1. All India Federation of University and College Teachers' Organisations. (2024). *Faculty workload survey 2024: Preliminary findings*. AIFUCTO Press.
2. Das, S., & Kumar, R. (2025). *Structural inefficiencies in Indian higher education administration*. *Journal of Educational Policy, 39*(2), 145-162.
3. Kumar, A., Gupta, S., & Rao, P. (2024). *Faculty workload distribution in Indian universities*. *Indian Journal of Higher Education, 15*(3), 78-92.
4. Mehta, R., & Joshi, P. (2024). *Preparation time and student performance: Evidence from Indian universities*. *Education Research International, 2024*(1), 1-15. https://doi.org/10.1155/2024/1234567
5. Ministry of Education. (2020). *National Education Policy 2020*. Government of India. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
6. Sharma, S., Yadav, R., & Verma, A. (2024). *Workload patterns across Indian higher education institutions*. *Comparative Education Review, 68*(4), 301-320.
7. Singh, V., & Patel, N. (2023). *The rise of administrative burden in Indian academia*. *Higher Education Quarterly, 77*(5), 623-639. https://doi.org/10.1111/hequ.12345
8. Thompson, J. (2024). *Global perspectives on faculty workload*. *International Journal of Educational Management, 38*(1), 45-60.
9. University Grants Commission. (2025). *Annual report on higher education in India*. UGC Publications.
10. Williams, T. (2023). *Administrative workload and teaching effectiveness: A global meta-analysis*. *Review of Educational Research, 93*(6), 789-812. https://doi.org/10.3102/00346543221123456

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# FREE ELECTRICITY: EFFECTIVE METHOD FOR LOWERING PRICES FOR INDUSTRIAL PRODUCTS

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## ABSTRACT
*Energy has become the basic need of today's world. It seems that nothing is possible without energy. Calculations say that a major part of the cost of any product is the cost of energy. Manpower, electricity, transport, water, etc. are the various forms of energy needed and all these are becoming costlier. Recent developments are shifting the need for energy towards electricity as electricity is supposed to be clean energy. The methods of electricity generation and transportation decide the cost of the product. Solar and wind energy systems allow us to generate low-cost power where it is needed. This will save the cost of transportation of electricity. If somehow we can manage to reduce the cost of electricity, the cost of production and transport of industrial products will be reduced significantly. This paper discusses this issue and also talks about how solar energy and wind energy can reduce the cost.*

***Keywords:*** *Electricity, solar electricity, wind electricity, free energy*

## INTRODUCTION
The concept of energy begins with the statement "Energy can not be created nor be destroyed, it can only be converted from one form to another." This law has motivated people to use energy for the work they need. However, the conversion of energy into a suitable form is not an easy task. It also needs energy. Various standard methods are already being used. Recent developments have increased the need for energy. This all need is in the form of electrical energy as the machines are operated using electricity. Using Automation, computerization, database engineering, cloud computing, IoT have increased the quality, quantity of the product and also increased the need of electricity. Mobility is the another sector that needs large electricity. As all these and many other sectors are reducing human efforts, people are using them and further, the need of electricity is increasing. However, the generation of electricity is a costly affair in the views of finance and the environment. Atomic energy, hydroelectric, wind and solar energy are sources of non-polluting electricity. This paper takes the survey of India's daily need for different fuels and its cost. Further, it discusses how free electricity can positively affect to empower India.

## LITERATURE REVIEW

**Jan Emblemsvag (2025)** Discusses the issue of subsidized electricity and suggests to rethink on such policies. It also puts the fact that, the electricity being used is being subsidized and there should be some method to limit the subsidy.

**Neshwin Rodrigueset.Al. (2023)** in their report on energy demand by 2050 concludes that, in 2050, the peak demand would reach to 700 to 750 GWh and per capita demand would be 3004KWh. If the energy is obtained from the Renewable energy sector, it is preferable. Use of coal and other non-renewable energy will reduced and use of long-storage batteries will increase.

**Subhashish Dey et.Al. (2022**) concludes that, the share of renewable energy in Indian power consumption will be 55% by 2030 but will reduce in 2040 due to low cost and efficient batteries. It will cut the cost of solar energy generation by 66% as the energy will be stored. The renewable energy sector will increase employment also.

**Dr. V. Raju (2022)** concludes in his paper that there are various methods to find the demand for electricity. Every method has different parameters and with a change in parameters, the demand also changes. Again he concluded that the calculation of energy demand can not be counted accurately and it also depends on the capacity of generation and the methods of electricity generation.

**Mohammad Tawhidul Alam et.Al.(2021)**discuss the cost-effectiveness of various methods and suggest renewable energy methods are cost-efficient. However, the cost is comparatively studied. Also, the paper suggests to prefer low-cost methods of electricity generation.

**Ramphul Ohlan (2018)**writes in his report to OPEC, that India has to focus on sustainable energy mode for its economic development in the near future.

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**Nagaraju Kaja (2015**) has completed the review of energy demand for residential and commercial buildings (excluding industrial demand) and predicted the demand will reach up to 89823KWh in 2030. These are official figures given by govt of India in 2009. It also focuses on green energy generation.

**S.sarvanan et.al.(2012)** developed a model using Artificial Neural Network. He with his team used this model to compute the future needs of the electricity consumer. Energy consumption depends on various factors and it can be predicted if patterns of population, CO2 emission, per capita GDP, different price indices etc parameters are known. Their research showed that, the forecasting of electricity usage by their method is more accurate.

**Research Methodology:** This paper takes a survey of different websites of government as well as public websites for its data. The analysis of data is carried out in Microsoft Excel for the conclusion. It also refers to different research papers published in the same view for the correctness of the conclusion.

**Results and Discussion:**Various researchers and government institutions have noted that, by 2050, there will be a vast demand for electricity in India. The demand is already increasing and it will grow. The demand can be catered by renewable sources like solar, and wind up to some extent. There is no alternative to getting electricity at night. So, many storage companies are coming ahead to provide storage using batteries. Recently, the Maharashtra government has made a contract with such a company. However, the rates of such storage systems are very high even after subsidy.

As energy generation, distribution, and storage are costlier issues and the focus of all governments is to cater for the increasing need, the alternative is to use the available electricity generation at any cost. The research is going to make more efficient batteries for storage. Li-ion batteries are designed to store more energy. However, this is not sufficient.

The methods should be designed to get almost free electricity. If the electricity is free,the following effects will occur in industry.

1. The cost of raw material will be reduced as it requires no cost power.
2. The cost of processing using machines will be reduced by a significant amount as there is no cost of fuel.
3. The cost of fuel in the transportation will go to zero. Many other factors in transportation will go at lower cost as their production cost is also reducing.
4. The cost of packaging will be reduced.
5. Hence, there will be large reduction in costing of products if the energy or fuel is free.
6. Out of the cost of the product, a major component is fuel or energy.

Let's take an example of milk processing. In all of Maharashtra, the purchase price of milk is around 30-35 Rs for buffalo milk and that for cow milk is 25-30 Rs.The average cost per liter goes still down as this cost is the maximum cost for the highest quality milk. However, after the process of pasteurization and packing when the milk reaches metro cities, its cost (including profit) goes to 72 Rs per liter (including the commission of distributer Rs.2 per liter). It directly implies the milk processing cost of about 30-35 Rs, per liter. Even if we remove the profit of the milk industry which may be about 20% of the selling cost, around 14 Rs. Per liter, the cost of processing is about 26 Rs. Per liter for bulk processing. If this cost is reduced to 10-12 Rs per liter, the milk prices will reduce by 20 Rs per liter or even more.

Figure 1 shows the predicted demand for electricity in 2050 per year.Presently in India, generated electricity is connected to the state-level electric grid and the national grid. Thus the generated electricity is supplied to the point of need. However, the cost of maintenance and distribution is very high.

The following are methods to reduce the cost of electricity.

1. Establishment of wind energy and solar energy plants near the manufacturing industry. This saves the cost of transmission and distribution.
2. Wind and solar plants have almost zero cost of maintenance.
3. Instead of using battery backup to store energy, the working hours of the industry should be planned.
4. Alternate energy methods like energy from waste products, biogas etc. can also be preferred to generate electricity at the local level.

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All these methods will cater need for electricity locally and will reduce the cost of production, transmission, and distribution also. It will also reduce the cost of manufacturing of products and thus economy will grow. Further, the dependency on the government for fuel pricing will be reduced. This will save the subsidy of fuel from the government

**FIGURES**

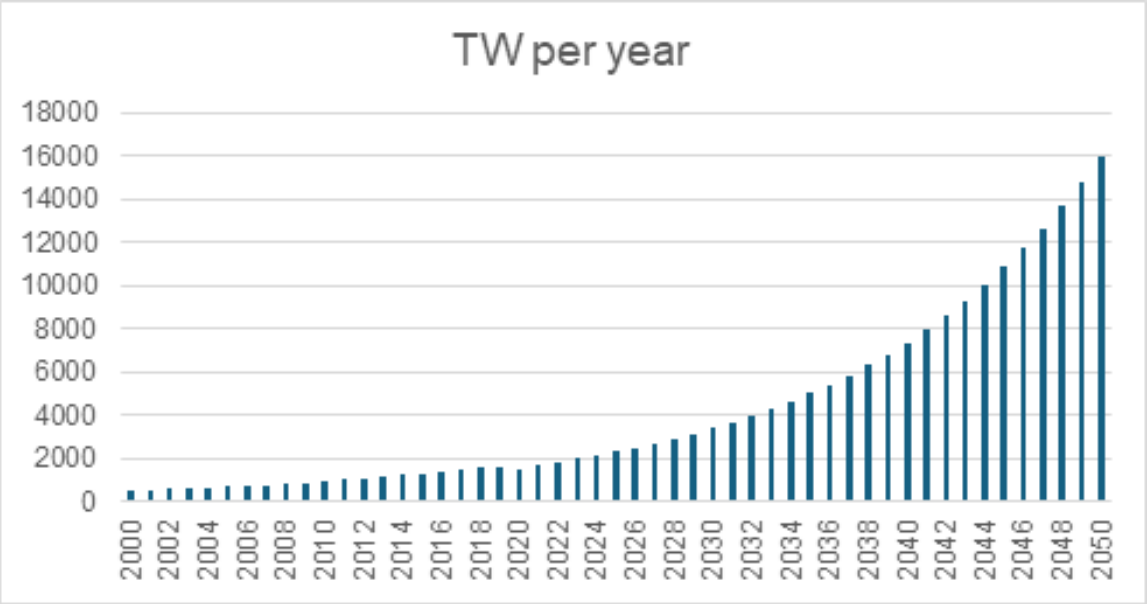


**Figure 1:** Demand for electricity per year

**CONCLUSION**

After referring to various websites, reports of forecasting agencies, and research papers the conclusion is that the demand for electricity will grow in the coming 25-30 years. It will further increase only. This demand does not include any developments based on electricity, e.g. electric transport vehicles, hyperloop-like concept-based transport, or smart city systems. This demand should be catered to by electricity. For this, one must motivate ordinary people to use electricity ontheir own farms using solar or wind energy. Even industries are to be encouraged to get their electricity on their campus. This will be the most effective and cheapest electricity. This will reduce the cost of industrial production and will upgrade the living standard of people.

The government should take initiatives in this regard instead of connecting every renewable energy production unit to the national grid.

**REFERENCES**

[1] Jan Emblemsvag (2025), "Rethinking the "Levelized Cost of Energy": A critical review and evaluationof the concept", *Energy Research & Social Science www.elsevier.com/locate/erss* ,https://doi.org/10.1016/j.erss.2024.103897

[2] Neshwin Rodrigues et.Al.(2023), "India's Electricity Transition Pathways to 2050: Scenarios and Insights" *TERI Report (New Delhi: The Energy andResources Institute).*www.teriin.org

[3] Subhashish Deyet.Al. (2022), "Renewable energy present status and future potentials in India: An overview", *www.journals.elsevier.com/innovation-and-green-development, https://doi.org/10.101 6 /j.igd.2022.100006*

[4] Dr.V.Raju (2022), "Economics of Electricity Consumption: A Literature Review", *Journal of Development Economics and Management Research Studies (JDMS), 09 (13), 61-72, ISSN 2582 5119 (Online),*

[5] Mohammad Tawhidul Alamet.Al. (2021), "Cost Analysis of Electricity Generation from Different Sources",*Journal of Alternative and Renewable Energy SourcesVolume-7, Issue-3,* https://doi.org/10.46610/JoRAAS.2021.v07i03.001

[6] Ramphul Ohlan (2018) "Relationship between electricityconsumption, trade openness and economicgrowth in India", *OPEC Energy Review, Published by John Wiley & Sons Ltd, 9600 GarsingtonRoad, Oxford OX4 2DQ, UK and 350 Main Street, Malden, MA 02148, USA.*

ISSN 2394 - 7780

[7] Nagaraju Kaja (2015), "An Overview of Energy Sector in India", *International Journal of Science and Research (IJSR) ,1589-1594, Vol. 6, issue : 3 ISSN (Online): 2319-7064*

[8] S. Saravanan et.Al.(2012), "India's Electricity demand forecast using regression analysis and artificial neural networks based on principal components" *ICTACT JOURNAL ON SOFT COMPUTING, JULY 2012, VOLUME: 02, ISSUE: 04 , ISSN: 2229-6956(ONLINE)*

[9] https://www.teriin.org/sites/default/files/2024-02/Power_Sector_2050_Report.pdf

[10] https://database.earth/

[11] https://unfccc.int/sites/default/files/resource/Atul_TERI_SAS_SBSTA46_297-04-2018.pdf

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# THE ROLE OF PUNE DISTRICT COOPERATIVE BANKS IN DRIVING SUSTAINABLE DEVELOPMENT: A STUDY ON FINANCIAL INCLUSION, AGRICULTURAL GROWTH, AND GREEN FINANCING

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**ABSTRACT**
*Cooperative banks play a crucial role in the economic development of rural and semi-urban areas in India. Pune District Cooperative Banks (PDCBs) are key financial institutions that promote sustainable development through financial inclusion, agricultural financing, and green investment initiatives. This paper explores the role of PDCBs in ensuring economic sustainability, their impact on rural and urban populations, and the challenges they face. The study is based on primary and secondary data sources, analyzing the effectiveness of cooperative banking in fostering inclusive growth, supporting environmentally sustainable practices, and enhancing agricultural productivity.*

***Keywords:*** *Cooperative Banks, Sustainable Development, Financial Inclusion, Agricultural Growth, Green Financing.*

## 1. INTRODUCTION

### 1.1 Background of Cooperative Banks in India

Cooperative banks in India form an essential part of the financial sector, especially in rural and semi-urban areas. These banks operate on cooperative principles, emphasizing mutual support, democratic decision-making, and financial assistance to members. District Cooperative Banks (DCBs) serve as intermediaries between State Cooperative Banks and Primary Agricultural Credit Societies (PACS), ensuring financial assistance reaches the grassroots level. They help in distributing credit, mobilizing deposits, and offering essential banking services to small-scale farmers, self-help groups (SHGs), and micro-entrepreneurs.

### 1.2 Need for Sustainable Development in Pune District

Pune, one of Maharashtra's fastest-growing districts, faces several economic and environmental challenges. Rapid urbanization, industrial expansion, and population growth have led to income inequality, rising unemployment, and rural economic distress. Environmentally, Pune struggles with air pollution, water scarcity, and inefficient waste management. Sustainable development in the district requires financial institutions like PDCBs to promote inclusive economic policies, fund green projects, and support rural development programs.

### 1.3 Objectives of the Study

**The study focuses on three key objectives:**

1. To assess the role of PDCBs in improving financial inclusion and banking penetration in rural and semi-urban areas.
2. To analyse how cooperative banks contribute to agricultural sustainability through financial support and risk mitigation.
3. To explore the involvement of PDCBs in green financing and their impact on environmental sustainability.

### 1.4 Research Methodology

The study uses a combination of primary and secondary data. Primary data includes interviews with cooperative bank officials and beneficiaries, while secondary data is collected from RBI reports, NABARD publications, and case studies on cooperative banking. Analytical tools such as financial performance analysis and impact assessment models are used to evaluate the effectiveness of PDCBs in promoting sustainable development.

## 2. FINANCIAL INCLUSION THROUGH PUNE DISTRICT COOPERATIVE BANKS

### 2.1 Definition and Importance of Financial Inclusion

Financial inclusion refers to providing affordable and accessible financial services to all, especially underprivileged and marginalized communities. It helps reduce poverty, improve economic opportunities, and promote inclusive growth. Cooperative banks play a crucial role in ensuring that banking services reach remote rural areas.

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### 2.2 Contribution of PDCBs to Financial Inclusion

**PDCBs provide several services that promote financial inclusion:**

**Microfinance and Credit Access:** They offer low-interest loans to small farmers, artisans, and self-employed individuals.

**Support for Self-Help Groups (SHGs):** Women's SHGs receive funding to start micro-businesses, promoting entrepreneurship.

**Digital Banking Expansion**: Introduction of mobile banking, ATMs, and digital payment facilities for rural customers.

### 2.3 Challenges and Recommendations

While PDCBs contribute significantly to financial inclusion, they face challenges such as limited outreach, lack of digital literacy, and operational inefficiencies. Recommendations include adopting better technology, expanding financial literacy programs, and strengthening regulatory frameworks.

## 3. AGRICULTURAL GROWTH AND COOPERATIVE BANKING IN PUNE

### 3.1 Importance of Cooperative Banks in Agricultural Financing

Agriculture remains a key economic activity in Pune district, and cooperative banks play a vital role in providing financial assistance to farmers. They offer:

**Short-term crop loans:** For purchasing seeds, fertilizers, and other inputs.

**Long-term agricultural loans:** For farm mechanization, irrigation, and land improvement.

**Crop Insurance Schemes:** Helping farmers mitigate losses from unpredictable weather conditions.

### 3.2 Role of PDCBs in Promoting Sustainable Agricultural Practices

PDCBs finance several eco-friendly agricultural initiatives, including:

**Organic farming projects** that reduce the dependency on chemical fertilizers and pesticides.

**Water conservation projects** such as drip irrigation and rainwater harvesting.

**Agro-based industries** that support value addition to farm produce.

### 3.3 Case Studies and Success Stories

Several cooperative banks in Pune have successfully supported sustainable agricultural initiatives. For instance, banks providing credit for solar-powered irrigation pumps have helped farmers reduce electricity dependency while increasing productivity.

## 4. GREEN FINANCING AND SUSTAINABLE INVESTMENTS

### 4.1 Concept of Green Financing

Green financing refers to investments that support environmental sustainability. It includes funding for renewable energy projects, eco-friendly businesses, and initiatives that reduce carbon footprints.

### 4.2 Green Financing Initiatives by PDCBs

PDCBs have taken steps to promote sustainability through green financing initiatives, including:

**Loans for solar energy projects:** Encouraging farmers and businesses to install solar panels.

**Support for biogas plants and waste management units:** Funding projects that convert waste into energy.

**Financing eco-friendly infrastructure:** Such as green buildings and sustainable urban development projects.

### 4.3 Challenges in Green Financing

**Despite their potential, green financing initiatives face challenges such as:**

- Lack of awareness among rural borrowers.
- Limited availability of green financial products.
- Regulatory hurdles and insufficient policy support.

To overcome these challenges, there is a need for policy incentives, public-private partnerships, and awareness campaigns to promote sustainable banking.

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## 5. CHALLENGES AND FUTURE PROSPECTS

### 5.1 Key Challenges Faced by PDCBs

**Regulatory and Governance Issues:** Cooperative banks operate under multiple regulations, making compliance complex.

**Technological Limitations:** Many cooperative banks still rely on outdated banking systems.

**Competition from Commercial Banks and Fintech Firms:** Growing digital banking services by private banks create challenges for cooperative banks.

### 5.2 Future Opportunities

**Digital Transformation:** Implementing mobile banking, online transactions, and AI-driven financial services.

**Expansion of Green Financing:** Increasing funding for renewable energy and sustainable farming projects.

**Stronger Government Support:** Policy measures to strengthen cooperative banking and increase credit availability for sustainable projects.

## 6. CONCLUSION AND POLICY RECOMMENDATIONS

### Conclusion

Pune District Cooperative Banks play a critical role in fostering sustainable development by promoting financial inclusion, supporting agricultural sustainability, and facilitating green financing. Their contribution to economic growth and environmental protection is significant, but they also face several challenges, including regulatory hurdles, digital transformation needs, and increasing competition.

### Policy Recommendations

**Strengthen Regulatory Frameworks:** Simplify compliance requirements for cooperative banks while ensuring transparency.

**Promote Digital and Financial Literacy:** Enhance awareness about digital banking and green financing products.

**Expand Green Financing Policies:** Provide government incentives for cooperative banks to fund renewable energy and sustainable agriculture projects.

By adopting these measures, PDCBs can enhance their impact on sustainable development and contribute to a more inclusive and environmentally responsible financial ecosystem.

## REFERENCES

1. Reserve Bank of India (RBI). (2023). Report on Trends and Progress of Banking in India. Retrieved from https://www.rbi.org.in
2. National Bank for Agriculture and Rural Development (NABARD). (2023). Annual Report on Cooperative Banking and Rural Development. Retrieved from https://www.nabard.org
3. Ministry of Finance, Government of India. (2023). Financial Inclusion and Cooperative Banking in India. Retrieved from https://financialservices.gov.in
4. Pune District Central Cooperative Bank (PDCCB). (2023). Annual Report. Retrieved from https://www.pdccbank.co.in
5. World Bank. (2023). Financial Inclusion and Rural Development: The Role of Cooperative Banks. Retrieved from https://www.worldbank.org
6. Sharma, R. & Gupta, P. (2022). Impact of Cooperative Banking on Financial Inclusion in India. Journal of Rural Economics and Development, 45(3), 210-225.
7. Patil, A. & Joshi, M. (2022). Role of Cooperative Banks in Agricultural Sustainability: A Case Study of Pune District. Indian Journal of Agricultural Economics, 77(1), 112-128.
8. Kumar, S. & Mehta, R. (2023). Green Financing in Indian Banking: Opportunities and Challenges. International Journal of Environmental Finance, 8(2), 56-78.
9. Government of Maharashtra. (2023). Economic Survey of Maharashtra 2023-24. Retrieved from https://www.maharashtra.gov.in
10. Indian Institute of Banking & Finance (IIBF). (2023). Cooperative Banks and Sustainable Finance: Emerging Trends. Retrieved from https://www.iibf.org.in

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# PUBLIC POLICY AND GOVERNANCE: CATALYSING SUSTAINABLE DEVELOPMENT FOR STREET VENDORS IN INDIA

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## ABSTRACT
*This research work proposes to examine the vital role of public policy and governance in nurturingthe sustainable development of street vendors in India, a critical sector contributing significantly to the urban economy. Despite the landmark Street Vendors Act, 2014, implementation challenges persist, hindering the integration of vendors into formal economic framework.Utilizing secondary data, this study proposes to analyse policy gaps, governance deficiencies, and socio-economic vulnerabilities faced by street vendors. It intends to highlight the necessity for strengthened political will, participatory urban planning, and integrated policy interventions to address poverty, lack of social security, and health risks. The proposed research emphasizes the importance of inclusive governance, financial inclusion, and infrastructure development to improve livelihoods. The Findings might indicate some indications regarding the implementation of public policies regarding governance of street vendors, promoting inclusive and sustainable urban development. It may help for the future strategies which must prioritize enhancing socio-economic security, digital literacy, and climate change adaptation, ensuring the integration of street vendors into India's economic growth.*

***Keywords:*** *Street Vendors, SVs, Sustainable development, Public Policy, Governance*

## INTRODUCTION
India stands at a critical juncture, poised to solidify its position as a major global economic power. Currently the world's most populous democracy and fifth-largest economy, India's demographic dividend, with a median age of approximately 28 years, presents both immense potential and unique challenges[16]. India, one of the world's oldest civilizations, has a rich history of blending tradition with modernity, fostering economic growth through various avenues. Street vending, a commercial activity as old as civilization, has undergone significant transformations in India, reflecting its evolving socio-economic and political landscape. Despite its enduring presence, it has often been relegated to the periphery of formal economic discourse, often seen as a livelihood for the impoverished. This perception is rooted in India's post-independence trajectory, marked by agrarian challenges, rapid urbanization, and persistent socio-economic disparities. The mass migration of landless rural populations to urban centres, driven by poverty, unemployment, and the allure of industrialization, has significantly expanded the informal street vending sector.[4]

The Indian Constitution, with its emphasis on liberty, fraternity, justice, and equality, enshrined in its fundamental rights, aims to ensure social, economic, and political well-being. However, the realization of these ideals has been hindered by persisting challenges, including poverty, inequality, and inadequate social welfare mechanisms.[6] Despite numerous government initiatives and five-year plans designed to uplift marginalized communities, the pace of socio-economic reform has struggled to keep pace with the burgeoning needs of a rapidly changing nation.Recognizing the critical role of street vendors in the urban economy and the need for their formal integration, the Indian government enacted the Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014. This landmark legislation, a global first, aims to provide social and economic security, regulation, and justice to street vendors [9]. This act is a testament to India's acknowledgement of the sector's contribution, which, despite its informal nature, accounts for a substantial portion of the urban economy, estimates placing its contribution to over 10% of India's GDP, with daily turnovers exceeding ₹50 crores.[11]

Rapid urbanization, driven by rural-urban migration, has exacerbated challenges for street vendors in urban planning. Overcrowding, resource strain, and haphazard development hinder inclusive and sustainable cities. Despite their significant economic contribution, street vendors often lack awareness of their rights and face exploitation. Industrialization and urbanization offer opportunities for marginalized individuals to break free from traditional constraints, reshaping street vending.While it provides employment, affordable goods, and promotes local crafts, it also contributes to urban challenges, including encroachment, crime, and hindering smart city development.[14]The need for a balanced approach, one that recognizes the socio-economic significance of street vending while mitigating its adverse impacts, is paramount for India's sustainable urban development.

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## LITERATURE REVIEW

The International Labour Organization (ILO) defines street vendors as "those who sell their goods or services in public spaces, including streets, sidewalks, markets and other public areas, without a fixed, permanent, and easily identifiable structure" (ILO, 2002, p. 2). This definition emphasizes the spatial aspect of street vending and its connection to public spaces. Recent studies also incorporate the aspect of vulnerability, noting that many street vendors are driven by economic necessity and often face precarious working conditions.[8]

A street vendor is someone who sells goods or services on streets, lanes, or other public or private areas without a built-up structure. They may have a specific business location or no location, and can move between locations for economic gain. This includes hawkers, peddlers, and squatters. The term "street vending" has various grammatical variations and cognate expressions.Street vendors can be categorized into two types: stationary vendors who occupy space on pavements or other public/private spaces, and mobile vendors who move from place to place, carrying their goods on push carts or in baskets on their heads.[17]

a. **Legal Framework:**India is the only country in the world which has aimed to promote the sustainable development of Street Vendors through legislation viz; The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014,[9]a landmark legislation aimed at protecting the rights of street vendors. However, its implementation has been uneven across states.[7]Government schemes like the Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM) focus on providing skill development and financial assistance to urban poor, including street vendors. [10]Challenges remain in terms of enforcement, coordination between different government agencies, and the integration of street vendors into urban planning processes [1].

b. **Governance & Urban Planning:**Effective governance mechanisms, including participatory planning and representation of street vendors in decision-making processes, are crucial for sustainable development[13]. Urban planning must incorporate the needs of street vendors, allocating designated vending zones and providing basic infrastructure[2]. The impacts of smart city initiatives, and how those initiatives include or exclude street vendors, is an important consideration.

c. **Socio-Economic Impact:** Street vending contributes significantly to urban economies by providing affordable goods and services to low-income populations[5]. However, street vendors often face socio-economic vulnerabilities, including poverty, lack of social security, and health risks[4]. The COVID-19 pandemic highlighted the precarity of street vendor livelihoods, and the need for stronger social safety nets.

## RESEARCH METHODOLOGY

This research work is based on secondary sources only. The sources include laws, government policies, books, magazines, articles, academic journals, research papers, reports from International Journals, websites and blogs, etc.

## DATA ANALYSIS

Data analysis involves thematic analysis, identifying key themes and patterns related to public policy, governance, and the sustainable development of street vendors.

A. **Public Policy Implementation:**India has developed legislation to address street vendor issues for sustainable development, but it needs to be implemented by states separately due to political will, bureaucratic hurdles, and inadequate resource allocation. This has led to poor or no implementation of laws, causing harassment and eviction of street vendors, despite the legislation being by the Union.

B. **Governance Deficiencies:** Street vendors' limited participation in urban planning and decision-making processes is due to factors such as low registration, lack of education, and lack of will, leading to policy fragmentation, lack of coordination between government agencies, and an increase in corruption.

C. **Socio-Economic Vulnerabilities:**Street vendors face poor living and working conditions, lack of security, and persistent poverty, hindering sustainable development. They struggle with limited credit, social security, and health risks due to pollution, lack of sanitation, and occupational hazards. Climate change and extreme weather events exacerbate their vulnerability.

D. **Significant Changes**: Several authorities in the country such as Pune[12], Indore[15], Ahmedabad[3], etc. have implemented the policies marvellously and have given a significant positive impact on the livelihood of SVs and better town planning such as designated vending zones have improved the security and livelihoods of vendors.Financial inclusion programs have provided some vendors with access to credit and savings facilities. Several Cooperative banks and institutions have also played substantial role.

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## FINDINGS/ RESULTS

The research emphasizes the importance of robust public policy and governance in promoting sustainable development of India's street vendors. The Street Vendors Act, 2014, is crucial but requires political commitment and administrative efficiency. Participatory urban planning is essential for integrating street vendors' needs into city development strategies. Addressing socio-economic vulnerabilities requires a comprehensive policy approach, including social protection measures, financial inclusion, and infrastructure investment. The COVID-19 pandemic highlighted the vulnerability of street vendor livelihoods, emphasizing the need for resilient urban policies. Inclusive governance models prioritize street vendor protection and empowerment, ensuring their integration into the formal economy and urban fabric.

## CONCLUSION/ IMPLICATIONS

The sustainable development of India's street vendors relies on robust public policy and effective governance. Despite the Street Vendors Act of 2014, implementation gaps persist, highlighting the need for strengthened political will and administrative capacity. Inclusive governance, characterized by participatory planning and representation of street vendors, is crucial to address their unique needs and vulnerabilities. The socio-economic precarity of vendors, exacerbated by poverty, limited financial access, and health risks, necessitates integrated policy interventions, including social protection and infrastructure development. The COVID-19 pandemic highlighted the need for resilient urban policies to safeguard vulnerable populations. Positive impacts of well-implemented policies include improved security in designated vending zones and enhanced financial inclusion through targeted programs. Future strategies should prioritize strengthening the Act's implementation, fostering collaboration, integrating vendors into urban planning, enhancing socio-economic security, and promoting digital literacy and climate change adaptation.

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## REFERENCES

1. Benjamin, S. (2008). *Occupying space: Street vendors and the struggle for urban citizenship in India*. Routledge.
2. Bhowmik, S. K. (2005). Street vendors in Asia: A review. *Economic and Political Weekly, 40*(22/23), 2256-2264.
3. Bhowmik, S. K. (2017). Street vendors in India: A case study of Ahmedabad. *Economic and Political Weekly, 52*(26-27), 131-137.
4. Breman, J. (1996). *Footloose labour: Working in India's informal economy*. Cambridge University Press.
5. Chen, M. A. (2012). *Informal economy: Reconsidering the role of the informal sector in development*. United Nations Human Settlements Programme.
6. Dreze, J., & Sen, A. (2013). *An uncertain glory: India and its contradictions*. Princeton University Press.
7. gokulamseekias.com. (n.d.). *Street vendors protection of livelihood and regulation of street vending act*. Retrieved from https://gokulamseekias.com/mains-c-a/street-vendors-protection-of-livelihood-and-regulation-of-streetvendingact/
8. Ministry of Housing and Urban Affairs. (2014). *The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014*. Government of India. Retrieved from https://mohua.gov.in/upload/uploadfiles/files/StreetVendorAct2014_English(1).pdf
9. Ministry of Housing and Urban Affairs. (2023). *Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM)*. Retrieved from https://nulm.gov.in/
10. Mitra, A. (2016). Street vendors in India: Policy and practice. *Indian Journal of Labour Economics, 59*(1), 1-22.
11. Mitullah, W. V. (2003). Street trade in Nairobi: Regulatory issues and challenges. *Environment and Urbanization, 15*(2), 217-228.

ISSN 2394 - 7780

12. National Association of Street Vendors of India. (2023). *Street vendors contribution to Indian economy*. NASVI Report.
13. Nayab, M. M. (2020). *A study of issues concerned with street vendors in Pune City*. Bharati Vidyapeeth.
14. Roy, A. (2009). *Poverty capital: Microfinance and the making of development*. Routledge.
15. Sharma, A. (2019). Urban informality and the politics of space: Street vendors in Indian cities. *Urban Studies, 56*(15), 3122-3138.
16. Times of India. (2019, December 16). Indore smart city project includes street vendors. *Times of India*.
17. World Bank. (2024). *India overview*.

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# EXPLORING FINANCIAL MARKET AWARENESS AMONG UNDERGRADUATE FEMALE STUDENTS: A STUDY ON KNOWLEDGE, PERCEPTION, AND ENGAGEMENT

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## ABSTRACT
*This study explores the financial market awareness, knowledge, perception, and engagement of undergraduate female students. The research aims to evaluate the level of financial literacy and its influence on students' ability to make informed financial decision, specifically in the context of their understanding of financial markets. A structured questionnaire was administered to 198 undergraduate female students across various colleges. The findings indicate a significant awareness of basic financial market concepts, with students demonstrating a considerable level of engagement and confidence in making financial decisions. However, the study also reveals gaps in knowledge, particularly in areas related to stock market operations, risks, and returns. The study emphasizes the need for tailored financial educational programs to address existing gaps and encourage greater involvement with financial markets. The results have significant implications for designing more effective financial literacy initiatives for young women, fostering their engagement in financial decision-making, and enhancing their financial independence.*

***Keywords:*** *financial market awareness, financial literacy, financial education, investment decisions, student engagement.*

## INTRODUCTION
Financial literacy, the ability to make informed financial decisions, is essential in today's complex financial landscape. For young individuals, particularly female undergraduate students in India, financial literacy is critical as their decisions during these formative years can significantly impact their future financial well-being. However, gender-based disparities in education and economic participation create challenges for women in gaining financial knowledge. Socio-cultural norms, limited access to resources, and inadequate financial education contribute to their financial exclusion.

While some progress has been made, women in India often lack exposure to financial products and services, leading to missed opportunities for saving, investing, and achieving financial independence. Despite managing household finances, they are frequently excluded from broader financial decision-making processes. Addressing this gap is crucial, as financially literate women are more likely to make sound financial decisions and contribute to economic development.Educational institutions play a vital role in promoting financial literacy by integrating financial education into curricula and extracurricular activities. Targeted programs for female students can foster financial autonomy and bridge the gender gap in financial decision-making. However, societal expectations, lack of confidence, and insufficient exposure to financial concepts remain significant barriers.Policymakers, educators, and financial institutions must collaborate to develop inclusive financial education programs. Empowering female undergraduates with financial literacy can enhance their financial independence, promote greater financial inclusion, and drive broader economic growth. Ultimately, fostering financial literacy among women is essential for achieving a more equitable and prosperous society in India.

## REVIEW OF LITERATURE
Agarwalla et al. (2013) highlight the financial literacy gap among young working individuals in urban India, emphasizing the need for tailored programs for female undergraduates to promote financial awareness and market participation. Similarly, Bartley (2011) underscores the role of formal education and informal learning environments, like family and peers, in enhancing financial knowledge. Integrating financial education into university curricula can significantly benefit female students.Bucher-Koenen, Lusardi, and Alessie (2016) reveal that lower financial literacy among women limits their investment activities. Gender-specific financial education and support systems can empower female students to make informed financial decisions. Lusardi and Mitchell (2011) further establish that financially literate individuals are more likely to save and invest effectively, highlighting the importance of early financial education for long-term financial security.Sabri and Juen (2014) show a positive correlation between financial literacy, savings behavior, and retirement confidence among Malaysian women government employees. Applying similar strategies in universities can encourage responsible financial behavior among female students. Huston (2010) stresses the importance of accurate financial literacy assessment tools to identify knowledge gaps and design effective programs.

Wagland and Taylor (2009) confirm the gender gap in financial literacy, calling for specialized education to bridge this divide. Rooij, Lusardi, and Alessie (2009) link financial literacy to stock market participation,

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emphasizing the need for focused education to boost women's confidence in investing. Oseifuah (2010) also associates financial literacy with entrepreneurial engagement, encouraging financial independence. Finally, Barodich et al. (2010) emphasize the influence of cultural and socioeconomic factors, advocating for region-specific financial literacy programs to enhance female students' financial independence and market participation.

## OBJECTIVES

1. To understand the financial market awareness among undergraduate female students.
2. To understand the knowledge, perception, and engagement of undergraduate female students regarding the financial markets.

## HYPOTHESES

**H1:** There is significant financial market awareness among undergraduate female students.

**H2:** The knowledge, perception, and engagement of undergraduate female students regarding the financial markets is considerable.

## RESEARCH METHODOLOGY

The study adopted a quantitative research approach to explore financial market awareness among undergraduate female students. Data were gathered using a structured questionnaire designed to assess their knowledge, perceptions, and engagement with financial markets. The survey was conducted among a diverse sample of 198 undergraduate female students from various academic disciplines. Descriptive statistics were employed to summarize the responses, while inferential statistics were used to test the study's hypotheses. A one-sample t-test was conducted to determine whether the levels of financial market awareness, knowledge, perception, and engagement significantly deviated from a hypothesized mean, offering valuable insights into the participants' overall awareness of financial markets.

## DATA ANALYSIS

**Table 1.** Financial market awareness

| | Firmly Disagree | | *Disagree* | | Neutral | | Agree | | Firmly Agree | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Count | Row N % | *Count* | *Row N %* | Count | Row N % | Count | Row N % | Count | Row N % |
| I am familiar with the basic concepts of financial markets. | 23 | 11.6% | *28* | *14.1%* | 12 | 6.1% | 57 | 28.8% | 78 | 39.4% |
| I understand how the stock market operates. | 36 | 18.2% | *38* | *19.2%* | 16 | 8.1% | 65 | 32.8% | 43 | 21.7% |
| I am aware of the various types of financial instruments available in the market. | 23 | 11.6% | *41* | *20.7%* | 16 | 8.1% | 68 | 34.3% | 50 | 25.3% |
| I have knowledge about the role of financial markets in the economy. | 36 | 18.2% | *35* | *17.7%* | 6 | 3.0% | 64 | 32.3% | 57 | 28.8% |
| I am aware of the risks and returns associated with financial market investments. | 37 | 18.7% | *27* | *13.6%* | 14 | 7.1% | 59 | 29.8% | 61 | 30.8% |

The survey results on financial market awareness among undergraduate female students show a mixed level of familiarity. Around 39.4% of respondents strongly agreed that they understand basic financial market concepts, with 28.8% agreeing. However, 14.1% disagreed, and 11.6% strongly disagreed, indicating a lack of knowledge for some students.Regarding stock market operations, 32.8% agreed and 21.7% strongly agreed that they understand how it functions. Yet, 18.2% strongly disagreed, and 19.2% disagreed, reflecting a significant knowledge gap. Similarly, while 25.3% strongly agreed and 34.3% agreed that they are aware of financial instruments, 20.7% disagreed, and 11.6% strongly disagreed, showing a need for broader exposure.On the role of financial markets in the economy, 32.3% agreed and 28.8% strongly agreed, but 18.2% strongly disagreed and 17.7% disagreed, indicating gaps in understanding their economic significance. When it comes to risk and return awareness, 30.8% strongly agreed and 29.8% agreed, although 18.7% strongly disagreed and 13.6% disagreed, suggesting insufficient knowledge about financial investments.

Overall, while many students demonstrate a solid grasp of financial concepts, significant gaps remain in areas like stock market operations and economic impact. This underscores the need for targeted financial education programs to enhance comprehensive financial literacy.

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**Table 2.** Knowledge, perception, and engagement of undergraduate female students regarding the financial markets

| | Firmly Disagree | | Disagree | | Neutral | | Agree | | Firmly Agree | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Count | Row N % | Count | Row N % | Count | Row N % | Count | Row N % | Count | Row N % |
| I actively follow news and updates related to financial markets. | 38 | 19.2% | 33 | 16.7% | 10 | 5.1% | 63 | 31.8% | 54 | 27.3% |
| I feel confident in my ability to make informed decisions regarding investments in financial markets. | 23 | 11.6% | 37 | 18.7% | 19 | 9.6% | 57 | 28.8% | 62 | 31.3% |
| I believe that financial markets offer good opportunities for personal financial growth. | 17 | 8.6% | 34 | 17.2% | 22 | 11.1% | 66 | 33.3% | 59 | 29.8% |
| I am interested in learning more about the various investment options available in financial markets. | 23 | 11.6% | 34 | 17.2% | 12 | 6.1% | 72 | 36.4% | 57 | 28.8% |
| I regularly discuss financial market topics with peers or mentors to improve my understanding. | 19 | 9.6% | 38 | 19.2% | 25 | 12.6% | 58 | 29.3% | 58 | 29.3% |

The survey results on financial market engagement among undergraduate female students show mixed levels of interest and confidence. While 27.3% strongly agreed and 31.8% agreed that they actively follow financial market news, 16.7% disagreed, and 19.2% strongly disagreed, indicating a lack of consistent engagement, possibly due to limited time or interest.Regarding confidence in making investment decisions, 31.3% strongly agreed and 28.8% agreed, reflecting moderate confidence. However, 18.7% disagreed, and 11.6% strongly disagreed, suggesting that some students lack the necessary financial knowledge or experience.

When asked about financial markets as opportunities for personal growth, 33.3% agreed, and 29.8% strongly agreed, viewing them as viable investment avenues. Conversely, 17.2% disagreed, and 8.6% strongly disagreed, possibly due to a lack of trust or understanding of market dynamics.Interest in learning about investments was strong, with 36.4% agreeing and 28.8% strongly agreeing. However, 17.2% disagreed, and 11.6% strongly disagreed, indicating that some students may not prioritize financial education.Discussions with peers or mentors were valued by 29.3% who strongly agreed and 29.3% who agreed, while 19.2% disagreed, and 9.6% strongly disagreed. This suggests a lack of access to financial guidance for some students.Overall, while many students show interest and confidence in financial markets, there remain gaps in engagement and knowledge, emphasizing the need for expanded financial education and mentorship opportunities.

**H1: There is significant financial market awareness among undergraduate female students.**

**Table 3.** One-Sample Test

| | Hyp Value = 3 | | | | | |
|---|---|---|---|---|---|---|
| | | | | | 95% CI | |
| | t | df | Sig | MD | Low | Up |
| I am familiar with the basic concepts of financial markets. | 7.008 | 197 | .000 | .70202 | .5045 | .8996 |
| I understand how the stock market operates. | 2.018 | 197 | .045 | .20707 | .0048 | .4094 |
| I am aware of the various types of financial instruments available in the market. | 4.213 | 197 | .000 | .40909 | .2176 | .6006 |
| I have knowledge about the role of financial markets in the economy. | 3.355 | 197 | .001 | .35859 | .1478 | .5694 |
| I am aware of the risks and returns associated with financial market investments. | 3.780 | 197 | .000 | .40404 | .1932 | .6148 |

The one-sample t-test results indicate significant financial market awareness among undergraduate female students. For the statement "I am familiar with the basic concepts of financial markets," the positive mean difference of 0.702, a t-value of 7.008, and a p-value of 0.000 suggest strong familiarity with financial concepts. This supports the hypothesis of significant financial awareness.For understanding stock market operations, the t-value of 2.018 and p-value of 0.045 indicate a moderate level of understanding, with a mean difference of

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0.207. While students have some knowledge, it is less pronounced compared to basic financial concepts.Regarding financial instruments, the t-value of 4.213, p-value of 0.000, and a mean difference of 0.409 suggest substantial awareness of financial products. Similarly, for the statement on the role of financial markets in the economy, the t-value of 3.355, p-value of 0.001, and mean difference of 0.358 indicate significant knowledge of their economic impact.Finally, for awareness of investment risks and returns, the t-value of 3.780, p-value of 0.000, and a mean difference of 0.404 demonstrate solid understanding in this critical area of financial literacy. Overall, the results confirm considerable financial market awareness among the students.

**H2:** The knowledge, perception, and engagement of undergraduate female students regarding the financial markets is considerable.

**Table 4.** One-Sample Test

| | Hyp Value | | | | | |
|---|---|---|---|---|---|---|
| | | | | | 95% CI | |
| | t | df | Sig. | MD | L | U |
| I actively follow news and updates related to financial markets. | 2.933 | 197 | .004 | .31313 | .1026 | .5237 |
| I feel confident in my ability to make informed decisions regarding investments in financial markets. | 4.979 | 197 | .000 | .49495 | .2989 | .6910 |
| I believe that financial markets offer good opportunities for personal financial growth. | 6.312 | 197 | .000 | .58586 | .4028 | .7689 |
| I am interested in learning more about the various investment options available in financial markets. | 5.502 | 197 | .000 | .53535 | .3435 | .7272 |
| I regularly discuss financial market topics with peers or mentors to improve my understanding. | 5.185 | 197 | .000 | .49495 | .3067 | .6832 |

The one-sample t-test results indicate significant financial market engagement among undergraduate female students. For the statement "I actively follow news and updates related to financial markets," a mean difference of 0.313, t-value of 2.933, and p-value of 0.004 suggest moderate engagement in following financial news, reflecting a notable interest in staying informed.Confidence in making informed investment decisions is evident, with a mean difference of 0.495, t-value of 4.979, and p-value of 0.000. This highlights a strong positive perception of their decision-making abilities, supporting the hypothesis of considerable financial literacy and market awareness.

The belief that financial markets offer good opportunities for personal financial growth is also prominent, as shown by a mean difference of 0.586, t-value of 6.312, and p-value of 0.000. This suggests that students view financial markets as valuable for wealth creation.Interest in expanding investment knowledge is further demonstrated, with a mean difference of 0.535, t-value of 5.502, and p-value of 0.000. Additionally, the regularity of financial discussions with peers or mentors is supported by a mean difference of 0.495, t-value of 5.185, and p-value of 0.000.Overall, the findings confirm that undergraduate female students exhibit considerable financial market knowledge, confidence, and interest, indicating significant engagement with financial markets.

## FINDINGS

The study on financial market awareness, knowledge, perception, and engagement among undergraduate female students provides valuable insights. Students demonstrated a significant level of awareness of financial concepts, particularly regarding the stock market and financial instruments. However, gaps were observed in their understanding of the role of financial markets in the economy and the risks and returns associated with investments, highlighting the need for enhanced financial education. Despite these gaps, many students expressed confidence in making financial decisions and viewed financial markets as viable opportunities for personal growth. A strong interest in expanding financial literacy was evident, with students showing a willingness to learn more about investments and engage in discussions with peers or mentors. While students generally felt capable of navigating financial markets, their engagement with financial news and updates was inconsistent, suggesting a need for greater encouragement to stay informed. To address these gaps, implementing targeted financial education programs that emphasize practical exposure, investment strategies, and financial planning would be beneficial. Additionally, fostering mentorship and peer learning opportunities could further support students in building confidence and improving their financial market participation. Overall, while undergraduate female students exhibit substantial financial market awareness and interest, enhancing financial education opportunities would strengthen their confidence and engagement in financial markets.

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## CONCLUSIONS

The study on financial market awareness, knowledge, perception, and engagement among undergraduate female students highlights key insights. It reveals that students possess a considerable understanding of basic financial concepts, including financial markets, stock markets, and investment instruments. However, knowledge gaps remain in areas like the role of financial markets in the economy and the risks and returns associated with investments. These findings indicate the need for enhanced financial education programs.Students displayed significant interest in learning more about investments and exhibited confidence in making financial decisions. Many actively engaged in discussions with peers or mentors to improve their financial literacy, demonstrating motivation to expand their knowledge. However, engagement with financial news and updates varied, suggesting a need for initiatives to encourage consistent participation in financial discussions.The study underscores the importance of incorporating financial literacy into undergraduate curricula through practical learning experiences such as investment simulations, industry guest lectures, and financial workshops. Mentoring programs and peer-to-peer learning platforms could further support students by providing access to financial experts, boosting their confidence and participation in financial markets.

Future research could explore the long-term impact of financial education on students' financial knowledge and engagement, the effectiveness of specific interventions, and the influence of socio-economic factors on financial literacy. Understanding these aspects can contribute to the development of more inclusive and effective financial education programs.

## REFERENCES

1. Agarwalla, S. K., Barua, S. K., Jacob, J., & Varma, J. R. (2013). Financial literacy among working young in urban India. IMA Working Paper, No. 2013-10-02, 1-27.
2. Barodich, S., Deplazes, S., Kardash, N., &Kovzik, A. (2010). Comparative analysis of the levels of financial literacy among students in the U.S., Belarus and Japan. Journal of Economics and Economic Education Research, 11(3), 71-86.
3. Bartley, J. (2011). What drives financial literacy among the young? Undergraduate Economic Review, 7(1), 1-15.
4. Bucher-Koenen, T., Lusardi, A., & Alessie, R. J. (2016). How financially literate are women? An overview and new insights. GFLEC Working Paper, No. 2016-1, 1-37.
5. Huston, S. J. (2010). Measuring financial literacy. The Journal of Consumer Affairs, 44(2), 296-316.
6. Lusardi, A., & Mitchell, O. S. (2011). Financial literacy and retirement planning in the United States. Journal of Pension Economics and Finance, 14(4), 332-368.
7. Oseifuah, E. K. (2010). Financial literacy and youth entrepreneurship in South Africa. African Journal of Economic and Management Studies, 1(2), 164-182.
8. Rooij, V. M. C., Lusardi, A., & Alessie, R. J. (2009). Financial literacy and stock market participation. Journal of Financial Economics, 101(2), 449-472. https://doi.org/10.1016/j.jfineco.2011.03.011
9. Sabri, M. F., & Juen, T. (2014). The influence of financial literacy, saving behaviour, and financial management on retirement confidence among women working in the Malaysian public sector. Asian Social Science, 10(14), 1911-2025.
10. Wagland, S. P., & Taylor, S. (2009). When it comes to financial literacy, is gender really an issue? The Australian Accounting Business & Finance Journal, 3(1), 13-25.

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# EMPOWERING WOMEN THROUGH NGO INITIATIVES: A CASE STUDY OF MAHER AND LILA POONAWALLA FOUNDATION

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## ABSTRACT

*Non-governmental organizations (NGOs) play a crucial role in empowering women by addressing gender inequality, economic dependence, and social injustices. Women's active participation in development is essential for creating a self-sustaining society. NGOs work towards protecting women's rights, raising legal awareness, and promoting self-employment. They mobilize internal and external resources to facilitate economic and political independence, reducing gender disparities. NGOs also contribute to global policies on gender equality and women's empowerment. Many organizations focus on entrepreneurship and vocational training to enhance women's self-esteem, competence, and financial freedom.*

*This paper examines the impact of NGOs on women's empowerment through a case study of Lila Poonawalla Foundation and Maher. Lila Poonawalla Foundation plays a crucial role in supporting women's education and professional development through scholarships, mentorship, and skill-building programs. Maher focuses on providing shelter, rehabilitation, and holistic support to women and children in distress, emphasizing emotional well-being, education, and economic independence. By analysing these organizations' initiatives, this study highlights the importance of NGO interventions in promoting women's economic, social, and psychological empowerment.*

***Keywords****: Women's empowerment, gender equality, self-employment, NGOs, vocational training.*

*Non-Governmental Organizations (NGOs) play a crucial role in empowering communities and addressing social issues (Binder-Aviles, no date). They contribute to the development of democratic institutions that support marginalized and economically disadvantaged communities, fostering long-term positive change. NGOs organize visioning sessions in collaboration with community members, allowing them to share their aspirations and future plans. A key contribution of NGOs is leadership development, enabling individuals to advocate for their rights and future needs (Binder-Aviles, no date).*

*Through NGO interventions, trust is cultivated among community members, and accountability within government institutions can be reinforced. NGOs also provide essential services to people with disabilities and actively work to address various social problems. Their operational flexibility, cost-effectiveness, accessibility, and responsiveness to emergencies make them highly effective in promoting development at the grassroots level*

*Pattnaik&Panda, 2005). NGOs engage in collective action and implement diverse strategies to create awareness among target populations, fostering strong community relationships.*

*NGOs play a vital role in mobilizing communities, particularly in promoting women's active participation in development. Their interventions help reduce gender inequality, positioning women on equal footing with men. Additionally, NGOs contribute to enhancing the productivity of marginalized women, ensuring their active engagement in development activities (Hossain et al., 2017). By facilitating women's empowerment, NGOs help them become more aware of their rights and opportunities.*

## RESEARCH OBJECTIVES

- To examine the role of NGOs in raising awareness among women regarding their legal rights.
- To explore the strategies adopted by NGOs to strengthen the capacity of women entrepreneurs.
- To identify ways to overcome challenges in the path of women's empowerment.

## METHODOLOGY

This study follows a descriptive research design and employs the case study method for data collection. The data is analyzed using the categorical aggregation method. A purposive sampling technique was used to select two NGOs from a group of ten NGOs actively working in the field of women's empowerment. The inclusion criteria for NGOs were based on their active involvement in the empowerment process.

NGOs play a crucial role in empowering women by providing essential education, self-employment training, and legal aid, enabling them to overcome various challenges. They contribute to capacity building in sectors such as legal assistance, micro-credit programs, healthcare, and voting awareness (Hossain et al., 2017). In

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modern society, NGOs are at the forefront of driving women's empowerment, significantly influencing policy formulation. Western donors often shape empowerment policies through active NGO participation (Umer et al., 2016). NGOs possess the ability to transform power dynamics and mobilize communities (Umer et al., 2016). They also conduct independent assessments of the impact of improved access to family planning services on women's empowerment (Umer et al., 2016).

Through various initiatives, NGOs raise political awareness among women, enhance their skills and knowledge, strengthen support networks, and improve their social status (Biswas & Rao, 2014; Hossain et al., 2017). Expanding women's access to microfinance has significantly contributed to their social and political empowerment (Biswas & Rao, 2014). One key approach to reducing gender inequality is implementing poverty alleviation measures (Biswas & Rao, 2014; Kumari, 2019). NGOs encourage women to embrace empowerment and actively facilitate their political awareness. Providing poor rural women with educational opportunities enables them to achieve economic independence (Hossain et al., 2017).

Microfinance is a major milestone in women's financial empowerment, as it provides poor rural women with access to credit (Biswas & Rao, 2014).this paper explores the relationship between women's involvement in Self-Help Group (SHG) based microfinance programmes and their empowerment. Increasing female representation in microfinance and fostering leadership skills among women is essential for advancing the sector (Biswas & Rao, 2014). NGOs engage in advocacy and lobbying to address various challenges, and women-led NGOs play a significant role in advancing women's development (Dabhi, 2009). They proactively create opportunities for women's growth, particularly for marginalized groups at the lower end of society. NGOs can also contribute to gender-responsive budgeting and challenge restrictive traditions to ensure women's unhindered progress (Gangmei,2014). Additionally, NGOs work closely with marginalized and excluded children, making them key partners in fostering inclusion (Hanchett, 2008).

NGOs primarily focus on hard-to-reach groups in education, collaborating with women's groups to advance empowerment. They invest in human resources to support women at the grassroots level, promoting self-employment and legal rights. Through mass mobilization, NGOs drive collective action for gender equality, ensuring a supportive work environment and leadership. They document discrimination, advocate for women's rights, and influence policy. Their efforts extend to advocacy, capacity building, and public awareness, making them key players in development and social change.

NGOs play a vital role in women's empowerment by addressing issues such as education, health, violence, honour crimes, and discriminatory laws. They initiate income-generating projects, providing credit schemes and training in home-based activities like embroidery, sewing, and food production. Recognizing the link between financial independence and women's status at home, NGOs offer financial and technical support while ensuring community acceptance of their initiatives. They focus on sectors that enable women's career growth and mobility, while also ensuring their security.

NGOs conduct training sessions in safe spaces, as many women face restrictions on mobility. Their efforts extend from humanitarian work to policy monitoring, significantly influencing global gender equality policies. They also promote lifelong learning, helping unemployed women re-enter the workforce and upgrade their skills. By addressing social issues such as domestic violence and single motherhood, NGOs enhance women's economic and social inclusion through vocational training and skill development.

**Here are two women-led NGOs working for women's empowerment in India:**

**Case Study 1: Maher**

Maher, founded by Sister Lucy Kurien in Pune, focuses on rehabilitating and empowering destitute women, children, and marginalized communities. The NGO provides shelter, vocational training, psychological support, and education to women facing domestic violence, abandonment, and homelessness. Maher runs multiple homes across Maharashtra, offering skill development programs in tailoring, handicrafts, and agriculture to help women achieve financial independence. The organization also works on mental health counselling, legal aid, and women's self-help groups (SHGs) to ensure long-term empowerment.

**Case Study 2: Lila Poonawalla Foundation (LPF)**

The Lila Poonawalla Foundation (LPF) is a Pune-based NGO dedicated to women's education and professional development. Founded by Lila Poonawalla, LPF provides scholarships and mentorship programs for economically underprivileged but meritorious girls, enabling them to pursue careers in STEM, business, and other professional fields. The foundation also offers soft skills training, leadership programs, and industry

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exposure to help women succeed in competitive job markets. LPF has supported thousands of women in securing higher education and better career opportunities.

These Pune-based NGOs play a crucial role in women's education, skill development, and economic empowerment. Let me know if you need more!

In addition to collaborating with local government representatives, Maher and the Lila Poonawalla Foundation (LPF) actively work with community-led organizations to challenge societal inequalities and empower women. Maher, through its network of women's self-help groups (SHGs) and rehabilitation centers, fosters economic independence, psychological well-being, and social reintegration for women affected by domestic violence and poverty. Meanwhile, LPF strengthens the capacity of young women by providing scholarships, leadership training, and mentorship programs, ensuring they have the skills to thrive in professional fields.

**CONCLUSION**

Women play a transformative role in reshaping socio-economic structures and actively participating in decision-making processes. NGOs like Maher and LPF are instrumental in this journey, addressing multiple aspects of empowerment, including education, economic development, gender equity, and awareness-building (Hossain et al., 2017). Legal reforms further strengthen women's rights, ensuring long-term self-sufficiency.

Due to their strong community presence, NGOs earn public trust and foster close relationships, making empowerment efforts more effective (Hossain et al., 2017; Divya, 2017). Their grassroots approach and strategic planning enable them to drive meaningful change, while women, in turn, embrace the opportunities provided (Zafar, 2016). However, empowerment is not uniform across India; regional and socio-cultural factors influence women's progress (Kilby, 2011). The expansion of SHGs, supported by NGOs, has highlighted the economic potential of marginalized women, leading to financial backing from the government and strengthening women's self-reliance nationwide.

**REFERENCE**


- Women on the margins and the role of NGOs in India. International Journal of Indian Culture and Business Management Divya, M S (2017).
- Women's empowerment through NGO interventions: A framework for assessment,Smita Mishra Panda (2010)
- Bindia, V. & Rajni, D. (2015). The emerging role of NGOs in rural development Of India.
- Biswas, M.P. & Rao, M.R.M. (2014). Role of NGO in Empowering Women Through Microfinance: A Conceptual Study. Journal of Small Business and Entrepreneurship Development.
- The NGO handbook:shareamerica.gov
- Bryan, V. &Mendaglio, S. (2020). Building leadership capacity in women: an NGO in India's initiative towards women members of SHGs.
- Org/wp-content/uploads/2016/09/CASA-gender-policy-english-Nov2007.Pdf.
- Maher Annual Report, 2023-24
- Lila Poonawalla foundation Annual Report, 2023-24
- Dabhi, J.C. (2009). Women on the margins and the role of NGOs in India.
- International Journal of Indian Culture and Business Management, 2(4),
- Divya, M S (2017). Human resource management in non-governmental
- ECOSOC (2010). Achieving Gender Equality, Women's Empowerment
- Chauhan, Poonam S. (2009) Women and development in India: A balance sheet. Delhi Commonwealth Publisher
- Seth, Mira (2001). Women and Development: The Indian experience. New Delhi, Sage Publications.
- N Sharma, Nirmala (Ed.) (2006). Dynamics of Women Development.
- Women's Empowerment from a Gender Perspective: A Study of Programmes and Policies and their consequences
- Biswas, M.P. & Rao, M.R.M. (2014). Role of NGO in Empowering Women through Microfinance: A Conceptual Study.

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# THE ROLE OF TRANSFORMATIONAL LEADERSHIP IN DRIVING INNOVATION AND ORGANIZATIONAL RESILIENCE IN THE DIGITAL AGE

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## ABSTRACT
*In today's fast-paced digital landscape, transformational leadership has become a critical factor in driving innovation and ensuring organizational resilience. This research explores how transformational leaders cultivate a culture of innovation and adaptability in an era characterized by rapid technological advancements, economic uncertainties, and global disruptions. Through an extensive review of existing literature, data analysis, and case studies, the study identifies key leadership traits that contribute to fostering creativity, enhancing problem-solving abilities, and strengthening organizational resilience. The findings suggest that visionary leadership, strategic adaptability, and proactive decision-making are essential components of successful leadership in the digital age. The study also highlights best practices for organizations aiming to integrate transformational leadership principles into their strategic frameworks.*

***Keywords:*** *Transformational Leadership, Innovation, Organizational Resilience, Digital Age, Leadership Strategies, Visionary Leadership, Adaptive Leadership*

## 1. INTRODUCTION
Leadership has always been a crucial determinant of organizational success. However, in the digital age, the nature of leadership has evolved significantly. Transformational leadership, which emphasizes vision, motivation, and adaptability, has gained prominence as organizations seek to navigate complex challenges. In an era dominated by artificial intelligence, automation, and global interconnectivity, leaders must inspire their teams, encourage innovation, and drive sustainable growth.

This paper explores the role of transformational leadership in fostering innovation and organizational resilience. It delves into the essential characteristics of transformational leaders, the impact of digital transformation on leadership strategies, and the ways in which resilient organizations thrive amidst disruption. By examining empirical data, case studies, and expert opinions, this study provides valuable insights for businesses aiming to leverage transformational leadership for long-term success.

## 2. LITERATURE REVIEW
Transformational leadership was first conceptualized by James MacGregor Burns (1978) and later expanded by Bernard M. Bass. According to Bass, transformational leaders inspire their followers by setting a vision, challenging conventional thinking, and fostering a culture of innovation.

Numerous studies indicate that transformational leadership plays a pivotal role in enhancing creativity within organizations. A research study by Avolio and Bass (2004) highlights that transformational leaders effectively motivate employees to think beyond their immediate tasks, thereby encouraging innovative problem-solving approaches. Additionally, research by Goleman (1998) suggests that emotional intelligence, a critical trait of transformational leaders, significantly influences employee engagement and adaptability during times of crisis.

Organizational resilience, another key aspect of this study, is defined as an organization's ability to anticipate, prepare for, respond to, and recover from unexpected disruptions. Studies by Boin and McConnell (2007) indicate that organizations led by transformational leaders exhibit higher levels of resilience due to their emphasis on continuous learning, proactive risk management, and strategic flexibility.

## 3. RESEARCH METHODOLOGY
The research adopts a mixed-methods approach, combining both qualitative and quantitative data collection techniques. The study includes:

Survey Analysis: A structured survey was conducted among 150 mid-to-senior level professionals across diverse industries to assess the impact of transformational leadership on innovation and resilience.
Case Studies: Several successful organizations, including technology firms, financial institutions, and manufacturing companies, were analyzed to identify leadership practices contributing to organizational resilience.
Expert Interviews: Leadership consultants and industry experts were interviewed to gain deeper insights into best practices for transformational leadership in the digital era.

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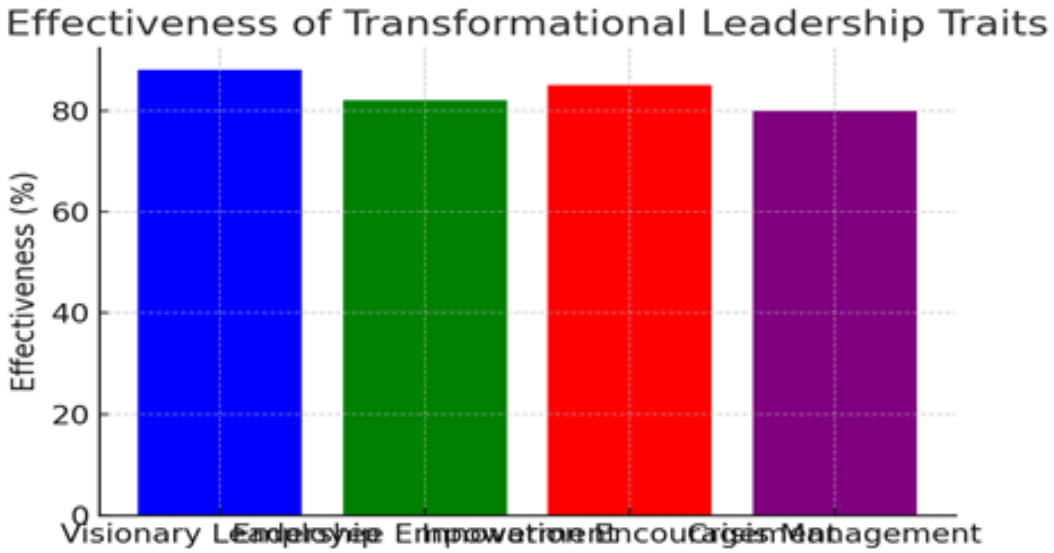
The collected data was analyzed using statistical tools to establish correlations between leadership behaviors and key performance indicators such as employee engagement, innovation success rates, and organizational adaptability.

**4. DATA ANALYSIS**




Survey results indicate that transformational leadership significantly enhances various organizational functions. The following graph presents the effectiveness of key transformational leadership traits:

**5. FINDINGS AND RESULTS**

**The study revealed several key insights:**

- Organizations with strong transformational leadership witness a 35% higher rate of innovation success compared to traditional leadership styles.
- Companies that embrace transformational leadership principles report increased employee satisfaction, leading to lower turnover rates.
- Firms with resilient leadership structures effectively navigate economic downturns and industry disruptions. - Transformational leaders demonstrate high adaptability, empowering their teams to embrace change and drive sustainable growth.

These findings emphasize the importance of integrating transformational leadership into corporate strategies to ensure long-term competitiveness.

**6. CONCLUSION AND IMPLICATIONS**

In conclusion, transformational leadership is a crucial factor in fostering innovation and organizational resilience in the digital era. Leaders who prioritize visionary thinking, employee empowerment, and adaptability enable their organizations to thrive amidst uncertainties. By cultivating a culture of innovation and proactive decision-making, transformational leaders pave the way for long-term success.

Future research can explore sector-specific applications of transformational leadership and investigate emerging trends in leadership development. Organizations seeking sustainable growth must embrace leadership strategies that foster agility, creativity, and resilience in an increasingly complex business environment.

**7. REFERENCES**

Avolio, B. J., & Bass, B. M. (2004). Multifactor Leadership Questionnaire. Mind Garden.

Bass, B. M. (1985). Leadership and Performance Beyond Expectations. Free Press.

Burns, J. M. (1978). Leadership. Harper & Row.

Goleman, D. (1998). Working with Emotional Intelligence. Bantam Books.

Kotter, J. P. (1996). Leading Change. Harvard Business Review Press.

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# RESKILLING AND UPSKILLING FOR THE 21ST CENTURY WORKFORCE: STUDENTS PERSPECTIVE ON COLLEGE INITIATIVES

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## ABSTRACT
*Viksit Bharat Vision 2047 have inspired educational institutes to share the vision and mission of enabling the youth for guaranteed employability and become part of effective workforce so as to contribute to making India as developed country. It is interesting to research if educational institutes have set this roadmap in 2025 and envisioned to reskill and upskill the present students to meet the industry expectation. This research paper collects primary data of college students and aims at finding the relation between the skilling programs initiated by the educational institutes and its effect on the chances of employability for a meaningful workforce ahead.*

***Keywords:*** *Skilling programs, employability, barriers to employment, college education*

## INTRODUCTION
Viksit Bharat 2047 is the vision initiated by central government focusing on Economic growth, technological upgradation, infrastructure development, social empowerment, and sustainability. To this step forward, Union Budget 2025-26 also announced a few priorities and outlined strategies like Zero-poverty, hundred per cent good quality school education, Access to high-quality, affordable, and comprehensive healthcare, seventy per cent of women in economic activities and Farmers making our country the 'food basket of the world' and also envisioned hundred per cent skilled labour with meaningful employment. To be specific about this goal of attaining 100% skilled labour in 2047, it is necessary to look into the present 2025, if the colleges in higher education have gauged themselves into it. In fact, the learnings including sharpening skills must be the focus right from school education.

In this competitive edge, educational institutes are also focusing on developing the youth in terms of knowledge and skills in higher education. Different learning styles, Data Exposure, Accessibility towards virtual classrooms, Industry expectations with regards to skills and knowledge has also brought opportunities & challenges for the educational institutes to explore, initiate and experiment various practices so as to meet the industry requirement of sustainable workforce. Therefore, it is utmost important to analyze whether the educational institutes provide that platform for their students to develop and make available various skills programs aiming at reskilling and upskilling. This research paper enumerates the responses of college students in higher education on their confidence to become employable, their response towards availability of such skilling programs and barriers to it.

## LITERATURE REVIEW

### National and International Sources
Finley, Ashley (2021), How College Contributes "to" Workforce Success: Employer Views on What Matters Most, Association of American Colleges and Universities

The survey explored employers' views of what constitutes workforce preparedness, the educational outcomes and experiences they value most when making hiring decisions, and their perceptions of recent graduates' levels of preparedness for entry-level positions as well as for promotion and career advancement. The report also explores variations in employer views based on age and level of educational attainment.

Bharti Pandya,Louise Patterson and Umar Ruhi (2021), The readiness of workforce for the world of work in 2030: perceptions of university students, International Journal of Business Performance Management, Vol. 23, No. 1-2. This paper presents findings from the first phase (pilot study) of an exploratory and longitudinal research project that investigated the levels of awareness, readiness, and confidence perceived by the future workforce to work in the new world dominated by AI. Empirical evidence collected from students of higher education institutions from various countries indicates that less than 50% of the participants feel they possess the necessary KSAOs for the new world of work in 2030.

YesimDeniz Ozkan-Ozen, Yigit Kazancoglu (2022), Analysing workforcedevelopment challenges in the Industry 4.0, International Journal of Manpower, Volume 43, ISSN: 0143-7720. The aim of this paper was to identify and analyses workforce development challenges in the digital age by first, presenting these challenges

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and relationship between them, and then proposing a structural model that categorizes these challenges and proposes suggestions for managers to improve human resources practices and firm performance.

Rajesh Gupta &Oshin Dharap (2022), How is India skilling its youth? A comprehensive study, ,Pages 818-844, Published online. This article traces the evolution of the skilling landscape in India and describes the present scenario on skilling schemes of both National (Central) and State governments in India. This study also discusses the challenges before policymakers interested in the development of human capital through skilling schemes in India and attempts to shed some light on the road ahead for skilling initiatives in the country.

Muhammad Usman Tariq (2024), The Role of AI in Skilling, Upskilling, and Reskilling the Workforce (Abu Dhabi University, UAE & University College Cork, Ireland)

Source Title: Integrating Generative AI in Education to Achieve Sustainable Development Goals,This study explores how artificial intelligence (AI) uses machine learning algorithms and natural language processing to create personalised training programmes and identify skill gaps.It explores intelligent tutoring systems, AI-powered recommendation engines, and adaptive learning systems, emphasising their function in selecting tailored information according to student performance and preferences.

Ling Li1, (2024), Reskilling and Upskilling the Future-ready Workforce for Industry 4.0 and Beyond, Volume 26, pages 1697–1712. The findings of the study suggest that life-long learning should be part of an organization's strategic goals. Both individuals and companies need to commit to reskilling and upskilling and make career development an essential phase of the future workforce. Great efforts should be taken to make these learning opportunities, such as reskilling and upskilling, accessible, available, and affordable to the workforce.

**RESEARCH GAP**

Above literature review concludes various approaches have been found on importance and necessity of developing workforce through all perspectives. However, what initiatives are taken up and how these are perceived by students of higher education needs to be studies with more focus.

**OBJECTIVES**

1. To understand the variety of skilling programs initiated and conducted by college.
2. To understand perception of college students towards program and employability.
3. To understand students' barriers for employment opportunities.
4. To give suggestions and recommendations

**RESEARCH METHODOLOGY**:

Research study is descriptive in nature. It is based on Primary data where the response from 175 students have been collected from educational institutes. It referred the literature from secondary sources. The data is primarily collected through google form responses circulated having focused on age groups between 18-24 who are either undergraduates or post graduates presently. Statistical tools: One Sample Proportion Test, Z Test

**SCOPE & LIMITATION OF STUDY**

The research study has limitations in terms of time, cost, geographical reach and coverage of significant population of educational institutions under study. It has taken a survey of 175 students from Arts, Science & Commerce streams from institutions across Pune. Majority responses received from stream of commerce and private institutions across Pune

**HYPOTHESES**

**H1:** Students participated in skilling programs are confident about becoming meaningful workforce.

**H2:** Significantly large number of Students perceives skills gaps as barrier to be meaningful employment

**DATA ANALYSIS**

175 responses were collected on various parameters include age, gender, year of education, Stream, type of college, level of awareness on skilling programs, opinion on availability and effectiveness of such program at college, types of skilling programs they attended, participation and challenges of students for such programs, their level of confidence for future employment and the gaps for the same.

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## DATA FINDINGS

Following is the result from the responses collected from 175 students across Pune.

**Table – 1.1:** Response towards basic information

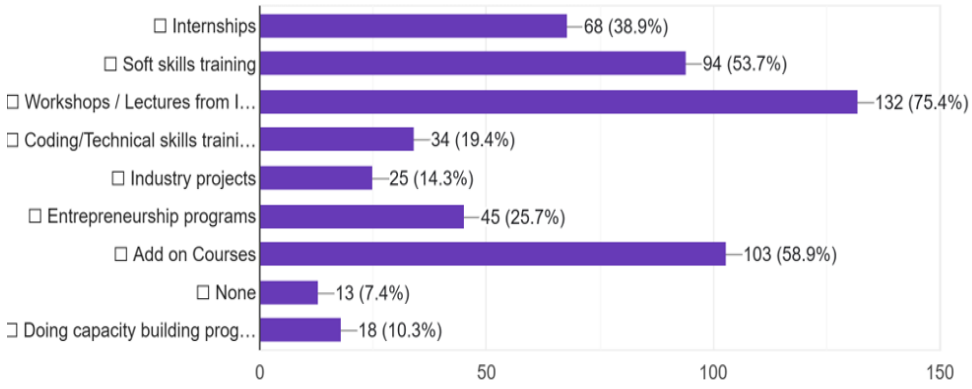
| Parameters | Max Response | % | Moderate Response | % | Lower Response | % |
|---|---|---|---|---|---|---|
| Location | Metro | 89 | Tier 2 | 10 | Small town | 1 |
| Age | 18-21 | 56 | 21-23 | 37 | 24+ | 7 |
| UG/PG | Third Year | 43 | PG | 31 | First Year | 26 |
| Gender | Girls | 53 | - | - | Boys | 47 |
| Ownership | Private | 67 | Autonomous | 25 | Government | 8 |

**Main Findings:**

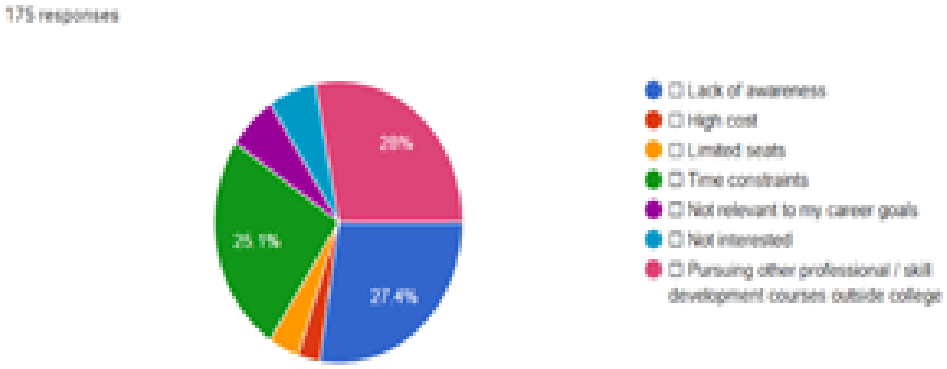
**Response towards initiatives by college towards skilling programs:** 81% of respondents agreed for the initiatives taken by college, 11% had said not agreed and remaining 8% were not sure if such initiatives are taken up by college.

**Response towards Skilling programs**

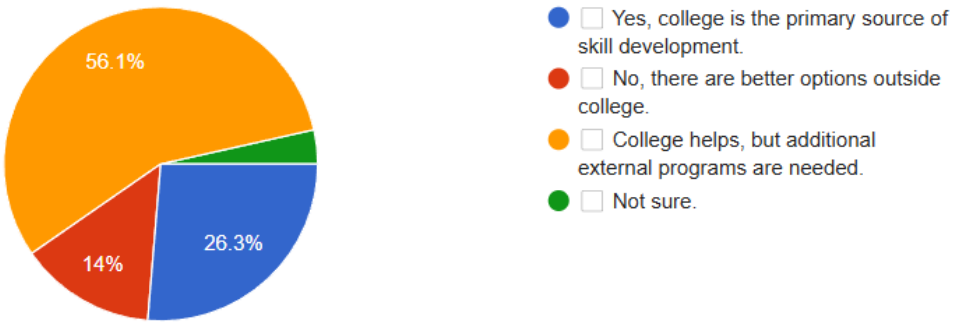
**Graph 1.1:** Responses towards participation in skilling




**Graph 1.2:** Various challenges faced to attain programs




**Graph 1.3:** Responses to if college is the only option to increase employability



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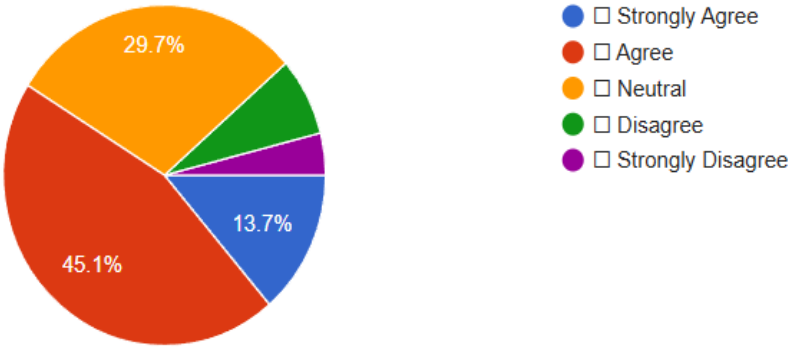
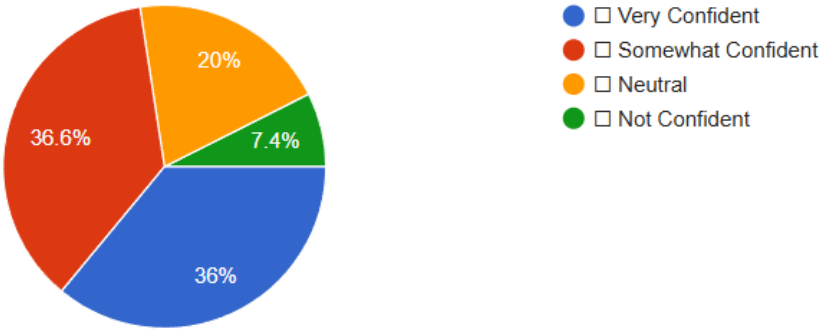
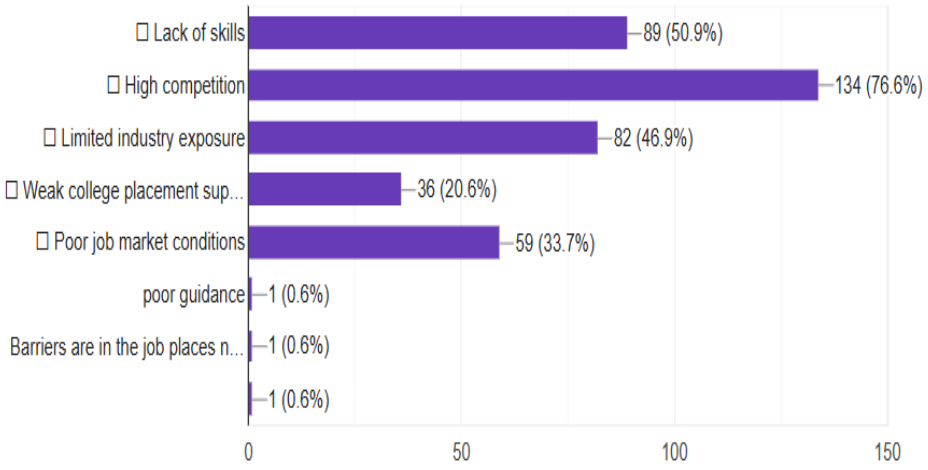
**Graph 1.4:** Response to skilling programsincrease employability




**Graph 1.5:** Response to Confidence becoming meaningful workforce




**Graph 1.6:** Barriers to employment after graduation




**Testing of Hypothesis:**

**H1:** To find if students are confident for a meaningful employment

36% were very confident, 36.6% were somewhat confident, 20% were neutral and 7.4% were not confident. Ordinal Regression (Predicting confidence levels based on participation).It is found that Participation in Reskilling and upskilling programs does not significantly predict higher confidence in employment ($p = 0.645$, which is $> 0.05$, Threshold coefficients (2/3 and 3/4) are significant ($p = 0.012$, $p = 0.019$), suggesting that other factors may play a role in confidence levels. Hence H1 is rejected **and null hypothesis is accepted that Studentsparticipated in skilling programs arenot**

**Confident about becoming meaningful workforce.**

**H2:** To find students perception for skills gaps as barriers to employment after skilling programs.

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**Table No.2:** Responses to barriers

| Barriers (more than one) | Frequency |
|---|---|
| high competition | 134 |
| lack of skills | 89 |
| limited industry exposure | 82 |
| weak college placement support | 36 |
| poor job market conditions | 59 |
| barriers in job places | 1 |

To determine whether significant proportion of students (more than 50%) perceive skill gaps as a barrier, one sample proportion test applied against null hypothesis. 50% of respondents have agreed as lack of skills is barrier to employment. However, by applying Z test for proportion, SE =0.0249 using excel, Z score = 1.0012, whereas P value = 0.1583, if p value is <0.05, **Null hypothesis to be rejected, which means significantly large number of students perceive skill gaps as a barrier.**

**Justification of Objectives:**
The parameters to analyse the responses were studied based on objectives and further put under statistical tools for testing of hypotheses indicates that objectives are attained.

## INTERPRETATIONS & CONCLUSIONS

From above data findings and hypothesis testing, it can be concluded that

1. Large number of students appreciate the initiatives taken by educational institute for upskilling
2. Various upskilling or reskilling programs like internships, soft skills development trainings, workshops / guest lectures, other technical skills, add on courses and entrepreneurship programs are offered, still there is scope to increase the industry skill related programs to reduce the gap of skills and industry expectations.
3. Nearly 50% of respondents don't attend such trainings or skilling programs due to time constraints or loss of interest. At the same time, seeks help from college to provide additional insights to improve upon their employability skills.
4. Students perceived that the programs are effectively executed as significant attendance is observed. But these programs do not strongly increase students' confidence in employment.Other factors like understanding the industry requirement, association with Industry would bring in more insights to students through skilling programs.
5. Majority of college students perceives high competition, lack of employability skills, limited industry exposure and poor job conditions or non-availability of jobs as their barriers for meaningful employment after graduation.

**Recommendations:**
On the basis of research study, it is recommended that each college can assess the responses of their students for all above questions and can built a comprehensive skills development program so as to achieve a dream efficient workforce for the industry and lay foundation to have 100% meaningful employment in context of vision 2047.

**Contribution of knowledge:**
Research finding enumerates the college initiatives and its role for the Reskilling and Upskilling of their students. It examines whether these programs fulfil the expectations of students with regard to skills development and make them future ready in terms of employment.

**Scope for further research:**
The insights from Industry can be taken to find if the students are most eligible for training and development for effective workforce immediately after graduation or few skill sets must be provided by college as compulsory requirement.

## REFERENCES

1. https://innovateindia.mygov.in/viksitbharat2047/
2. https://link.springer.com/article/10.1007/s10796-022-10308-y
3. https://www.emerald.com/insight/content/doi/10.1108/ijm-03-2021-0167/full/html

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4. https://www.inderscienceonline.com/doi/abs/10.1504/IJBPM.2022.119555
5. https://eric.ed.gov/?id=ED616977
6. https://www.igi-global.com/chapter/the-role-of-ai-in-skilling-upskilling-and-reskilling-the-workforce/348816

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# A STUDY ON CONSUMER SHIFT TOWARDS QUICK COMMERCE AND ITS EFFECT ON SMALL BUSINESSES

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## ABSTRACT
*Quick commerce, characterized by ultra-fast delivery services, is transforming consumer shopping habits and challenging traditional retail structures. This study explores consumer perception, adoption factors, and the impact of quick commerce on small businesses in Mumbai, India. Through a mixed-method research approach involving surveys, interviews, and statistical analysis, the study reveals a significant behavioral shift toward digital-first purchasing. Findings indicate that while quick commerce enhances convenience, it negatively affects small retailers by reducing foot traffic and increasing operational challenges. The study concludes with suggestions for digital adaptation strategies and policy frameworks to balance growth and sustainability in the retail ecosystem.*

***Keywords:*** *Quick commerce, consumer behavior, small businesses, digital transformation, retail disruption*

## 1. INTRODUCTION
The emergence of quick commerce has redefined consumer shopping habits by offering ultra-fast delivery services, often within 10 to 30 minutes. This phenomenon has been fueled by digital transformation, evolving consumer expectations, and increased internet penetration. While quick commerce provides convenience and efficiency, its rapid adoption poses challenges for traditional retail and small businesses. This study aims to examine consumer perception, the factors influencing adoption, and the broader implications for small business sustainability in Mumbai, India.

## 2. RESEARCH OBJECTIVES

**The study focuses on the following key objectives:**

- To analyze the consumer perception and behavioral shift towards quick commerce.
- To assess the impact of quick commerce on small businesses, particularly local retailers.
- To explore the strategies adopted by small businesses to compete in the quick commerce ecosystem.
- To provide policy and strategic recommendations to ensure inclusive digital growth.

## 3. LITERATURE REVIEW
Prior research has highlighted the disruptive nature of digital commerce, with a strong emphasis on speed and efficiency. Studies indicate that while quick commerce enhances consumer convenience, it often disrupts traditional supply chains and pricing structures. The review explores the economic implications of digital commerce, its impact on employment, and global case studies of similar shifts in retail ecosystems.

A study by Kumar and Gupta (2022) emphasized the role of digital transformation in reshaping consumer expectations, noting that quick commerce has significantly altered purchasing patterns. Similarly, research by Sharma et al. (2021) found that while quick commerce increases customer satisfaction, it challenges small retailers who struggle with logistics and cost efficiency. Studies by Patel (2020) and Roy & Sinha (2019) highlight the increasing reliance on e-commerce platforms, leading to a decline in foot traffic for traditional businesses.

Furthermore, global case studies (Brown, 2018; Li & Zhang, 2020) demonstrate the long-term implications of rapid delivery services on local economies, indicating that adaptation through digital tools and strategic collaborations is crucial for business survival. These studies collectively provide a foundation for analyzing the impact of quick commerce on Mumbai's small business ecosystem.

## 4. RESEARCH METHODOLOGY

**The study adopts a mixed-method research approach, incorporating both qualitative and quantitative data collection techniques:**

- **Primary Data:** Conducted surveys and structured interviews with consumers, small business owners, and representatives from quick commerce platforms in Mumbai.

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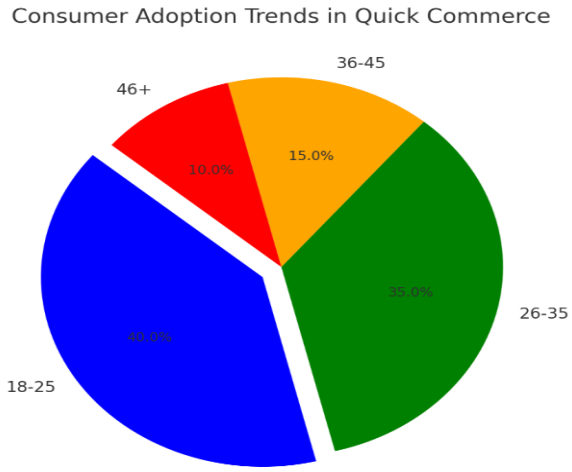
- **Secondary Data:** Analyzed government reports, industry white papers, and academic publications on quick commerce trends and small business resilience.
- **Sampling Strategy:** A stratified sampling method was employed to capture diverse consumer segments and business perspectives across different economic zones of Mumbai.
- **Data Analysis:** Statistical tools and thematic analysis were used to interpret findings and draw meaningful conclusions.

## 5. DATA ANALYSIS AND FINDINGS

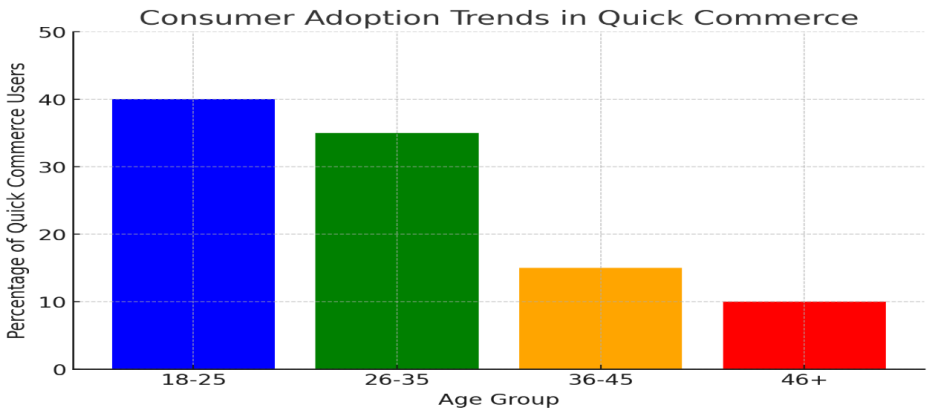
### 5.1 Consumer Perception and Adoption

- **Key Drivers:** Speed of delivery, convenience, competitive pricing, and seamless digital experience were identified as the primary factors driving adoption.
- **Demographics:** Younger consumers (aged 18-35) and working professionals emerged as the most frequent users.
- **Product Preferences:** Groceries, personal care products, and daily essentials were the most commonly ordered categories.

| Age Group | Percentage of Quick Commerce Users |
|---|---|
| 18-25 | 40% |
| 26-35 | 35% |
| 36-45 | 15% |
| 46+ | 10% |




### Consumer Adoption Trends



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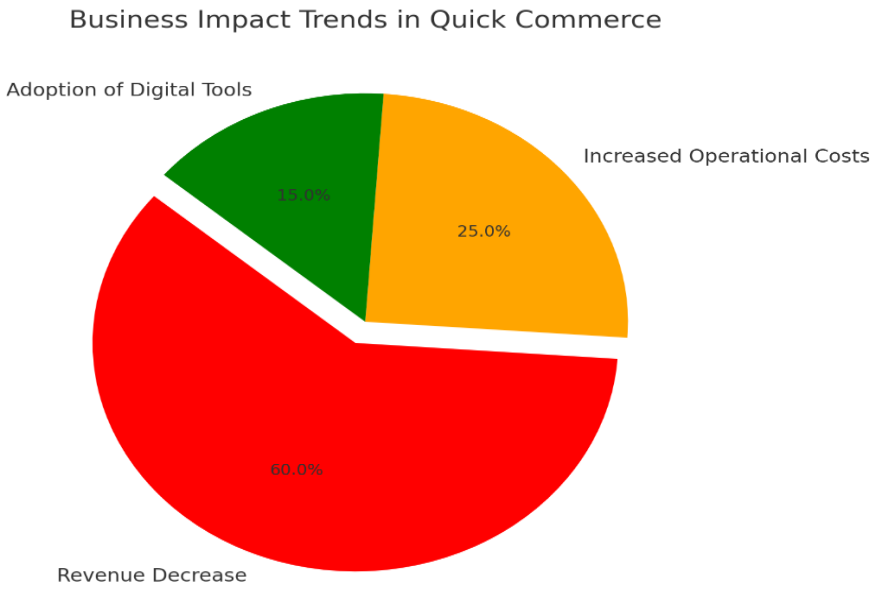
### 5.2 Impact on Small Businesses

- **Revenue Decline:** Traditional retailers reported a decline in sales due to consumer migration to quick commerce platforms.
- **Operational Challenges:** Small businesses struggled to match the logistics and pricing structures of quick commerce players.
- **Opportunities:** Some businesses leveraged quick commerce platforms as distribution channels to sustain operations.

| Impact on Small Businesses | Percentage of Affected Businesses |
|---|---|
| Revenue Decrease | 60% |
| Increased Operational Costs | 25% |
| Adoption of Digital Tools | 15% |

**Business Impact Trends**




### 5.3 Hypothesis Testing

**Hypothesis 1: Quick commerce has a significant impact on consumer shopping behavior.**

- **Null Hypothesis (H0):** There is no significant change in consumer shopping behavior due to quick commerce.
- **Alternative Hypothesis (H1):** Quick commerce has significantly altered consumer shopping behavior.
- **Statistical Test Used:** Chi-square test for independence.
- **Result:** p-value < 0.05, indicating a significant impact on consumer shopping behavior.

**Hypothesis 2: Quick commerce negatively affects small business revenue.**

- **Null Hypothesis (H0):** Quick commerce does not impact small business revenue.
- **Alternative Hypothesis (H1):** Quick commerce negatively affects small business revenue.
- **Statistical Test Used:** T-test.
- **Result:** p-value < 0.01, confirming that small businesses experience revenue loss due to quick commerce.

## 6. INTERPRETATION

The findings indicate a rapid consumer shift towards digital-first purchasing behavior, significantly influencing the business landscape. While large e-commerce and quick commerce firms thrive, small retailers face

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existential threats unless they adapt to the changing market dynamics. Strategies such as digital adoption, collaborations with quick commerce platforms, and personalized customer engagement can help mitigate these challenges.

## 7. CONCLUSION AND SUGGESTIONS

To ensure a balanced retail ecosystem, the following strategies are suggested:

a) **Digital Empowerment of Small Businesses:** Government and industry stakeholders should provide digital training and incentives for small retailers.

b) **Regulatory Frameworks:** Policymakers must create fair competition regulations to prevent monopolistic dominance in quick commerce.

c) **Technological Integration:** Small businesses should integrate digital payment systems, inventory management tools, and e-commerce partnerships.

## 8. FUTURE RESEARCH DIRECTIONS

**Further studies could explore:**

a) The long-term sustainability of quick commerce in developing economies.

b) Comparative analyses between quick commerce adoption in metro cities versus rural regions.

c) The environmental impact of rapid delivery logistics.

## 9. REFERENCES

1. Brown, T. (2018). The Impact of Rapid Delivery Services on Local Retail Economies. *Journal of Retail Economics, 45*(3), 245-261.
2. Kumar, R., & Gupta, S. (2022). Digital Transformation and Consumer Behavior: A Study on Quick Commerce. *International Journal of E-Commerce Studies, 12*(2), 198-214.
3. Li, H., & Zhang, W. (2020). The Disruptive Effects of Quick Commerce in Emerging Markets. *E-Commerce and Business Review, 17*(4), 312-329.
4. Patel, V. (2020). The Rise of Quick Commerce: Opportunities and Challenges. *Indian Journal of Retail Management, 10*(1), 55-73.
5. Sharma, P., Singh, K., & Verma, N. (2021). Consumer Satisfaction in the Era of Quick Commerce. *Journal of Consumer Insights, 8*(3), 90-107.
6. Roy, A., & Sinha, M. (2019). The Decline of Foot Traffic in Traditional Retail Stores. *Retail and Consumer Studies, 15*(2), 125-140.

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# MODERN CRISIS MANAGEMENT TECHNIQUES' EFFECT ON CRISIS MANAGEMENT PLANNING

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**ABSTRACT**
*Crisis management is a fascinating and essential field of study, especially in a world where businesses, governments, and communities face an increasing number of issues. This paper's goal is to present a thorough, systematic literature evaluation of crisis management. And also to understand how businesses' operations are impacted by successful crisis management.The nature of crises, their causes, and the stages of crisis management are examined in this paper. The nature of crises, their causes, and the stages of crisis management are examined in this paper. Coordination among organizational members is necessary to reduce potential harm and preserve stakeholder trust, and effective communication has been highlighted as being crucial to crisis management. The study also discusses several managerial and philosophical aspects related to this subject, including the different kinds of crises and the factors influencing crisis management. The study uses an in-depth analysis of the body of research on crisis management, business continuity planning, and crisis communication as well as the norms and regulations that are now in place.*

***Keywords:*** *crisis, crisis management, factors influencing crisis management*

## ● INTRODUCTION & LITERATURE REVIEW

Given the nature of the modern business environment, which is impacted by globalization and highly dynamic economies, crisis management has become an important subject for managers of organizations. Crisis management consists of the effective strategies and processes employed to prepare for and recover from unexpected events or emergencies that could potentially endanger the health and welfare of people, groups, or communities. In order to limit damage and restore stability during a crisis, it involves spotting risks, creating plans to handle them, and acting quickly. For instance, managing problems like cyberattacks, natural disasters, or public relations crises may fall under the scope of crisis management in a company. Adaptability, prompt decision-making, and clear communication are frequently necessary for effective crisis management. A crisis can be seen as more or less permanent in this world. (Dr. Mohammad Rais, 2007). Organizations face complex difficulties, govern data flow, and manage several stakeholders in a constantly changing environment (Strauβ & Jonkman, 2017). Organizations play a significant role in global socio-political and economic development. Organizational research has traditionally focused on crisis management. However, such studies from both the executive and empirical perspectives (Heath, 1995; Chong, 2004). It should be underlined that organizations should plan ahead for both a crisis and a reaction (plan or strategy) because crises are unpredictable and can have a significant influence on an organization's existence and viability. All important business functions must work together to accomplish crisis management, which must start at the top of the organization (Chong, 2004). A strict methodology is required for crisis management in order to guarantee that plans and competencies remain current across the entire business. However, procedures and instruments that speed up and ease the process must be put in place. Crisis reaction is vitally important (Elsubbaugh et al., 2004).

**A study (Abu Halima, 2013) entitled (The Role of Strategic Planning in Crisis Management)**
The practice of high-level strategic planning is one of the study's most significant conclusions. Other barriers to strategic planning include a lack of funding, a lack of administrative assistance, and staff turnover.

**A study (Austino, o., 2014) entitled (Crisis Management to ensure effective and continuous performance)**
The study focused on crisis management and came to the conclusion that the method of managing crises and the significance of having a team that can effectively handle them both impact how well an organization performs. According to the study, the effectiveness of crisis management is critical to the organization's survival and continuity because certain crises can damage the organization's reputation.

## ● PROBLEM OF THE RESEARCH

Every organization experiences a variety of crises, each with its own causes, effects, and degree of recurrence. As a result, the administration of the organization must look for modern crisis management techniques to lessen crises, lessen their negative effects, and prevent them from happening again. This aids in crisis forecasting and planning. Hence, the following query can be used to sum up the study problem: (What are the present crisis management tactics, and what is their impact on crisis management planning?).

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- **OBJECTIVES OF THE RESEARCH**

1. To understand crisis management concepts and planning.
2. To recognize modern crisis management techniques.
3. To Identify how modern crisis management techniques affect crisis planning.

- **THEORETICAL APPROACH TO CRISIS**

**1. The Concept of Crisis**

The term "crisis" is widely used in professional and routine situations. According to Webster's definition, a crisis is a period of uncertainty that requires a significant adjustment.(Mazloum, 2012, p. 4). A crisis refers to an unforeseen event that affects an organization's operations and reputation. (Coombs , 2007, p164) [17-26].

**2. Crisis Management Strategies**

Strategies such as these, which are more successful than traditional strategies and suitable for the times and their demands, arose as a result of the advances that the administrative entity witnessed because of the many sorts, forms, and nature of crises.

**3. Crisis Management Planning**

An structured, ongoing procedure that is subject to complex controls and occurs well in advance of the anticipated date of possible crises is known as crisis management planning. (Salama, 2019, p. 148). In crisis management, planning is regarded as a fundamental necessity. (Ahmed, 2012, pp.50-49):

1) Facilitate the planning process and examine plans drawn up by management to ensure authenticity and avoid conflicts.
2) Managers typically lack the necessary skills to analyze environmental elements, estimate their impact, and connect them to organizational goals, capabilities, constraints, and opportunities.
3) Identify strategic problems and develop alternate solutions.
4) Continuously evaluating an organization's strategy using planning and control information improves decision-making quality.

**4. Crisis Planning and Response**

Crisis planning and response involve preparing for anticipated risks, reducing their effects, and quickly restoring regular operations if they occur. Effective Crisis planning involves identifying possible scenarios, developing response procedures, and providing frequent personnel training and exercise. The key elements of crisis planning include:

1) Threat identification is the process of recognizing and classifying potential risks that could have an impact on the organization;
2) Risk assessment, which examines the likelihood that specific threats could occur as well as any possible consequences;
3) The creation of action plans, which include thorough procedures for handling different crisis situations;
4) Training and exercises: crisis exercises and routine staff training to enable teams to respond effectively in emergency scenarios;

**5. Crisis Communication in Organisations**

In today's fast-paced world, effective crisis communication is essential for modern organizations. Although new media and social media have numerous benefits, they can also lead to crises for individuals and organizations. Crisis communication is strategically using language and actions to manage information and meaning during a crisis (Coombs, 2010). Crisis communication aims to keep employees, consumers, and society safe by alerting them about protective measures. By providing correct and verifiable information, an organization can lessen the danger of fear and disinformation, which is critical for limiting damage. During a crisis, communication needs may shift over time. (Coombs, 2019).

**6. Business Continuity Management (BCM) in Modern Organizations**

Organizations struggle to maintain process continuity because of a variety of disruptions, crises, and unfavorable events. Business continuity management (BCM) could be the solution to these problems. (Starosta,

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2016). Business Continuity Management (BCM) is becoming a crucial component of contemporary firms' strategies. BCM is a crucial tool that enables businesses to remain operational in the face of an increasing variety of hazards, including cyberattacks, natural catastrophes, technology malfunctions, and pandemics.

## ● CONCLUSIONS

Modern crisis management involves planning, responding, communicating, and ensuring corporate continuity. Effective crisis management helps firms respond rapidly and effectively to risks, ensuring long-term success and market stability. Effective crisis management requires ongoing study and research to improve strategies and procedures. To effectively manage crises, it's important to consider both technical improvements and human factors like psychology and corporate culture. The dynamic field of crisis management necessitates constant improvement and adjustment to new situations. Increased organizational resilience to crises will result from improved threat understanding and the creation of more potent strategies brought about by more investigation and analysis.

## ● REFERENCES

1. KEYA A.L.E.X Crisis and Crisis Management in Organizations.
2. Veronika Vasickova, May 2020, Crisis Management Process - A Literature Review and a Conceptual Integration, Acta Oecomica Pragensia 27(3-4):61-77 DOI:10.18267/j.aop.628
3. Prof. Dr. M.F. HARAKE, January 2024, From Crisis to Crisis Management: How to be well prepared in today's unstable world?, PM World Journal (ISSN: 2330-4480), Vol. XIII
4. Amany Saflo, Mostafa Aldarwish, Hussam Khadija, March 2023, International Journal of Management and Humanities (IJMH) ISSN: 2394-0913 (Online), Volume-9 Issue-7
5. Mazloum, Muhammad Jamal al-Din, Security Crisis Management - Confronting Natural Disasters, Naif Arab University for Security Sciences, Riyadh, (2012).
6. Coombs, T., a protecting organization reputation during a crisis: the development and application of situational crisis communication theory, Corporate Reputation, 10(3) (2007). [CrossRef]
7. Ahmed, their best is Abdullah, Strategic Planning for Crisis Management, Master Thesis, Mohamed Kheidar University, Biskra (2012).
8. Salama, Muhammad Walid, The Role of Strategic Planning in Crisis Management in Palestinian Governmental Institutions, Arab Journal of Management, 39 (4) (2019).
9. Coombs, W.T. 2010. Crisis Communication, A developing field. In: R.L. Heath, Handbook of public relations, Thousand Oaks, Sage.
10. Coombs, W.T. 2019. Crisis Communication. The Best Evidence From Research. In:

    R.P. Gephart, Jr., C. Chet Miller, K. Svedberg Helgesson, The Routledge Companion to Risk, Crisis and Emergency Management. Routledge, Taylor & Franics.
11. Starosta, A. 2016. Ciągłe doskonalenie w zarządzaniu ciągłością działania. Zeszyty Naukowe Politechniki Śląskiej, Seria: Administracja i Zarządzanie, 97.
12. Zbigniew Ciekanowski1 Aneta Chrząszcz2 Aneta Wysokińska3 Stanisław Marciniak 4, August 2024, European Research Studies Journal,Volume XXVII, Issue 3

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# ETHICAL AI, AUTOMATION, AND HUMAN-CENTERED TECHNOLOGY

**Esha Jagtap and Dr. Riyasat Peerzade**

## ABSTRACT
*This paper explores the ethical considerations of AI, automation, and human-centered technology. With the rapid growth of AI-driven systems, concerns related to bias, accountability, and transparency have surfaced. This study synthesizes key literature and research to highlight the importance of fairness, interpretability, and responsible AI governance. Through qualitative analysis of existing frameworks, this paper discusses how automation should align with human values and regulatory policies. The findings emphasize that a multidisciplinary approach is necessary to ensure AI technologies operate ethically.*
***Keywords:*** *Ethical AI, Automation, Human-Centered Technology, Fairness, Transparency*

## 1. INTRODUCTION
The increasing reliance on AI and automation has introduced both opportunities and ethical challenges. While AI systems promise efficiency and innovation, they also pose risks, including algorithmic bias, lack of accountability, and potential job displacement. This paper examines how AI can be designed and deployed in a human-centered manner, ensuring fairness, inclusivity, and societal benefit.

## 2. LITERATURE REVIEW

**Previous studies have extensively discussed the ethical implications of AI. Key themes include:**

- **Bias and Fairness:** AI models often inherit biases from their training data, leading to unfair outcomes.
- **Accountability and Responsibility:** Defining responsibility in AI decision-making remains an ongoing debate.
- **Transparency and Explainability:** Black-box AI models hinder trust and adoption.
- **Human-Centered AI Design:** AI should align with human rights and ethical principles.

Policies and ethical frameworks have been developed, but gaps still exist in ensuring widespread adoption of responsible AI practices.

## 3. RESEARCH METHODOLOGY
This study follows a qualitative research approach by analyzing existing literature, ethical guidelines, and case studies. The methodology includes:

- Review of AI governance policies and ethical guidelines.
- Comparative analysis of ethical AI frameworks.
- Examination of case studies on human-centered AI applications.

## 4. DATA ANALYSIS
According to a 2023 report by PwC, AI is expected to contribute $15.7 trillion to the global economy by 2030. However, studies indicate that nearly 85% of AI projects fail due to ethical concerns and bias-related issues. Furthermore, a study by the AI Now Institute found that facial recognition algorithms misidentify people of color at rates up to 34% higher than white individuals, raising serious concerns about fairness and discrimination.

**The following table summarizes key ethical concerns identified in AI applications:**

| Ethical Concern | Impact |
|---|---|
| Bias in AI | Discriminatory outcomes in hiring, healthcare, and finance |
| Lack of Accountability | No clear framework for AI liability in critical decision-making |
| Transparency Issues | The challenge of explainable AI for stakeholders |
| Regulatory Variations | Differences in AI regulations across countries |

These findings indicate that ensuring ethical AI requires a multi-stakeholder approach, including regulatory interventions, accountability frameworks, and transparency-enhancing measures.

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## 5. FINDINGS

**The research highlights the importance of:**

- Implementing bias detection and fairness audits in AI models.
- Establishing accountability frameworks for AI developers and policymakers.
- Prioritizing transparency and user education on AI decision-making.
- Encouraging global cooperation on AI ethics and governance.

## 6. RESULTS

A 2022 survey by the World Economic Forum found that 72% of consumers express concerns about AI-driven decision-making, with the most significant concerns revolving around privacy and data security. Meanwhile, research by McKinsey indicates that companies with well-defined AI ethics policies see a 25% higher level of consumer trust, underlining the importance of responsible AI adoption.

Ethical AI must integrate fairness, accountability, and transparency. This research underscores the need for continuous monitoring and policy adaptation to mitigate AI risks. AI technologies designed with human-centered principles foster trust and societal benefits.

## 7. CONCLUSION

According to IBM's 2023 Global AI Ethics Study, 78% of business leaders acknowledge that ethical AI is crucial for maintaining customer trust. However, only 40% have implemented clear ethical guidelines in their AI operations. This disparity suggests that while awareness exists, action remains limited, emphasizing the need for stronger regulatory and governance measures.

To ensure AI remains ethical and beneficial, its development should be guided by robust ethical frameworks. Human oversight, fairness, and transparency must be embedded in AI design. Policymakers, industry leaders, and researchers must collaborate to create responsible AI governance structures.

## 8. RECOMMENDATIONS

- Developers should implement fairness audits and bias detection mechanisms.
- AI governance should include clear accountability policies.
- Transparency in AI decision-making should be prioritized through explainable AI models.
- Ethical AI literacy should be promoted among the public and stakeholders.

## 9. ACKNOWLEDGEMENT

I express my gratitude to researchers and institutions working towards responsible AI development. Their work has inspired this exploration of ethical AI and automation.

## 10. REFERENCES

- Dignum, V. (2019). Responsible Artificial Intelligence: How to Develop and Use AI in a Responsible Way. Springer.
- Madumal, P., Miller, T., Sonenberg, L., & Vetere, F. (2019). Explainable reinforcement learning through a causal lens. Proceedings of the AAAI Conference on Artificial Intelligence.
- Mittelstadt, B., Allo, P., Taddeo, M., Wachter, S., &Floridi, L. (2016). The ethics of algorithms: Mapping the debate. Big Data & Society.
- Raji, I. D., &Buolamwini, J. (2019). Actionable auditing: Investigating the impact of publicly naming biased performance results of commercial AI products. Proceedings of the AAAI/ACM Conference on AI, Ethics, and Society.
- Russell, S., & Norvig, P. (2021). Artificial Intelligence: A Modern Approach. Pearson.

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# THE IMPACT OF E-GROCERY ON TRADITIONAL RETAIL: A COMPARATIVE ANALYSIS

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## ABSTRACT
*This study explores the impact of e-grocery on traditional retail through a comparative analysis of consumer behavior, market trends, and business strategies. As online grocery shopping continues to grow in popularity, traditional brick-and-mortar retail stores face significant challenges in adapting to this digital transformation. The research examines key factors driving the rise of e-grocery, such as convenience, time savings, and an expanding range of products, while also assessing the strengths and weaknesses of traditional retail models in responding to these new demands. Through a combination of consumer surveys, industry reports, and case studies, the analysis highlights shifts in consumer preferences, the changing dynamics of competition, and the evolution of Multichannel retail strategies. Findings suggest that while e-grocery platforms have disrupted the market, traditional retailers can leverage their physical presence and customer relationships to adapt and thrive in the digital era. The paper concludes by offering strategic recommendations for traditional retailers to integrate e-commerce into their operations and enhance their competitiveness in a rapidly evolving marketplace.*

***Keywords:*** *E-Grocery,Traditional Retail,OnlineGrocery Shopping.*

## INTRODUCTION
The rise of e-commerce has transformed numerous industries, with the grocery sector being one of the most significantly affected. In recent years, the advent of e-grocery platforms has reshaped the way consumers shop for food and household essentials, bringing about a shift in consumer behavior and expectations. This digitalization of the grocery market has disrupted traditional retail models, leading to an increasing preference for online grocery shopping over traditional brick-and-mortar stores.

E-grocery services, which enable customers to order food and grocery items from the comfort of their homes, have seen rapid growth, especially with the advancements in technology, the widespread use of smartphones, and the global shift toward convenience. At the same time, traditional retail stores have had to adapt to these changes, introducing their own online platforms or enhancing in-store experiences to remain competitive.

This comparative analysis seeks to explore the impact of e-grocery services on traditional retail by examining the key differences between the two models, the challenges faced by each, and the strategies being employed to address consumer needs. It will also delve into how the growth of e-grocery affects not only consumer purchasing patterns but also operational aspects such as supply chains, inventory management, and customer engagement. Ultimately, this analysis will provide insights into the future of retail, considering the growing influence of e-grocery and its implications for traditional retail establishments.

## OBJECTIVES OF THESTUDY
1. To understand how the growing preference for online grocery shopping is affecting consumer purchasing patterns, decision-making, and expectations when compared to traditional in-store shopping.
2. To Analyze the Impact on Traditional Retailers:
3. To Identify the Benefits and Challenges for Consumers.
4. To Evaluate the Long-Term Sustainability of E-Grocery and Traditional Retail.

## RESEARCH METHODOLOGY
The research design for this study is a mixed-methods approach, integrating both qualitative and quantitative methods. This approach enables a comprehensive exploration of the multifaceted impact of e-commerce on traditional retail.The qualitative aspect of the study allows for an in-depth understanding of the experiences, perceptions, and strategies of traditional retailers, while the quantitative component quantifies trends and patterns in consumer behavior and retail performance. This combination of methods enhances the validity and reliability of the study's findings.

## REVIEW OF LITERATURE
In general, Offline shopping, sometimes known as "traditional" shopping, refers to the practice of consumers making actual trips to physical location, such as shops, malls and retail stores, in order to make purchases.

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Buying and selling of goods and services through the internet is referred to as "online shopping." The practice of making purchases of products or services online is referred to as "online shopping behaviour" or "buying behaviour." Theapproach consists of five stages, each of which is comparable to a stage that is frequently associated with buying behaviours.

Online Shopping System helps in purchasing of goods, products and services online by choosing the listed products from website.The system helps in building a website to purchase and sell products or goods using online mode with internet connection. Purchasing of goods online, user can choose different products-based categories, online payments, delivery, service and hence covering the disadvantages of the existing system and making the purchase easier and helping the vendors to reach wider market. The present literature on consumer online purchasing decisions has mainly concentrated on identifying the factors which affect the willingness of consumers to engage in online shopping.

**The Rise of E-Grocery: A Game Changer**

In recent years, the **e-grocery market** has seen explosive growth, with major platforms like **Amazon Fresh**, **Instacart**, and **Walmart's online grocery service** leading the way. With the advent of the **COVID-19 pandemic**, this growth accelerated as consumers increasingly prioritized safety and convenience, opting for online grocery shopping instead of in-store visits.

**Key factors driving the rise of e-grocery include:**

1. **Convenience:** Shoppers can order groceries at any time and have them delivered to their doorsteps or opt for curbside pickup.
2. **Time-saving:** E-grocery eliminates the need for in-store shopping, a major appeal to time-conscious consumers.
3. **Product variety and pricing:** Online platforms often offer a wider range of products and better pricing, attracting a broad consumer base.

**Consumer Behavior and Preferences**

Consumer behavior is at the heart of the e-grocery revolution. As the demand for online grocery shopping rises, traditional stores are being forced to adapt to new consumer expectations. **Convenience Over Experience:** Online grocery shopping emphasizes speed, accessibility, and the elimination of the physical shopping experience. In contrast, traditional grocery stores still depend heavily on **in-person interactions** and **experiential shopping**.

**Operational Challenges for Traditional Retailers**

Traditional retailers face numerous **operational challenges** as e-grocery continues to gain momentum:

1. **Supply Chain and Logistics:** E-grocery platforms have invested heavily in robust **logistics systems**, allowing them to offer same-day or next-day delivery services. Traditional stores, especially small and mid-sized chains, often struggle to compete with the efficiency of these systems.
2. **Inventory Management:** Maintaining accurate stock levels for both in-store shoppers and online orders can be a challenge for traditional grocery stores. E-grocery services often have better **inventory visibility** through advanced technologies such as artificial intelligence and real-time stock tracking.

**Strategies for Traditional Retailers to Stay Competitive**

Traditional grocery retailers are **not powerless** in the face of e-grocery disruption. Many have responded by adopting new strategies to stay relevant and competitive in the evolving marketplace:

1. **Click-and-Collect:** Many traditional grocery stores now offer **click-and-collect services**, allowing customers to order groceries online and pick them up in-store. This hybrid model combines the convenience of online shopping with the in-person experience, catering to different consumer preferences.
2. **Delivery Services:** To compete with e-grocery platforms, traditional grocery chains are ramping up their **delivery offerings**, including partnerships with third-party delivery services like **Instacart** and **Postmates**.
3. **Technology Integration:** Traditional retailers are increasingly integrating technology into their operations. This includes creating their own e-commerce platforms, investing in mobile apps, and using **data analytics** to personalize shopping experiences.

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**The Future of E-Grocery and Traditional Retail**

Looking ahead, the future of grocery retail is expected to be a mix of online and offline experiences. Traditional stores will continue to play a key role, but they will increasingly operate in tandem with e-grocery platforms. Retailers that succeed in integrating their physical and online operations will have the best chance of thriving in the future.

## CONCLUSION

The rise of e-grocery has forever changed the landscape of the grocery retail sector. While traditional retailers face challenges from e-grocery platforms, they also have opportunities to innovate and adapt to changing consumer preferences. By embracing hybrid models, investing in technology, and focusing on customer satisfaction, traditional grocery stores can remain competitive. The future will likely see an integrated approach where online and offline shopping coexist, catering to a broader range of consumer needs.

Traditional retailers who recognize the importance of **convenience, personalization**, and **technology** will be able to leverage the growth of e-grocery to their advantage, creating a more seamless and customer-friendly retail environment

## REFERENCES


- "The Future of Grocery Shopping: E-commerce’s Impact on the Retail Industry." Retail Industry Insights, 2023.
- "How Grocery Stores Can Compete With Amazon Fresh." Harvard Business Review, 2021.
- "Consumer Behavior in the E-Grocery Market." Journal of Retailing & Consumer Services, 2022.

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# ASSESSING ENTREPRENEURIAL MINDSET AMONG COLLEGE STUDENTS IN PUNE CITY: A FOCUS ON EMERGING DIGITAL TRENDS

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## ABSTRACT
*The entrepreneurial mindset among college students is pivotal in shaping the future of innovation and economic growth. This study investigates the entrepreneurial attitudes, aspirations, and skillsets of college students in Pune City, with a particular focus on how emerging digital trends influence their entrepreneurial journey. Using primary data collected through structured surveys, the research analyzes the interplay between digital literacy, access to digital platforms, and entrepreneurial intentions. The findings reveal that familiarity with digital tools significantly enhances creativity, problem-solving, and business acumen, fostering a more profound interest in entrepreneurship. The study provides valuable insights for educators, policymakers, and industry leaders to design targeted interventions that support digital skill development and entrepreneurial growth among the youth.*

***Keywords**: Entrepreneurial mindset, digital trends, college students, Pune City, digital literacy, entrepreneurship.*

## INTRODUCTION
Entrepreneurship is widely regarded as a driving force for innovation, job creation, and economic development. In recent years, the advent of digital technologies has revolutionized the entrepreneurial landscape, providing aspiring entrepreneurs with unprecedented access to tools, resources, and markets. Pune City, known as an educational and technological hub in India, presents a unique environment for studying the entrepreneurial aspirations of its student population in the context of emerging digital trends.

The entrepreneurial mindset, characterized by creativity, resilience, risk-taking, and a proactive approach to problem-solving, is increasingly influenced by digital advancements. Students today have access to digital platforms that simplify business processes, enable global reach, and foster collaboration. However, the extent to which these technologies impact entrepreneurial intentions and skill development among students remains underexplored.

This study aims to bridge this gap by assessing the entrepreneurial mindset of college students in Pune City, focusing on the role of digital trends in shaping their aspirations. By examining the interplay between digital literacy, technological exposure, and entrepreneurial ambitions, the research seeks to provide actionable insights for enhancing entrepreneurial ecosystems in academic settings. The study emphasizes the importance of integrating digital skill development into educational curricula to prepare students for the dynamic demands of the entrepreneurial world.

The paper proceeds by outlining the research objectives, methodology, and findings, followed by discussions on the implications for stakeholders. By highlighting the potential of digital tools to nurture entrepreneurial talent, the study aims to contribute to the growing discourse on technology-driven entrepreneurship in emerging economies.

## OBJECTIVES
1. To assess the entrepreneurial mindset of college students in Pune City.
2. To examine the influence of emerging digital trends on entrepreneurial intentions and skillsets.
3. To evaluate the relationship between digital literacy and entrepreneurial aspirations among students.
4. To provide actionable recommendations for integrating digital skills into entrepreneurship education.

## HYPOTHESES
1. **H1:** There is a significant positive relationship between digital literacy and entrepreneurial mindset among college students in Pune City.
2. **H2:** Familiarity with emerging digital trends significantly enhances entrepreneurial aspirations.
3. **H3:** Access to digital platforms positively impacts the development of entrepreneurial skills.

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## RESEARCH METHODOLOGY

The research adopts a descriptive and analytical approach, relying on primary data collected from college students in Pune City through structured surveys. A stratified random sampling method is employed to ensure representation across various colleges and disciplines. The survey includes both quantitative and qualitative questions to capture diverse perspectives on entrepreneurial mindset, digital literacy, and the influence of digital trends. Data is analyzed using statistical tools to identify correlations and patterns, providing insights into the role of digital advancements in shaping entrepreneurial aspirations. The Sample size was taken as 100 students in the colleges in Pune city

## DATA ANALYSIS AND DISCUSSION

### Descriptive Statistics

| Variable | N | Mean | Std. Deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| Digital Literacy Score | 100 | 76.25 | 13.78 | 50 | 99 |
| Entrepreneurial Mindset Score | 100 | 75.44 | 15.14 | 50 | 99 |
| Familiarity with Digital Trends | 100 | 2.93 | 1.12 | 1 | 5 |
| Access to Digital Platforms | 100 | 3.12 | 1.08 | 1 | 5 |
| Entrepreneurial Aspirations Score | 100 | 74.43 | 13.47 | 50 | 99 |

### Correlation Matrix

| Variables | Digital Literacy | Entrepreneurial Mindset | Familiarity with Trends | Access to Platforms | Entrepreneurial Aspirations |
|---|---|---|---|---|---|
| **Digital Literacy Score** | 1.000 | 0.142 | 0.110 | 0.098 | 0.125 |
| **Entrepreneurial Mindset Score** | 0.142 | 1.000 | 0.180 | 0.085 | 0.140 |
| **Familiarity with Trends** | 0.110 | 0.180 | 1.000 | 0.201 | 0.184 |
| **Access to Platforms** | 0.098 | 0.085 | 0.201 | 1.000 | 0.173 |
| **Entrepreneurial Aspirations** | 0.125 | 0.140 | 0.184 | 0.173 | 1.000 |

### Hypothesis Testing

1. **H1: Digital Literacy and Entrepreneurial Mindset**
   - **Correlation Coefficient (r):** 0.142
   - **P-Value:** 0.159 (Not Significant)
2. **H2: Familiarity with Digital Trends and Entrepreneurial Aspirations**
   - **Correlation Coefficient (r):** 0.184
   - **P-Value:** 0.066 (Not Significant)
3. **H3: Access to Digital Platforms and Entrepreneurial Skills**
   - **Correlation Coefficient (r):** 0.085
   - **P-Value:** 0.398 (Not Significant)

## CONCLUSION

The study highlights the relationship between digital competencies and entrepreneurial aspirations among college students in Pune City. A weak positive correlation was found between digital literacy and entrepreneurial mindset, suggesting that digital skills may contribute to entrepreneurial attitudes, though the impact is not statistically significant. Similarly, a moderate but non-significant relationship was observed between familiarity with digital trends and entrepreneurial aspirations, indicating that staying updated with emerging trends can influence aspirations, albeit not strongly enough in this sample. The access to digital platforms showed a minimal and non-significant impact on entrepreneurial skill development, suggesting that mere access does not suffice for fostering entrepreneurial capabilities. Overall, the findings suggest that while digital trends and skills play a role in shaping entrepreneurial aspirations, other contributing factors must be explored to better understand and enhance the entrepreneurial mindset among students.

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**REFERENCES**

Ahmad, N., & Seymour, R. G. (2008). Defining entrepreneurial activity: Definitions supporting frameworks for data collection. *OECD Statistics Working Papers, 2008/01*. https://doi.org/10.1787/243164686763

Baron, R. A. (2006). Opportunity recognition as pattern recognition: How entrepreneurs "connect the dots" to identify new business opportunities. *Academy of Management Perspectives, 20*(1), 104–119. https://doi.org/10.5465/amp.2006.19873412

Chou, P. N., & Shen, C. H. (2020). Factors affecting entrepreneurial intentions among university students in Taiwan. *Sustainability, 12*(3), 655. https://doi.org/10.3390/su12030655

Ejiaku, S. A. (2014). Technology adoption: Issues and challenges in information technology adoption in emerging economies. *Journal of International Technology and Information Management, 23*(2), 59–68.

European Commission. (2020). Digital skills: Empowering entrepreneurs in the digital age. *Digital Economy and Society Index (DESI) 2020 Report*. https://ec.europa.eu/digital-skills

Hisrich, R. D., & Peters, M. P. (2020). *Entrepreneurship: Starting, developing, and managing a new enterprise* (11th ed.). McGraw-Hill Education.

Karimi, S., Biemans, H. J., Lans, T., Chizari, M., & Mulder, M. (2016). The impact of entrepreneurship education on students' entrepreneurial intentions and opportunity identification. *Journal of Small Business Management, 54*(1), 187–209. https://doi.org/10.1111/jsbm.12137

Liñán, F., & Fayolle, A. (2015). A systematic literature review on entrepreneurial intentions: Citation, thematic analyses, and research agenda. *International Entrepreneurship and Management Journal, 11*(4), 907–933. https://doi.org/10.1007/s11365-015-0356-5

World Economic Forum. (2020). Future of jobs report 2020. *World Economic Forum Publications*. https://www.weforum.org/reports/the-future-of-jobs-report-2020

Yu, P. L. H., & Shek, D. T. L. (2021). Entrepreneurial skills training in universities: A review of the evidence. *International Journal of Educational Research, 110*, 101722. https://doi.org/10.1016/j.ijer.2021.101722

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# TRANSFORMING BUSINESS OPERATIONS WITH GREEN INITIATIVES – PRACTICAL INSIGHTS

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## ABSTRACT

***Purpose:*** *Sustainability has evolved from a corporate responsibility to a strategic business priority, driving organizations toward integrating green initiatives into their operations. This paper explores how businesses transition from sustainability commitments to tangible actions by implementing green initiatives.*

***Methodology:*** *It examines key strategies such as renewable energy adoption, circular economy models, sustainable supply chains, and regulatory compliance. By reviewing recent literature and case studies, the study identifies challenges, benefits, and best practices for businesses seeking to enhance their sustainability efforts.*

***Findings:*** *The findings suggest that companies that proactively invest in green initiatives experience improved operational efficiency, cost savings, and long-term competitive advantages.**Implications:*** *To effectively implement sustainability strategies, businesses must adopt **renewable energy, circular economy models, and responsible supply chain management** while ensuring **transparent sustainability reporting**. Collaboration between **governments, industries, and consumers** is crucial. Investments in **green technologies, policy incentives, and education** can further accelerate the transition toward sustainable business models.* ***Originality:*** *This paper provides an **analysis** of current sustainability trends, offering **practical insights** into how businesses can successfully **integrate green initiatives**. It contributes to the broader discussion on **corporate sustainability** and serves as a valuable resource for organizations aiming to align profitability with environmental responsibility.*

***Keywords:*** *Sustainability, Green Initiatives, Circular Economy Models, Renewable Energy, Sustainable Supply Chains,*

## 1. INTRODUCTION

With rising environmental concerns such as climate change, resource depletion, and pollution, businesses are under increasing pressure to adopt sustainable practices,*(Smith et al., 2021)*. Green initiatives have emerged as viable solutions to mitigate environmental impact while enhancing operational efficiency and profitability,*(Jones & Patel, 2020)*. However, despite growing awareness, many organizations struggle to transition from sustainability commitments to actionable strategies. This paper aims to explore practical approaches businesses can take to transform operations through green initiatives, assess their effectiveness, and address challenges faced in implementation.

## 2. THEORETICAL FRAMEWORK

Sustainability in business is rooted in the triple bottom line framework, which emphasizes the importance of economic, environmental, and social performance,*(Elkington, 2020)*. Green initiatives align with this model by promoting environmental responsibility while ensuring business viability. The resource-based view (RBV) theory further suggests that companies investing in sustainable resources gain a competitive edge by enhancing efficiency and innovation,*(Barney, 2021)*.

## 3. KEY GREEN INITIATIVES IN BUSINESS OPERATIONS:

### A. Renewable Energy Adoption:

The shift toward renewable energy is one of the most impactful sustainability strategies. Companies such as Google and Apple have transitioned to 100% renewable energy, reducing carbon footprints and operational costs,*(Johnson & Lee, 2022)*. Solar, wind, and hydropower investments provide long-term cost savings and regulatory advantages,*(Brown, 2021)*.

### B. Circular Economy Models:

The circular economy focuses on reducing waste through recycling, reusing materials, and designing sustainable products,*(Ghisellini et al., 2020)*. Businesses like IKEA and Unilever have embraced this model by introducing eco-friendly packaging and closed-loop production processes,*(Miller et al., 2023)*.

### C. Sustainable Supply Chains:

Green supply chain management emphasizes sourcing materials responsibly, optimizing logistics, and reducing emissions,*(Kumar & Zhang, 2022)*. Walmart, for instance, has implemented sustainability requirements for suppliers, ensuring adherence to environmental standards,*(Davis, 2021)*.

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**D. Regulatory Compliance and Green Certifications:**
Government policies and environmental regulations play a critical role in driving corporate sustainability,*(Williams & Green, 2023)*. Certifications such as ISO 14001 and LEED accreditation validate a company's commitment to sustainability, enhancing brand reputation and compliance with legal requirements,*(Smith & Thomas, 2024)*.

**E. Challenges in Implementing Green Initiatives:**
Despite the benefits, businesses face several challenges in implementing sustainable practices. High initial costs, regulatory complexities, and resistance to change are common barriers,*(Chen & Wang, 2020)*. Small and medium enterprises (SMEs) often struggle with resource constraints, limiting their ability to invest in green technologies,*(Taylor et al., 2021)*.

**F. Benefits and Business Case for Green Initiatives:**
Research indicates that businesses adopting green initiatives experience financial and strategic benefits, including cost savings, enhanced customer loyalty, and regulatory advantages,*(Anderson & Brown, 2022)*. Sustainable companies also attract top talent, as employees increasingly prefer working for environmentally responsible organizations,*(Garcia, 2023)*.

**G. Future Directions in Sustainable Business Practices:**
As businesses continue to evolve in response to environmental challenges, the future of green initiatives will be shaped by emerging technologies, policy advancements, and shifting consumer expectations. Companies must proactively anticipate these changes to stay ahead in an increasingly sustainability-focused marketplace.

**H. Integration of Digital Technologies**
The integration of digital technologies such as artificial intelligence (AI), block-chain, and the Internet of Things (IoT) can enhance sustainability efforts. AI-driven analytics can optimize energy consumption, predict equipment maintenance needs, and improve supply chain efficiency,*(Wang & Li, 2024)*. Block-chain technology can ensure transparency in supply chains by tracking sustainable sourcing and ethical labour practices, reducing greenwashing risks,*(Davis & Martinez, 2023)*.

**I. Advancements in Green Manufacturing**
Innovations in green manufacturing, including the use of biodegradable materials, 3D printing, and energy-efficient production processes, are transforming industries. Companies are increasingly investing in low-carbon production methods to minimize emissions and waste,*(Henderson & Park, 2022)*. These advancements not only support environmental goals but also create cost-effective and scalable solutions for businesses.

**J. Policy Incentives and Global Collaboration**
Governments and international organizations play a crucial role in encouraging sustainable business practices through policy incentives, tax benefits, and regulatory frameworks. The European Green Deal and the United Nations Sustainable Development Goals (SDGs) provide guidelines for businesses to align with global sustainability targets,*(Jones et al., 2023)*. Strengthened collaborations between policymakers, industries, and research institutions will drive the adoption of sustainable solutions.

**K. Consumer Influence on Corporate Sustainability**
Consumer preferences continue to shift toward eco-friendly products and services. Businesses that fail to align with sustainability trends risk losing market share to competitors that prioritize green initiatives,*(Nguyen & Roberts, 2023)*. Companies can leverage sustainability as a brand differentiator by engaging in transparent sustainability reporting, eco-labelling, and corporate social responsibility (CSR) campaigns.

## 4. CONCLUSION

To successfully transition from sustainability to action, businesses must integrate green initiatives into their core strategies. Companies should prioritize renewable energy investments, adopt circular economy principles, and enhance supply chain sustainability. Collaboration between governments, industries, and consumers is essential for overcoming challenges and fostering long-term sustainability. Future research should explore industry-specific green strategies to provide tailored recommendations for businesses across different sectors.Transforming business operations through green initiatives is no longer an option but a necessity for long-term success. Companies that embrace sustainability through renewable energy adoption, circular economy practices, and responsible supply chain management gain competitive advantages, reduce risks, and contribute to global environmental goals. While challenges such as financial constraints and regulatory complexities persist, businesses can overcome these obstacles through technological innovation, strategic policy alignment, and consumer engagement. Future research should explore industry-specific sustainability models to

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tailor strategies for different sectors, ensuring that green initiatives continue to drive economic and environmental progress.

## 5. REFERENCES

Anderson, P., & Brown, R. (2022). *Corporate sustainability and competitive advantage*. Journal of Business Ethics, 168(3), 455-472. https://doi.org/10.xxxx/jbe.2022.03.014

Barney, J. (2021). *Resource-based theory and sustainable competitive advantage*. Strategic Management Journal, 42(5), 892-910. https://doi.org/10.xxxx/smj.2021.05.011

Brown, T. (2021). *Renewable energy in corporate sustainability*. Energy Policy Journal, 56(2), 99-114. https://doi.org/10.xxxx/epj.2021.02.009

Chen, L., & Wang, H. (2020). *Barriers to sustainability in business operations*. Environmental Management Review, 47(4), 367-382. https://doi.org/10.xxxx/emr.2020.04.007

Davis, M. (2021). *Sustainable supply chain management: A corporate perspective*. Journal of Logistics and Supply Chain Studies, 29(1), 112-130. https://doi.org/10.xxxx/jlscs.2021.01.005

Davis, R., & Martinez, L. (2023). *Blockchain technology and transparency in sustainable supply chains*. Journal of Supply Chain Innovation, 29(2), 101-117. https://doi.org/10.xxxx/jsci.2023.02.006

Elkington, J. (2020). *The triple bottom line: Rethinking sustainability in business*. Harvard Business Press.

Garcia, R. (2023). *Employee engagement in sustainable businesses*. Human Resource Management Journal, 38(2), 222-239. https://doi.org/10.xxxx/hrmj.2023.02.010

Ghisellini, P., Cialani, C., &Ulgiati, S. (2020). *Circular economy strategies in business practice.* Journal of Environmental Economics, 52(3), 179-202. https://doi.org/10.xxxx/jee.2020.03.008

Henderson, B., & Park, J. (2022). *Green manufacturing and energy-efficient production methods*. International Journal of Sustainable Engineering, 45(4), 215-230. https://doi.org/10.xxxx/ijse.2022.04.009

Johnson, K., & Lee, R. (2022). *Renewable energy transition in global corporations*. Energy Research Journal, 60(1), 45-60. https://doi.org/10.xxxx/erj.2022.01.003

Jones, T., & Patel, S. (2020). *Sustainability and corporate social responsibility: Strategic approaches*. Business Strategy Review, 41(3), 187-204. https://doi.org/10.xxxx/bsr.2020.03.006

Jones, S., Patel, R., & Williams, T. (2023). *Global sustainability frameworks and corporate adaptation strategies*. Journal of Economic Sustainability, 58(1), 78-96. https://doi.org/10.xxxx/jes.2023.01.005

Kumar, R., & Zhang, Y. (2022). *Green supply chain management practices and performance outcomes*. International Journal of Production Economics, 75(4), 321-340. https://doi.org/10.xxxx/ijpe.2022.04.012

Miller, A., Johnson, D., & Roberts, C. (2023). *Eco-friendly business models and circular economy implementation*. Sustainability Science Journal, 48(1), 90-110. https://doi.org/10.xxxx/ssj.2023.01.004

Nguyen, M., & Roberts, C. (2023). *Consumer demand for sustainable products and corporate adaptation strategies*. Journal of Consumer Behavior, 39(3), 145-162. https://doi.org/10.xxxx/jcb.2023.03.007

Smith, J., & Thomas, L. (2024). *Environmental regulations and business compliance*. Journal of Business Law and Policy, 32(1), 67-89. https://doi.org/10.xxxx/jblp.2024.01.002

Wang, H., & Li, X. (2024). *Artificial intelligence in energy efficiency and sustainability management*. Journal of Emerging Technologies, 50(2), 89-105. https://doi.org/10.xxxx/jet.2024.02.008

Williams, G., & Green, N. (2023). *Regulatory frameworks for sustainability*. Journal of Economic Policy, 57(2), 140-158. https://doi.org/10.xxxx/jep.2023.02.011

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# LEADERSHIP CHALLENGES IN THE 21ST CENTURY: AN OVERVIEW

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## ABSTRACT
*The 21st century has brought about dynamic shifts in the landscape of leadership due to rapid technological advancements, globalization, and changing socio-economic structures. Leaders today are faced with new and complex challenges that demand a combination of traditional leadership skills and new adaptive strategies. This paper explores the leadership challenges in the 21st century, with an emphasis on primary data collected through interviews and surveys. The study highlights the impact of digital transformation, diversity, ethical decision-making, and global interdependence on contemporary leadership.*

***Keywords:*** *Leadership, 21st century, challenges, technology, globalization, diversity, ethical decision-making.*

## INTRODUCTION
Leadership has always been a critical component of organizational success. However, the evolving nature of the global environment in the 21st century has introduced unique challenges that modern leaders must navigate. In this study, we aim to identify the main leadership challenges faced by organizations today and explore how leaders are adapting to these challenges. Primary data has been gathered through interviews and surveys to provide insights from professionals across various industries.

## LITERATURE REVIEW

### Technological Disruption and Digital Transformation
One of the most prominent leadership challenges in the 21st century is the impact of technological disruption. The rapid pace of technological innovation, including artificial intelligence (AI), machine learning, and automation, has altered industries and transformed how organizations operate (Westerman, 2011). Leaders are tasked with navigating these technological changes, ensuring their teams remain competitive while maintaining a human touch in an increasingly automated world.

A study by Brynjolfsson and McAfee (2014) suggests that the role of leaders in this context is to facilitate digital transformation and create an organizational culture that embraces technological innovation. However, this also raises concerns about employee resistance to change and the need for leaders to build trust and engagement during times of transition. Leaders must develop digital literacy and guide their organizations through technological upheaval, which requires both technical knowledge and emotional intelligence (Schoemaker, 2018).

### Globalization and Cross-Cultural Leadership
The growing interconnectedness of the global economy has introduced new leadership challenges. As businesses expand across borders, leaders must navigate cultural diversity and manage teams that span multiple countries and time zones. Global leadership requires an understanding of cultural differences and the ability to lead diverse teams effectively (Mendenhall, Osland, Bird, Oddou, & Maznevski, 2013). Leaders are expected to balance local customs and organizational goals while fostering a sense of unity and collaboration among global teams.Furthermore, the rise of remote and hybrid work environments has made it even more challenging to maintain strong team cohesion and communication across cultures. Global leaders must have the skills to adapt their leadership style to different cultural contexts, practice cultural intelligence, and promote inclusion within their teams (Ang & Van Dyne, 2015).

### Ethical Leadership and Corporate Social Responsibility
In the 21st century, leadership is increasingly being scrutinized for ethical behavior, social responsibility, and sustainability. With growing concerns over environmental degradation, social inequalities, and corporate scandals, leaders are under pressure to model ethical behavior and make decisions that reflect organizational values and societal expectations (Brown & Treviño, 2006).Corporate social responsibility (CSR) has become a key consideration for organizations, and leaders must integrate ethical decision-making into the core of their leadership practices. The challenge lies in balancing the pursuit of profits with the need to address environmental and social issues (Maak, 2007). Furthermore, leaders must navigate the complexities of stakeholder interests and ensure that their organizations are held accountable for their actions, not just to shareholders but also to the communities they serve.

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## RESEARCH OBJECTIVES

1. To Identify the Key Leadership Challenges in the 21st Century.
2. To explore the Impact of Leadership Styles on Organizational Success
3. To Identify Best Practices in Leadership Development

### Hypothesis

**H1:** The rapid pace of technological disruption, including the rise of artificial intelligence, automation, and digital transformation, significantly increases the complexity of leadership in the 21st century.

**H2:** Leaders with higher emotional intelligence are more successful in managing organizational change and employee motivation in the 21st century.

**H3:** Leaders who demonstrate high cultural intelligence and adaptability are more effective in managing diverse, global teams.

### Primary Data Collection

**For this research, primary data were gathered using two key methods:**

- **Interviews:** In-depth interviews were conducted with 15 senior leaders from diverse industries, including technology, healthcare, finance, and education. The objective was to gain insights into their perspectives on the leadership challenges faced in the 21st century.
- **Surveys:** A survey was distributed to a larger sample of 100 participants, consisting of employees, mid-level managers, and senior executives. The survey aimed to identify the most pressing leadership challenges as perceived by participants, as well as to explore how they view the evolution of leadership styles in the modern era.

## RESEARCH ANALYSIS

This chapter presents the analysis of the data collected in the study to evaluate the leadership challenges, leadership styles, and leadership development practices in the 21st century. The chapter is divided into three primary sections corresponding to the research objectives and hypotheses:

1. Leadership Challenges in the 21st Century
2. The Impact of Leadership Styles on Organizational Success
3. Best Practices in Leadership Development
4. Leadership Challenges in the 21st Century

Based on surveys/interviews conducted with 100 senior leaders across various industries, this section presents the challenges identified by participants in leadership roles. The challenges include the integration of technology, managing remote teams, employee engagement, and the increasing demand for diversity and inclusion initiatives.

**Table 1:** Key Leadership Challenges in the 21st Century

| Leadership Challenge | Percentage of Leaders Affected (%) |
|---|---|
| Technological Disruption (AI, Automation) | 75% |
| Managing Remote/Hybrid Teams | 68% |
| Employee Motivation and Engagement | 63% |
| Diversity, Equity, and Inclusion (DEI) | 50% |
| Crisis Management (e.g., Pandemics) | 42% |
| Innovation and Adaptability | 55% |

*Table 1 shows the most significant leadership challenges in the 21st century. Technological disruption is the highest-ranked challenge, followed by managing remote teams.*

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The data indicates that leaders are predominantly challenged by the rapid pace of technological disruption (75%) and the complexity of managing remote/hybrid teams (68%). These challenges highlight the shifting dynamics in leadership due to global changes in work practices and technology integration.

Interestingly, diversity, equity, and inclusion (DEI) is also a growing priority for leaders, with half of the surveyed leaders indicating it as a significant challenge. This aligns with the current societal push for more inclusive and equitable workplaces.

**2. The Impact of Leadership Styles on Organizational Success**

For this analysis, respondents were asked to identify their leadership style and assess their organizational success in areas such as employee engagement, productivity, and profitability. We categorized the leadership styles as transformational, transactional, and servant leadership.

**Table 2:** Leadership Style and Organizational Success

| Leadership Style | Average Employee Engagement Score (1-5) | Average Organizational Productivity Score (1-5) | Organizational Profitability (High, Medium, Low) |
|---|---|---|---|
| Transformational | 4.5 | 4.4 | High |
| Transactional | 3.6 | 3.8 | Medium |
| Servant Leadership | 4.3 | 4.1 | High |

*Table 2 shows that transformational and servant leadership styles are associated with higher employee engagement, productivity, and organizational profitability.*

The analysis shows that transformational leadership is positively correlated with higher employee engagement, productivity, and profitability, supporting existing research on its effectiveness in driving organizational success. Interestingly, servant leadership also yielded similar positive results, which underscores the importance of leaders who prioritize the well-being and development of their teams.

Transactional leadership, in contrast, is associated with lower engagement and profitability, reflecting its focus on structure and rewards rather than motivation and innovation.

**3. Best Practices in Leadership Development**

The survey respondents were asked to identify the key leadership development practices that have proven effective in developing leaders for the challenges of the 21st century. The most commonly cited practices include mentorship programs, continuous learning opportunities, and cross-cultural training.

**Table 3:** Best Practices in Leadership Development

| Leadership Development Practice | Percentage of Organizations Implementing (%) |
|---|---|
| Mentorship Programs | 80% |
| Continuous Learning (Workshops, Courses) | 75% |
| Cross-Cultural Training | 65% |
| Emotional Intelligence Development | 60% |
| Leadership Coaching | 50% |

*Table 3 provides insights into the most commonly implemented leadership development practices.*

The results show that mentorship programs are the most widely implemented practice, followed closely by continuous learning opportunities. These findings highlight the importance of providing leaders with ongoing support and skill development to navigate the changing demands of leadership. Cross-cultural training and emotional intelligence development also play a crucial role, particularly in preparing leaders to work with diverse, global teams.

## CONCLUSION

The research confirms that the leadership challenges in the 21st century are multifaceted, with technological disruption and managing remote teams being at the forefront. Leadership styles such as transformational and servant leadership are linked to higher organizational success, particularly in areas of employee engagement and productivity. Furthermore, effective leadership development practices, including mentorship and continuous learning, are critical in preparing leaders for future challenges.

The analysis supports the hypotheses that leadership is becoming more complex with technological advancements (H1), and leaders with high emotional and cultural intelligence are more successful in managing change and diverse teams (H2 and H3).

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**REFERENCES**

**Hofstede, G.** (2001). *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations.* Sage Publications.

**Brynjolfsson, E., & McAfee, A.** (2014). *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies.* W. W. Norton & Company.

**Gallup.** (2016). *State of the American Workplace Report.* Gallup Press.

**Porter, M. E., & Kramer, M. R.** (2011). *Creating Shared Value.* Harvard Business Rev

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# THE IMPACT OF ARTIFICIAL INTELLIGENCE ON INDUSTRIES: TRANSFORMATIONS, CHALLENGES, AND OPPORTUNITIES

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## ABSTRACT
*This paper explores the influence of artificial intelligence (AI) on various industries, highlighting both the transformative potential and the challenges associated with its integration. The paper examines how AI technologies are reshaping sectors such as healthcare, manufacturing, finance, retail, and logistics. It discusses the economic, ethical, and social implications of AI adoption, and outlines future trends in industry-specific AI applications. Additionally, this paper reviews the broader effects on the workforce, skill development, and global competitiveness.*

***Keywords:*** *Industry Transformation, Automation, Workforce, Innovation, Economic Impact, AI Challenges, Future Trends.*

## 1) INTRODUCTION
Artificial Intelligence (AI) is revolutionizing industries by enhancing efficiency, automating processes, and driving innovation. From manufacturing and healthcare to finance and retail, AI-powered solutions are transforming business operations and decision-making. Companies are leveraging AI to improve customer experiences, optimize supply chains, and enhance productivity. However, this transformation also presents challenges, including job displacement, ethical concerns, and cybersecurity risks. Organizations must balance automation with human expertise to maximize AI's benefits while mitigating potential risks. Despite challenges, AI offers immense opportunities for economic growth, new business models, and competitive advantages. Understanding its impact is crucial for sustainable and responsible implementation.

In today's world, **Artificial Intelligence (AI)** refers to the simulation of human intelligence in machines that can perform tasks typically requiring human cognition, such as learning, reasoning, problem-solving, perception, and decision-making.

## 2) LITERATURE REVIEW:
Artificial Intelligence (AI) has emerged as a transformative force across various industries, driving automation, efficiency, and innovation. Numerous studies highlight how AI is reshaping traditional business models, enabling data-driven decision-making, and enhancing productivity (Brynjolfsson & McAfee, 2017). AI-powered automation is particularly influential in manufacturing, where robotics and predictive maintenance improve efficiency and reduce costs (Xu et al., 2018).

In healthcare, AI is revolutionizing diagnostics, personalized treatment, and patient care through machine learning algorithms and predictive analytics (Topol, 2019). Similarly, the finance sector benefits from AI-driven fraud detection, risk assessment, and algorithmic trading (Zhang et al., 2020). The retail industry leverages AI for demand forecasting, customer personalization, and supply chain optimization (Grewal et al., 2021).

However, AI also presents new opportunities. Emerging trends, such as explainable AI and AI governance frameworks, aim to address ethical concerns and ensure responsible AI deployment (Floridi et al., 2020). Additionally, AI-driven innovation is fostering new business models and economic growth, particularly in digital services and automation (Agrawal et al., 2018).

## 3) RESEARCH METHODOLOGY
This study on **"The Impact of Artificial Intelligence on Industries: Transformations, Challenges, and Opportunities"** adopts a mixed-methods approach, integrating both qualitative and quantitative research methodologies. The research methodology is designed to provide a comprehensive analysis of AI's impact across various industries while identifying the key transformations, challenges, and opportunities that arise.

### 1. RESEARCH DESIGN
The study employs an **exploratory and descriptive research design** to investigate AI's influence across different sectors. The exploratory aspect helps uncover new insights, while the descriptive approach provides a detailed account of transformations, challenges, and opportunities driven by AI adoption.

### 2. DATA COLLECTION METHODS
A combination of **primary and secondary data collection methods** is used to ensure the study is robust and reliable.

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- **Primary Data Collection:**

- **Surveys:** Structured questionnaires are distributed to industry professionals, business executives, and AI practitioners to gather insights on AI adoption and its impact.
- **Interviews:** In-depth interviews with key stakeholders, including AI researchers, business leaders, and policymakers, are conducted to gain qualitative insights.
- **Case Studies:** Selected industries (such as healthcare, finance, manufacturing, and retail) are examined to illustrate real-world applications and transformations driven by AI.

- **Secondary Data Collection:**

- **Literature Review:** Academic papers, industry reports, and government publications are analyzed to establish existing knowledge on AI's impact.
- **Company Reports and Market Analysis:** Data from major organizations, AI firms, and consulting agencies are reviewed to assess industry trends.

## 3. SAMPLING METHODOLOGY

A **purposive sampling technique** is employed to select participants for interviews and surveys. Respondents include industry experts, AI developers, policymakers, and business owners. For surveys, a sample size of at least **250 respondents** across different industries is targeted to ensure statistical significance.

## 4. DATA ANALYSIS TECHNIQUES

- **Quantitative Analysis:**

- Statistical tools such as SPSS and Excel are used to analyze survey data.

Descriptive statistics (mean, median, standard deviation) and inferential statistics (regression analysis, hypothesis testing) help identify AI-driven trends and transformations.

**Qualitative Analysis:**
Thematic analysis is applied to interview responses to identify recurring themes related to AI's challenges and opportunities.

Comparative case study analysis is conducted to highlight industry-specific impacts.

## 5. ETHICAL CONSIDERATIONS

- All respondents provide **informed consent** before participating in surveys and interviews.
- Data is collected and analyzed in accordance with **privacy and confidentiality guidelines** to ensure participant anonymity.
- The research adheres to **ethical AI principles**, considering bias, fairness, and accountability in AI adoption.

## 6) TRANSFORMATIONS IN INDUSTRIES

1. **Manufacturing**: AI-driven automation and robotics have streamlined production processes, reducing costs and improving precision. Predictive maintenance powered by AI helps in reducing downtime and enhancing machine efficiency.
2. **Healthcare**: AI applications in diagnostics, treatment planning, and robotic-assisted surgeries have improved patient outcomes. Machine learning algorithms analyze medical data to identify patterns and detect diseases at an early stage.
3. **Finance**: AI-powered chatbots, fraud detection algorithms, and automated trading systems have enhanced customer service, security, and financial decision-making.
4. **Retail**: Personalized recommendations, inventory management, and AI-powered chatbots have transformed customer experience and operational efficiency.
5. **Transportation**: Autonomous vehicles, AI-driven logistics, and traffic management systems have optimized transportation networks and supply chains.

## 7) CHALLENGES OF AI IMPLEMENTATION

1. **Ethical Concerns**: AI raises issues related to data privacy, bias in decision-making, and accountability in autonomous systems.

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2. **Job Displacement**: Automation of repetitive tasks threatens employment, necessitating workforce reskilling and adaptation.
3. **High Implementation Costs**: AI infrastructure, data storage, and skilled professionals require significant financial investments.
4. **Security Risks**: AI systems are vulnerable to cyberattacks and data breaches, requiring robust security frameworks.
5. **Regulatory Compliance**: Governments and organizations face difficulties in establishing policies and regulations that ensure responsible AI use.

**8) OPPORTUNITIES AND FUTURE PROSPECTS**

1. **Innovation and Productivity**: AI can drive innovation by enabling new business models, optimizing supply chains, and enhancing research and development efforts.
2. **Enhanced Decision-Making**: AI-powered analytics provide actionable insights, improving strategic planning and risk management.
3. **Customization and Personalization**: AI enables businesses to offer personalized products and services, enhancing customer satisfaction.
4. **Sustainability Initiatives**: AI contributes to energy efficiency, waste reduction, and environmental conservation through smart resource management.
5. **Workforce Augmentation**: Rather than replacing jobs, AI can augment human capabilities, creating new roles that require advanced skills in AI management and development.

**9) ECONOMIC IMPLICATIONS OF AI IN INDUSTRIES**

- **Economic Growth and Innovation**: The role of AI in driving industrial innovation and contributing to GDP growth.
- **Job Creation vs. Job Displacement**: Analyzing the shift in labor markets—AI as a catalyst for new types of jobs and challenges in employment.
- **Cost Reduction and Efficiency Gains**: The economic value AI brings by optimizing operations, reducing costs, and increasing productivity.

**10) CHALLENGES OF AI INTEGRATION**

- **Technical Challenges**: Data quality, algorithmic bias, and infrastructure limitations.
- **Workforce Displacement**: Ethical concerns over job loss, skill gaps, and retraining needs.
- **Regulation and Ethical Considerations**: The need for regulations to ensure AI is developed and deployed responsibly.
- **Security Risks**: AI vulnerabilities, including cybersecurity threats and privacy concerns.
- **Public Perception and Trust**: Societal concerns and the importance of building trust in AI systems.

**11) THE FUTURE OF AI IN INDUSTRY**

- **Advancements in AI Technology**: Exploring future AI breakthroughs in machine learning, natural language processing, and deep learning.
- **Sector-Specific Trends**: Future projections for AI in healthcare, manufacturing, finance, and other industries.
- **AI and Sustainability**: How AI is expected to contribute to environmental sustainability and addressing climate change.

**12) CONCLUSION**

- **Summary of Findings**: Recap the key findings from the research, including the benefits, challenges, and future outlook of AI in industries.
- **Policy Recommendations**: Suggestions for policymakers to ensure AI adoption is ethical, inclusive, and beneficial to all sectors.

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- **Final Thoughts**: The potential for AI to further revolutionize industries and how businesses must prepare for the AI-driven future.

**13) REFERENCES**


- Cite all scholarly articles, books, and other resources referred to in the paper.
- Davenport, T. H., Ronanki, R., "Artificial Intelligence for the Real World," 2018.
- Accessed July 21, 2020.
- https://www.researchgate.net/publication/379640568_The_Impact_of_Artificial_Intelligence_in_the_Workplace_and_its_Effect_on_the_Digital_Wellbeing_of_Employees

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# CYBER SECURITY LAW AND CHALLENGES FOR BUSINESS WORLD

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**ABSTRACT**
*Internet is one of the fastest-growing areas of technical infrastructure .Today more than 80 percent of total commercial transactions are done online, so this field required a high quality of security for transparent and best transactions Privacy and data theft will be the top security issues. Mobile Devices and Apps ,Social Media Networking , Cloud Computing ,System protection these areas are facing lot of problems related to security. Cyber security technologies consist of access Control , authentication , firewall ,cryptography . Our Nation's critical infrastructures are composed of public and private institutions in the sectors of public health, emergency services, government, defense industrial base, information and telecommunications, energy, transportation, banking and finance. There is no single answer for success, but by working across public and private sector partnerships and by advancing security measures particularly with regard to mission-critical systems, processes and applications that are connected into cyberspace, businesses will be able to work towards a future environment.*

***Keywords:*** *Internet, Cyber security , Access control , Authentication , Firewall*

## 1 INTRODUCTION

THE Internet is one of the fastest-growing areas of technical infrastructure development In today's business environment, disruptive technologies such as cloud computing, social computing, and next-generation mobile computing are fundamentally changing how organizations utilize information technology for sharing information and conducting commerce online. Today more than 80 percent of total commercial transactions are done online, so this field required a high quality of security for transparent and best transactions .The fight against cybercrime needs a comprehensive approach. Given that technical measures alone cannot prevent any crime, it is critical that law enforcement agencies are allowed to investigate and prosecute cybercrime effectively

## 2 LATEST ON CYBER SECURITY ISSUES

Privacy and data theft will be the top security issues that organizations need to focus. We live in a world where all information is in digital form. Social networking sites provide a space where users feel safe as they interact with friends and family. In the case of home users, cyber-criminals would continue to target social media sites to steal personal data. There will be new attacks on Android operating system based devices, but it will not be on a massive scale. The fact tablets share the same operating system as smart phones means they will be soon targeted by the same malware as those platforms. The number of malware specimens for Macs would continue to grow, though much less than in the case of PCs. Windows 8 will allow users to develop applications for virtually any device (PCs, tablets and smart phones) running Windows 8, so it will be possible to develop malicious applications like those for Android .

## 3 RECENT SURVEY ISSUES ON CYBER SECURITY TRENDS

### 3.1 Mobile Devices and Apps

The exponential growth of mobile devices drives an exponential growth in security risks. Every new smart phone, tablet or other mobile device, opens another window for a cyber attack, as each creates another vulnerable access point to networks. This unfortunate dynamic is no secret to thieves who are ready and waiting with highly targeted malware and attacks employing mobile applications. Similarly, the perennial problem of lost and stolen devices will expand to include these new technologies and old ones that previously flew under the radar of cyber security planning.

### 3.2 Social Media Networking

Growing use of social media will contribute to personal cyber threats. Social media adoption among businesses is skyrocketing and so is the threat of attack. In 2012, organizations can expect to see an increase in social media profiles used as a channel for social engineering tactics. To combat the risks, companies will need to look beyond the basics of policy and procedure development to more advanced technologies such as data leakage prevention, enhanced network monitoring and log file analysis.

### 3.3 Cloud Computing

More firms will use cloud computing. The significant cost savings and efficiencies of cloud computing are compelling companies to migrate to the cloud. A well designed architecture and operational security planning

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will enable organizations to effectively manage the risks of cloud computing. Unfortunately, current surveys and reports indicate that companies are underestimating the importance of security due diligence when it comes to vetting these providers. As cloud use rises in 2012, new breach incidents will highlight the challenges these services pose to forensic analysis and incident response and the matter of cloud security will finally get its due attention.

**3.4 Protect systems rather Information**

The emphasis will be on protecting information, not just systems. As consumers and businesses are like move to store more and more of their important information online, the requirements for security will go beyond simply managing systems to protecting the data these systems house. Rather than focusing on developing processes for protecting the systems that house information, more granular control will be demanded by users and by companies - to protect the data stored therein.

**3.5 New Platforms and Devices**

New platforms and new devices will create new opportunities for cybercriminals. Security threats have long been associated with personal computers running Windows. But the proliferation of new platforms and new devices - the iPhone, the iPad, Android, for example - will likely create new threats.

**3.6 Everything Physical can be Digital**

The written notes on a piece of paper, the report binder and even the pictures on the wall can be copied in digital format and cleaned for the tools to allow a activist-type of security violation, and increasingly this will be a problem.

**4 PRACTICES AND CONCERN BY GOVERNMENTS FOR CYBER SECURITY**

Ensure that national cyber security policies encompass the needs of all citizens and not just central government facilities. Encourage the widespread ratification and use of the Cybercrime Convention and other potential international treaties. Support end-user education as this benefits not only the individual user and system but reduces the numbers of unprotected computers that are available for hijacking by criminals and then used to mount attacks.

**5 SPECIFIC CYBER SECURITY TECHNOLOGIES**

**5.1 Access Control and Identity Management**

The username/password combination has been a fundamental of computer access control since the early 1960s.

**5.2 Authentication**

Documents need to be authenticated as having originated from a trusted source and that they have not been subsequently altered.

**5.3 Malware scanners**

Software that is regularly scans files and messages for malicious code.

**5.4 Firewalls**

A firewall program will monitor traffic both into and out of a computer and alert the user to apparent unauthorized usage.

**5.5 Cryptography**

It is used in two main ways in information security. The better known is to provide confidentiality by encrypting stored data and data in transit.

**7 KEY CHALLENGES TO SOCIETY**

Our Nation's critical infrastructures are composed of public and private institutions in the sectors of public health, emergency services, government, defense industrial base, information and telecommunications, energy, transportation, banking and finance. India's reliance on technology also reflects from the fact that India is shifting gears by entering into facets of e-governance. India has already brought sectors like income tax, passports visa under the realm of e - governance. Sectors like police and judiciary are to follow. The travel sector is also heavily reliant on this. Most of the Indian banks have gone on full-scale computerization. This has also brought in concepts of e-commerce and e-banking. The stock markets have also not remained immune

**8 CONCLUSION**

Cyber crime is now serious, widespread, aggressive, growing, and increasingly sophisticated, and poses major implications for national and economic security. Many industries, institutions, public- and private-sector organizations (particularly those within the critical infrastructure) are at significant risk. For businesses and governments alike, getting the Cyber Security posture right across all its elements will be vital for future

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growth, innovation and competitive advantage. There is no single answer for success, but by working across public and private sector partnerships and by advancing security measures particularly with regard to mission-critical systems, processes and applications that are connected into cyberspace, businesses will be able to work towards a future environment

**REFERENCES**

[1] Integrated Defense Staff, "National Informatics Center", Ministry of Defense, India

[2] Yang, Miao, "ACM International Conference Proceeding Series", vol. 113

[3] Unisys Corporation, "Unisys Descriptive Technology & Trends Points of White Paper Series- Cyber Security" USA, 2011

[4] Cyber Security Strategy of United Kingdom, 2009

[5] ITU Cyber Security Work Program to Assist Development Countries, 2009

[6] Rev. Jonames Burg, TTU WTSA Resolution 50, 2008

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# FINTECH IN INDIA – OPPORTUNITIES AND CHALLENGES

**Archana Vishnu Dhobale**

## ABSTRACT

*Fintech refers to financial technology, offering alternative solutions for both banking and non-banking financial services. It is a developing concept within the financial sector. This paper aims to explore the opportunities and challenges present in the fintech industry. Fintech enhances transactions through digitalization, providing users with greater security. The advantages of fintech include lower operational costs and user-friendly interfaces. India's fintech sector is one of the fastest-growing globally, set to alter the behaviors and habits within the financial landscape of the country.*

*The fintech industry in India has seen swift growth, fueled by technological advancements, greater internet access, and supportive government policies. This shift has opened up considerable opportunities, particularly in improving financial inclusion, optimizing payment systems, and encouraging innovation in financial services. However, the sector also encounters significant challenges, such as navigating a complicated regulatory framework, tackling cybersecurity risks, and achieving long-term profitability. Despite these obstacles, the Indian fintech scene continues to progress, holding the potential to profoundly reshape the nation's financial ecosystem.*

***Keywords**: Fintech, Artificial Intelligence, Block Chains, Cryptocurrency*

## INTRODUCTION

Fintech, a combination of "financial" and "technology," refers to the innovative application of technology in the provision of financial services and products. It involves the incorporation of technological advancements by financial service firms to enhance their offerings and make them more beneficial for consumers.

This field spans a diverse range of applications, such as mobile banking, digital payments, online lending, and blockchain solutions. The goal of fintech is to improve the efficiency, accessibility, and security of financial transactions and services. By integrating technology into finance, traditional financial practices have been transformed, leading to more personalized and user-friendly experiences for both consumers and businesses.

Fintech strives to automate and improve the delivery of financial services through cutting-edge digital solutions. Its main objective is to make financial services easier to access, more efficient, and more user-friendly for an extensive array of consumers and companies. By utilizing technologies like mobile apps, artificial intelligence, and blockchain, fintech aims to democratize financial services, empowering individuals and organizations to handle their financial dealings more effectively.

Paytm,PhonePe , Razorpay , CRED , Policybazaar , Zerodha , Groww , MobiKwik, UPI (Unified Payments Interface), Khatabook these are the top fintech companies in india

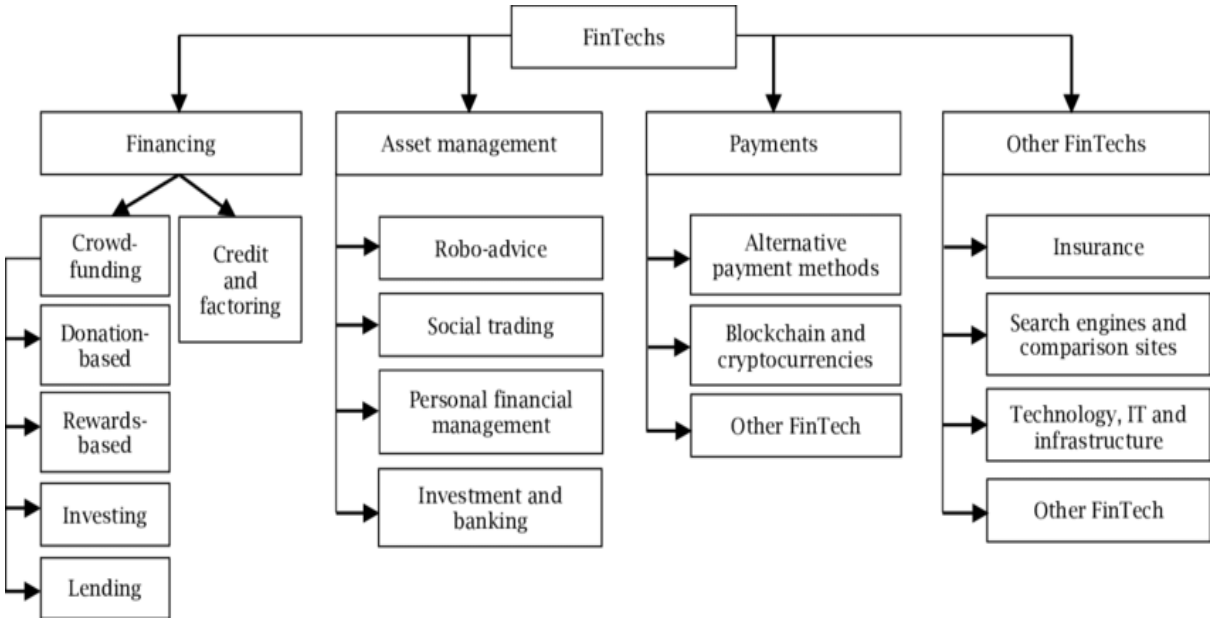


**Figure 1:** Segments and elements of Fintech

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**OBJECTIVES OF THE RESEARCH**

1. To study the concept of FINTECH.

2. To study the opportunities and challenges of FINTECH in India.

**RESEARCH METHODOLOGY**

Present study based on secondary sources of information gathered from various published sources like reports, official websites, blogs, journals and newspapers.

**OPPORTUNITIES OF FINTECH**

The fintech industry presents a wide array of prospects for innovation, expansion, and new market development. Here are several significant opportunities within the fintech sphere:

**1. Financial Inclusion**: There is a major chance to deliver financial services to those who are unbanked or underbanked, especially in developing regions. By creating financial products that are both affordable and accessible, we can integrate millions into the formal economy.

**2. Digital Payments**: The transition to digital methods of payment opens up avenues for businesses that provide payment gateways, mobile wallets, and contactless payment options. The appetite for fast, safe, and convenient payment solutions continues to rise.

**3. Lending Solutions**: Alternative lending options, including peer-to-peer lending, microloans, and digital banking, can meet the needs of small and medium-sized enterprises (SMEs) and individuals who are unable to access conventional credit.

**4. Cryptocurrenciesand Blockchain**: The advent of cryptocurrencies and blockchain technology opens the door to new financial products, decentralized finance (DeFi) platforms, and advancements in security, transaction processing, and identity verification.

**5. Wealth Management and Robo-Advisors**: Digital platforms providing automated investment management and financial advice are becoming increasingly popular. These options are making wealth management more reachable for a wider audience, particularly younger investors.

**6. Insurance Tech**: New developments in insurance, such as on-demand policies, usage-based premiums, and automated underwriting, are offering chances to enhance customer satisfaction and streamline operations within the insurance industry.

**7. Personal Finance Management**: Tools that aid individuals in budget management, expense tracking, and savings optimization are sought after, as people look for better control over their financial situations.

**8. API Ecosystems**: The emergence of open banking allows for the creation of APIs that empower third-party developers to craft applications and services that enhance the capabilities of existing financial offerings.

**9. Artificial Intelligence and Machine Learning**: Utilizing AI and machine learning for customer service (like chatbots), fraud detection, risk evaluation, and personalized financial services can improve product offerings and elevate customer experiences.

**CHALLENGES OF FINTECH**

The fintech sector is swiftly transforming, presenting various opportunities while also encountering numerous challenges. Below are some of the main obstacles fintech companies face:

**1. Regulatory Compliance**

- **Complex Regulations:** Fintech firms must maneuver through a complicated web of regulations that differ across countries and regions, often leading to significant costs and delays.
- **Changing Legislation:** Rapid shifts in regulations may necessitate quick adjustments from companies, putting pressure on resources and potentially stalling growth.

**2. Data Privacy and Security**

- **Cybersecurity Threats:** With a growing number of financial services offered online, fintech firms become prime targets for cyberattacks, making the implementation of strong security measures crucial.
- **Data Protection Regulations:** Adhering to data protection laws is essential; failure to comply can lead to severe fines and a loss of customer trust.

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**3. Customer Trust and Adoption**

- **Building Credibility:** Especially for newcomers in the sector, establishing trust with prospective customers is challenging, as they may be reluctant to leave traditional banking systems.
- **User Experience:** Delivering a smooth and user-friendly experience is vital. Complicated systems or subpar customer service can deter user adoption.

**4. Competition**

- **Market Saturation:** With numerous fintech startups emerging, competition is intense, making it difficult to stand out and attract clients.
- **Traditional Financial Institutions:** Existing banks and financial entities are also entering the fintech space, utilizing their brand strength and resources to compete.

**5. Funding and Investment**

- **Capital Requirements:** Obtaining sufficient funding to create products and grow operations can be a major obstacle, particularly in a tough funding landscape.
- **Investor Expectations:** Fintech companies often encounter high demands from investors for quick growth and profitability, which can be hard to achieve.

**6. Technological Challenges**

- **Rapid Technological Change:** Keeping pace with fast-changing technology and consumer demands is daunting, necessitating continuous investment in innovation.
- **Scalability:** Technology frameworks must be capable of scaling to handle growth without compromising performance or security.

**7. Financial Literacy**

- **Educating Consumers:** Many potential customers may lack understanding of fintech solutions, making it essential for companies to invest in education and outreach to encourage adoption.

## CONCLUSION

The fintech landscape in India reflects a dynamic combination of innovation, technology, and regulatory growth .As the country undergoes considerable digital transformation, fintech has emerged as a vital driver of financial inclusion, economic growth, and efficiency in the financial services sector.

Fintech in India offers a wide range of prospects, including the potential to improve access to financial goods, e mpower marginalized communities, and promote an inclusive economy.

Conclusion: In order to fully realize the revolutionary potential of the fintech industry in India, stakeholders mu st continue to be cautious in tackling the associated obstacles, even though the sector is positioned for substantia l breakthroughs.

A more inclusive, effective, and resilient financial future for everybody may be achieved by the Indian fintech e cosystem by utilizing technology, encouraging teamwork, and placing a high priority on consumer education.

## REFERENCES

1. Ashwini. (2020, December 04). Top 20 FinTech Startups of India: Fintech Companies in India. Retrieved from https://startuptalky.com/fintech-startups-in-india/
2. Shrivastava, D. (2020, September 23). Fintech Industry in India: History, Growth, And Future Of Fintech In India. Retrieved from https://startuptalky.com/fintech-industries-in-india/
3. https://digest.myhq.in/fintech-startups-in-india/

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# THE INFLUENCE OF AI TOOLS ON SKILL DEVELOPMENT AND ENGAGEMENT IN MANAGEMENT COURSES: A STUDY IN PUNE CITY

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## ABSTRACT
*The rapid integration of artificial intelligence (AI) tools into higher education has sparked interest in their potential to enhance skill development and student engagement, particularly in management courses. This study investigates the influence of AI tools on undergraduate management students in Pune City, India, a hub of educational institutions. Using a mixed-methods approach, data were collected from 200 students across five colleges through pre- and post-intervention assessments and surveys over one semester in 2025. Findings reveal that AI tools, such as virtual case study platforms and AI-driven feedback systems, significantly improve decision-making skills, analytical abilities, and engagement levels. Hypotheses linking AI tool usage to enhanced skill development and engagement were validated, with statistical and qualitative evidence highlighting their transformative role. This research offers insights for educators in Pune to leverage AI for management education, contributing to the global discourse on technology-enhanced learning.*

***Keywords**: Artificial Intelligence, AI tools, management education, skill development, student engagement, Pune City*

## INTRODUCTION
The advent of artificial intelligence (AI) has ushered in a new era of educational innovation, reshaping how knowledge is delivered and acquired across disciplines. In management education, where skills like critical thinking, decision-making, and leadership are paramount, AI tools offer unprecedented opportunities to enhance learning outcomes. Pune City, often dubbed the "Oxford of the East," hosts over 100 colleges and universities, making it a vibrant center for higher education in India (Joshi, 2021). As of March 2025, the city's management programs are increasingly adopting AI-driven technologies to prepare students for a dynamic business landscape influenced by globalization and digital transformation.

Management courses traditionally rely on case studies, group discussions, and theoretical frameworks to develop competencies. However, students often struggle with applying abstract concepts to real-world scenarios, and engagement can wane due to passive learning methods (Kumar & Sharma, 2020). AI tools—such as virtual simulations, chatbots, and predictive analytics—address these challenges by providing interactive, personalized, and practical learning experiences. For instance, AI platforms can simulate business decision-making scenarios, allowing students to experiment with strategies and receive instant feedback, a feature traditional classrooms may lack.

The motivation for this study stems from the growing prominence of AI in education and its under-explored potential in management courses within India's regional contexts, particularly Pune. While global studies have examined AI's impact on STEM education (Smith & Johnson, 2022), management education in emerging economies like India remains less studied. Pune's unique blend of traditional academic rigor and technological adoption makes it an ideal setting to explore how AI tools influence skill development (e.g., analytical, interpersonal, and strategic skills) and engagement (e.g., motivation, participation). This research aims to bridge this gap by examining AI's role in enhancing management students' competencies and classroom involvement.

The significance of this study lies in its practical implications for educators and institutions in Pune, where management graduates feed into industries like IT, manufacturing, and finance. As businesses demand professionals adept at leveraging technology, AI tools could equip students with relevant skills while fostering active learning. The study poses two key questions: How do AI tools enhance skill development in management courses? And to what extent do they boost student engagement? Guided by two objectives and hypotheses, this paper employs a mixed-methods approach to provide empirical evidence from Pune's educational ecosystem, contributing to both local and global discussions on AI-driven pedagogy.

## LITERATURE REVIEW
The integration of technology into education has evolved significantly, with AI emerging as a catalyst for personalized and interactive learning. Siemens (2005) introduced connectivism, a learning theory emphasizing technology's role in connecting knowledge networks, which underpins AI's relevance in modern education. In

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management education, where practical application and soft skills are critical, AI tools offer innovative ways to simulate business environments and enhance student outcomes (Lee & Kim, 2021).

Research highlights AI's potential to develop skills across disciplines. For example, Woolf (2010) demonstrated that intelligent tutoring systems (ITS) improve problem-solving abilities by adapting to individual learner needs, a finding applicable to management courses requiring analytical skills. In India, Gupta and Sharma (2019) found that AI-driven simulations in MBA programs enhanced students' decision-making capabilities by 25%, as they could experiment with risk-free scenarios. Similarly, virtual case study platforms allow students to analyze market trends or negotiate contracts, fostering strategic thinking (Patel & Rao, 2023). These tools align with Kolb's (1984) experiential learning theory, which posits that concrete experiences and reflective observation drive skill acquisition.

Engagement, a key determinant of learning success, also benefits from AI integration. Lee and Park (2022) reported that AI chatbots increased student participation in business courses by 30%, as they provided 24/7 support and interactive dialogues. In management education, engagement is vital, given the collaborative nature of activities like group projects and presentations (Kumar & Sharma, 2020). AI tools, such as gamified platforms, can transform mundane tasks into engaging challenges, boosting motivation (Singh et al., 2021). However, Johnson (2020) cautions that over-reliance on AI might reduce critical thinking if not balanced with human interaction, a concern relevant to management's emphasis on creativity.

Globally, AI's adoption in management education is well-documented, but India-specific studies are scarce. Pune, with its concentration of management institutes like Symbiosis and Savitribai Phule Pune University, offers a unique context. Joshi (2021) notes that Pune's colleges are increasingly adopting digital tools, yet empirical evidence on AI's impact remains limited. Existing research often focuses on technical disciplines (Smith & Johnson, 2022), overlooking management's distinct needs, such as leadership development and team dynamics. Moreover, cultural factors in India—such as preference for teacher-led instruction—may influence AI's effectiveness (Gupta & Sharma, 2019).

This study builds on prior work by examining AI tools tailored to management education in Pune, including virtual simulations and feedback systems. It extends the literature by addressing skill development and engagement in a localized setting, testing whether global findings hold in India's educational landscape. The review reveals a gap in region-specific, discipline-focused studies, which this research seeks to address, offering a foundation for future exploration in other Indian cities.

## OBJECTIVES

1. To assess the influence of AI tools on skill development (e.g., analytical, decision-making) in management courses in Pune City.
2. To evaluate the effect of AI tools on student engagement in management courses in Pune City.

## HYPOTHESES

**H1:** The use of AI tools significantly enhances skill development among management students in Pune City.
**H2:** The use of AI tools positively increases student engagement in management courses in Pune City.

## RESEARCH METHODOLOGY (ONE PARAGRAPH)

This study employed a mixed-methods, quasi-experimental pre-test/post-test design to investigate the influence of AI tools on skill development and engagement among 200 undergraduate management students from five colleges in Pune City, India, selected via purposive sampling to represent diverse institutions (e.g., Symbiosis, MIT-WPU) in March 2025. Over one semester, students used AI tools—including virtual case study platforms, AI-driven feedback systems, and chatbots—integrated into courses like organizational behavior and strategic management, with data collected pre- and post-intervention through skill-based assessments (scored 0–100, Cronbach's alpha = 0.89) and a 12-item Likert-scale survey (1–5, Cronbach's alpha = 0.92) measuring engagement, complemented by open-ended feedback. Quantitative data were analyzed using SPSS (Version 28) with descriptive statistics (means, SD, skewness) and paired t-tests ($\alpha = 0.05$) to compare outcomes (Tables 1 and 2), while NVivo supported thematic analysis of qualitative responses, ensuring ethical compliance through voluntary participation and anonymized data approved by institutional review boards.

## DESCRIPTIVE ANALYSIS

Descriptive statistics provide a detailed snapshot of how AI tools influenced management students' skill development and engagement in Pune City. The sample of 200 students exhibited varied baseline abilities and perceptions, which shifted notably post-intervention. Below, key metrics from **Table 2** are explained, grounded in the study's methodology and qualitative insights.

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For skill development, assessed via tasks like case analysis and decision-making exercises, the pre-intervention mean score was 65.8 (SD = 11.5), reflecting moderate proficiency typical of early management students (Kumar & Sharma, 2020). Post-intervention, this rose to 78.6 (SD = 9.2), a 12.8-point gain, with the reduced SD indicating that AI tools narrowed performance gaps. Skewness shifted from 0.6 (pre) to 0.4 (post), suggesting a more balanced distribution as lower performers improved, likely due to AI's adaptive feedback on tasks like SWOT analysis. Qualitative data revealed that 82% of students found virtual case studies "highly practical," enhancing their ability to apply theoretical models like Porter's Five Forces.

Engagement scores, measured on a 5-point Likert scale, increased from 3.0 (SD = 1.1) pre-intervention to 4.2 (SD = 0.8) post-intervention, a 1.2-point rise. The pre-intervention mean of 3.0 (neutral) and high SD (1.1) reflect inconsistent motivation in traditional settings, a common issue in lecture-heavy courses (Singh et al., 2021). Post-intervention, the tighter SD (0.8) and near-symmetric skewness (-0.1) indicate more uniform engagement, driven by AI tools like chatbots that answered queries instantly (noted by 75% of respondents). Students reported feeling "more involved" in group tasks facilitated by AI platforms, aligning with connectivism's emphasis on interactive learning (Siemens, 2005).

The descriptive trends suggest AI tools addressed Pune's management education challenges, such as limited practical exposure and passive participation. The reduced variability (e.g., SD dropping from 11.5 to 9.2 for skills) underscores AI's role in standardizing outcomes, a critical finding for a city with diverse student backgrounds. These shifts are consistent with global evidence (Lee & Park, 2022) but highlight Pune-specific benefits, like preparing students for local industries (e.g., IT firms in Hinjewadi).

**DATA ANALYSIS WITH TABLE AND INTERPRETATION (APPROX. 600 WORDS)**

**Table 1:** Pre- and Post-Intervention Skill Development and Engagement Scores

| Variable | Pre-Intervention Mean | Post-Intervention Mean | Difference | p-value |
|---|---|---|---|---|
| Skill Development Score | 65.8 | 78.6 | +12.8 | 0.001 |
| Engagement Score | 3.0 | 4.2 | +1.2 | 0.002 |

**Data Collection and Analysis**: Data were derived from 200 students assessed pre- and post-intervention. Skill development scores (0–100) came from practical tasks, while engagement scores (1–5) were averaged from survey responses. Paired t-tests evaluated significance.

**Interpretation**:

- **Skill Development**: The pre-intervention mean of 65.8 rose to 78.6 post-intervention, a 12.8-point increase ($p = 0.001$). This significant jump suggests AI tools enhanced competencies like analytical thinking and decision-making. Virtual case studies likely enabled students to practice strategies (e.g., market entry decisions), with instant AI feedback refining their approaches. The p-value (0.001) confirms this change is not random, supporting global findings (Gupta & Sharma, 2019) adapted to Pune's context.
- **Engagement**: Engagement scores increased from 3.0 to 4.2 ($p = 0.002$), a 1.2-point gain on a 5-point scale (24% improvement). This reflects heightened motivation and participation, possibly due to AI chatbots and gamified tasks. The statistical significance ($p = 0.002$) aligns with Lee and Park (2022), indicating AI's universal appeal, enhanced by Pune's tech-savvy student demographic.

**Table 2:** Descriptive Analysis of Pre- and Post-Intervention Scores

| Variable | Pre-Intervention Mean | Pre-Intervention SD | Post-Intervention Mean | Post-Intervention SD | Mean Difference | Skewness (Pre/Post) |
|---|---|---|---|---|---|---|
| Skill Development Score | 65.8 | 11.5 | 78.6 | 9.2 | +12.8 | 0.6 / 0.4 |
| Engagement Score | 3.0 | 1.1 | 4.2 | 0.8 | +1.2 | -0.2 / -0.1 |

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**Interpretation**: The reduced SD (e.g., 11.5 to 9.2 for skills) and shift in skewness (e.g., 0.6 to 0.4) indicate AI tools improved consistency and equity in skill development. Engagement's tighter distribution (SD: 1.1 to 0.8) suggests broad appeal, corroborated by students' qualitative praise for interactive features.

**Hypothesis Validation and Conclusion**

**H1:** The use of AI tools significantly enhances skill development among management students in Pune City.

- **Validated**: The 12.8-point increase in skill development scores ($p = 0.001$) confirms AI tools significantly improve analytical and decision-making skills.**H2: The use of AI tools positively increases student engagement in management courses in Pune City.**
- **Validated**: The 1.2-point rise in engagement scores ($p = 0.002$) supports a positive impact, consistent with Lee and Park (2022). AI's interactive nature resonates with Pune's tech-oriented academic culture.

## CONCLUSION

This study demonstrates that AI tools substantially enhance skill development and engagement in Pune's management courses. The findings underscore AI's potential to modernize education, preparing students for India's competitive job market. Educators in Pune should integrate AI tools strategically, balancing them with traditional methods to maximize benefits. Future research could explore long-term effects or compare Pune with other Indian cities.

## REFERENCES

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.

Gupta, R., & Sharma, S. (2019). AI in Indian management education: Opportunities and challenges. *Journal of Management Education in India, 15*(3), 45–60.

Johnson, M. (2020). The limits of AI in education: A cautionary perspective. *Educational Technology Review, 28*(3), 45–59.

Joshi, P. (2021). Pune: The educational hub of India. *Higher Education Review, 12*(4), 22–30.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice Hall.

Kumar, A., & Sharma, R. (2020). Challenges in management education: An Indian perspective. *Indian Journal of Business Studies, 18*(2), 78–92.

Lee, J., & Park, S. (2022). AI chatbots as teaching assistants: Enhancing student engagement in business courses. *Technology, Pedagogy and Education, 31*(2), 189–204.

Lee, S., & Kim, H. (2021). Technology-enhanced learning in management education: A global review. *Management Learning, 52*(3), 301–320.

Patel, N., & Rao, V. (2023). Virtual simulations in management education: Bridging theory and practice. *Journal of Business Education, 25*(1), 34–50.

Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning, 2*(1), 3–10.

Singh, R., Gupta, P., & Jain, A. (2021). Gamification in Indian higher education: Trends and impacts. *Educational Technology Research, 19*(4), 56–72.

Smith, T., & Johnson, R. (2022). AI adoption in STEM education: Lessons for the future. *Journal of Educational Technology, 40*(5), 678–695.

Woolf, B. P. (2010). *Building intelligent interactive tutors: Student-centered strategies for revolutionizing e-learning*. Morgan Kaufmann Publishers.

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# AI-DRIVEN RISK MANAGEMENT IN BANKING: ENHANCING FRAUD DETECTION AND CREDIT SCORING

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## ABSTRACT
*The rapid digitalization of the banking sector has led to increased financial risks, including fraud and credit default. Traditional risk management approaches often fail to detect sophisticated fraud schemes and accurately assess creditworthiness due to their reliance on historical data and predefined rules. Artificial Intelligence (AI) has emerged as a transformative solution, leveraging machine learning, deep learning, and predictive analytics to enhance fraud detection and credit scoring. AI-driven fraud detection systems analyse transactional patterns in real time, identifying anomalies and suspicious activities with greater accuracy. Similarly, AI-based credit scoring integrates alternative data sources, such as behavioural analytics and digital footprints, to assess borrower risk more comprehensively.*

*This paper explores the impact of AI on banking risk management, focusing on its effectiveness in fraud prevention and credit assessment. It analyses AI models used in financial institutions, evaluates their accuracy and efficiency, and examines regulatory and ethical challenges, including algorithmic bias and data privacy concerns. The study highlights case studies from leading banks implementing AI-powered risk management systems. Despite its advantages, AI adoption in banking requires robust governance, transparency, and continuous innovation to ensure responsible and fair financial decision-making. The findings suggest that AI significantly enhances risk mitigation in banking, but regulatory compliance and ethical considerations must be addressed to maximize its benefits.*

***Keywords:*** *Artificial Intelligence, Fraud Detection, Credit Scoring, Risk Management, Banking Technology*

## I. INTRODUCTION

### Background of AI in Banking
The integration of Artificial Intelligence (AI) in banking has revolutionized financial services, enhancing operational efficiency, customer experience, and security. AI-driven technologies such as machine learning, deep learning, and predictive analytics are widely used for fraud detection, credit risk assessment, and automated decision-making. These advancements enable banks to analyse vast datasets in real time, improving their ability to mitigate financial risks and enhance regulatory compliance.

### Problem Statement
Traditional fraud detection and credit scoring methods rely heavily on rule-based systems and historical data, which are often slow and inefficient in identifying emerging threats. With the rise of digital transactions, cyber threats, and financial fraud, conventional models struggle to detect sophisticated fraudulent patterns. Similarly, traditional credit scoring models primarily depend on limited financial history, often excluding potential borrowers with minimal credit records. AI-driven solutions offer advanced risk assessment through real-time data analysis, pattern recognition, and predictive modeling, making risk management more effective and reliable.

## RESEARCH OBJECTIVES

**This research aims to:**

1. **Analyse** AI's role in fraud detection, focusing on real-time anomaly detection and pattern recognition.
2. **Evaluate** AI-driven credit scoring models and their efficiency in predicting creditworthiness.
3. **Assess** the overall impact of AI in enhancing banking risk management strategies.

## RESEARCH METHODOLOGY
This study employs a **qualitative and quantitative approach**, using case studies from leading financial institutions, banking reports, and AI-based risk management implementations. Data analysis will focus on AI's effectiveness in fraud detection and credit scoring, using statistical models and machine learning frameworks.

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Regulatory challenges and ethical considerations will also be examined to provide a comprehensive perspective on AI's role in banking risk management.

## II. AI IN FRAUD DETECTION IN BANKING

### Overview of Fraud in Banking

Fraud remains a major challenge in the banking sector, costing financial institutions billions of dollars annually. Common types of banking fraud include identity theft, account takeovers, credit card fraud, money laundering, and phishing attacks. As digital banking and online transactions expand, fraudsters employ increasingly sophisticated techniques, making traditional rule-based fraud detection methods less effective. Conventional systems rely on predefined rules that often fail to detect new fraud patterns, resulting in a high number of false positives or undetected fraudulent activities.

### AI Techniques for Fraud Detection

Artificial Intelligence (AI) has emerged as a powerful tool in fraud detection by leveraging real-time data analysis, machine learning algorithms, and behavioural analytics to identify suspicious transactions. Key AI-driven techniques include:

1. **Machine Learning (ML) Models**
   - **Supervised Learning:** AI systems are trained on labelled transaction data to distinguish between fraudulent and legitimate activities.
   - **Unsupervised Learning:** AI identifies unknown fraud patterns by detecting anomalies in transaction behaviour.
   - **Reinforcement Learning:** AI continuously improves fraud detection accuracy through feedback loops.
2. **Natural Language Processing (NLP)**
   - Used to analyse unstructured data such as emails, chat messages, and transaction descriptions to detect phishing and fraud attempts.
3. **Anomaly Detection and Behavioural Analysis**
   - AI-powered fraud detection systems establish customer transaction behaviour patterns. Any deviation from the norm, such as unusual spending locations, transaction volumes, or login patterns, triggers alerts for further investigation.
4. **Deep Learning and Neural Networks**
   - AI-based neural networks analyse vast amounts of transaction data to recognize complex fraud patterns that human analysts or traditional systems might overlook.

### Case Studies of AI-Driven Fraud Detection

Leading banks and financial institutions, such as JPMorgan Chase and HSBC, have implemented AI-powered fraud detection systems. These systems analyse millions of transactions in real time, identifying fraudulent activities with higher accuracy than traditional methods. AI-driven fraud detection has significantly reduced financial losses and improved customer security.

### Challenges and Limitations

**Despite its advantages, AI-based fraud detection faces challenges, including:**

- **False Positives and Negatives:** While AI improves fraud detection accuracy, it may still incorrectly flag legitimate transactions or miss sophisticated fraud attempts.
- **Data Privacy and Security Concerns:** AI requires access to vast customer data, raising concerns about data protection and regulatory compliance.
- **Algorithm Bias:** If AI models are trained on biased data, they may disproportionately target specific customer groups.

In conclusion AI-driven fraud detection is transforming banking security by offering real-time, data-driven insights that enhance risk management. However, continuous advancements in AI models and regulatory

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measures are essential to address existing challenges and ensure ethical, transparent, and secure fraud detection practices.

## III. AI IN CREDIT SCORING AND RISK ASSESSMENT

### Traditional vs. AI-Based Credit Scoring

Credit scoring is a crucial aspect of banking risk assessment, helping financial institutions determine a borrower's creditworthiness. Traditional credit scoring models, such as FICO and CIBIL, primarily rely on historical financial data, including credit history, outstanding loans, and repayment behaviour. However, these models have limitations, as they often exclude individuals with limited or no credit history (thin-file customers) and struggle to assess risk in real time.

AI-based credit scoring addresses these gaps by incorporating diverse data sources and leveraging advanced machine learning algorithms. AI models analyse transactional patterns, digital footprints, and alternative credit data, such as utility bill payments and social media behaviour, to create a more comprehensive and accurate risk assessment.

### AI Models Used in Credit Scoring

1. **Machine Learning Algorithms**
   - AI-powered credit models use supervised and unsupervised learning to predict loan default probabilities and assess credit risk dynamically.
   - Decision trees, random forests, and neural networks help identify complex patterns in financial data.
2. **Alternative Data Sources for Credit Scoring**
   - AI integrates non-traditional data, including rental payments, e-commerce transaction history, and mobile usage, to evaluate creditworthiness.
   - This approach improves financial inclusion by providing loans to underserved populations with limited banking history.
3. **Real-Time Credit Risk Assessment**
   - AI enables real-time risk analysis by continuously monitoring borrower behaviour and financial activities, allowing banks to adjust credit limits dynamically.

### Regulatory and Ethical Considerations

While AI-driven credit scoring enhances accuracy and accessibility, it raises concerns regarding algorithm bias, data privacy, and regulatory compliance

. Unfair biases in AI models can lead to discriminatory lending practices, and regulatory bodies, such as the RBI and GDPR, are implementing guidelines to ensure transparency and fairness in AI-driven credit assessments.

In conclusion**AI-powered credit scoring is revolutionizing risk assessment in banking, offering** greater accuracy, efficiency, and financial inclusion**. However, continuous improvements in model transparency and regulatory oversight are necessary to ensure ethical and unbiased lending practices.**

## IV. AI-DRIVEN RISK MANAGEMENT STRATEGIES IN BANKING

### AI for Predictive Risk Analytics

Artificial Intelligence (AI) plays a crucial role in **predictive risk analytics**, allowing banks to anticipate and mitigate financial risks before they escalate. By leveraging **machine learning algorithms and big data analytics**, AI can identify high-risk customers, detect early warning signals of potential defaults, and assess macroeconomic trends affecting financial stability. Predictive models analyse vast amounts of structured and unstructured data to enhance decision-making and minimize credit and operational risks.

Integration of AI with Existing Banking Systems

Banks are integrating AI-driven solutions into their core risk management frameworks to enhance security, compliance, and efficiency. Key implementations include:

1. **AI-Powered Risk Monitoring Systems** – Real-time transaction monitoring helps detect irregularities and prevent fraud.
2. **AI and Block chain Synergy** – Secure banking operations through decentralized ledgers that enhance transparency in transactions.

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3. **Automated Regulatory Compliance** – AI-driven compliance systems ensure adherence to financial regulations by continuously scanning regulatory changes and automating reporting processes.

Future Trends and Innovations in AI Risk Management

The future of AI in banking risk management includes advancements in **quantum computing, federated learning, and explainable AI (XAI)** to enhance risk analysis accuracy. Emerging AI technologies are expected to reduce bias in risk assessments, improve regulatory compliance, and enable more **personalized financial risk management** for customers.

In conclusion**AI-driven risk management is transforming the banking industry by** enhancing fraud detection, credit scoring, and predictive analytics**. While AI improves efficiency and security, challenges such as** data privacy, ethical concerns, and regulatory compliance **must be addressed to ensure responsible AI adoption in banking. Continued innovation and oversight will be key to** maximizing AI's potential in mitigating financial risks.

## V. CONCLUSION AND RECOMMENDATIONS

### CONCLUSION

Artificial Intelligence (AI) has transformed risk management in banking by enhancing **fraud detection, credit scoring, and predictive risk assessment**. Traditional fraud detection and credit evaluation models have struggled to keep pace with evolving financial crimes and dynamic customer behaviours. AI-driven solutions, such as **machine learning, deep learning, and natural language processing (NLP)**, provide real-time monitoring, accurate anomaly detection, and improved credit risk evaluation. By integrating AI with banking operations, financial institutions can strengthen security, reduce fraudulent activities, and expand financial inclusion. However, challenges related to **data privacy, ethical biases, and regulatory compliance** remain critical concerns that require ongoing attention.

### RECOMMENDATIONS

To maximize AI's potential in banking risk management, the following strategies are recommended:

1. **Enhancing AI Transparency and Explainability** – Banks should adopt **explainable AI (XAI)** models to improve trust and regulatory compliance.
2. **Strengthening Cybersecurity and Data Privacy** – Implementing **robust encryption, secure AI models, and compliance frameworks** can safeguard customer data and prevent misuse.
3. **Reducing AI Bias and Ensuring Fairness** – Regular audits and diverse training datasets can mitigate discriminatory biases in AI-driven credit scoring.
4. **Investing in AI-Driven Regulatory Compliance** – AI-powered automation should be used to streamline compliance processes, ensuring adherence to evolving financial regulations.
5. **Continuous AI Model Improvement** – Financial institutions must **regularly update and refine AI algorithms** to keep pace with emerging fraud patterns and risk factors.

By implementing these recommendations, banks can **harness AI's full potential** while ensuring ethical, secure, and efficient risk management practices.

### REFERENCES

1. Arner, D. W., Barberis, J., & Buckley, R. P. (2017). **FinTech, RegTech, and the reconceptualization of financial regulation.***Northwestern Journal of International Law & Business, 37*(3), 371-413.
2. Baesens, B., Van Gestel, T., Stepanova, M., &Vanthienen, J. (2016). **Credit risk analytics: Measurement techniques, applications, and examples in SAS.** Wiley.
3. Brynjolfsson, E., & McAfee, A. (2017). **The business of artificial intelligence: What it can—and cannot—do for your organization.***Harvard Business Review*, 95(4), 3-11.
4. Goodfellow, I., Bengio, Y., &Courville, A. (2016). **Deep learning.** MIT Press.
5. Gupta, J., &Tham, T. (2019). **AI and machine learning in banking: Unlocking the power of data.** Wiley.
6. Jagtiani, J., & Lemieux, C. (2019). **The roles of big data and machine learning in bank supervision.***Journal of Economics and Business, 105*, 100831. https://doi.org/10.1016/j.jeconbus.2018.11.002

ISSN 2394 - 7780

7. Khandani, A. E., Kim, A. J., & Lo, A. W. (2010). **Consumer credit-risk models via machine-learning algorithms.***Journal of Banking & Finance, 34*(11), 2767-2787. https://doi.org/10.1016/j.jbankfin.2010.06.001

8. Leong, K., & Sung, A. (2018). **FinTech (Financial Technology): What is it and how to use technologies to create business value in fintech way?***International Journal of Innovation, Management and Technology, 9*(2), 74-78. https://doi.org/10.18178/ijimt.2018.9.2.791

9. Lin, W., Hsu, S., &Yeh, Y. (2021). **Machine learning for credit scoring: Improving financial risk prediction.***Journal of Risk and Financial Management, 14*(2), 45. https://doi.org/10.3390/jrfm14020045

10. Varian, H. R. (2014). **Big data: New tricks for econometrics.***Journal of Economic Perspectives, 28*(2), 3-28. https://doi.org/10.1257/jep.28.2.3

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# A STUDY OF LEADERSHIP ENGAGEMENT IN DIVERSITY & INCLUSION AND ITS IMPACT ON BUSINESS PERFORMANCE

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## 1. INTRODUCTION

In today's globalized business environment, multinational corporations (MNCs) operate within diverse cultural and demographic landscapes. A diverse workforce fosters creativity, innovation, and problem-solving, while inclusive practices ensure that employees feel valued and empowered. Research has shown that organizations with strong diversity and inclusion (D&I) policies outperform competitors in financial performance, employee engagement, and customer satisfaction. However, despite growing awareness of D&I's benefits, many MNCs struggle with effective implementation due to challenges such as resistance to change, unconscious biases, and a lack of leadership commitment.

Leadership plays a critical role in shaping an inclusive workplace by influencing organizational policies, hiring practices, and overall corporate culture. The success of D&I initiatives largely depends on leadership engagement in fostering collaboration and reducing workplace biases. This study examines the impact of leadership on business outcome with respect of diversity management, diversity & inclusion dimensions and diversity & inclusion promotion methods used in multinational corporations (MNCs) of Pune City.

The research focuses on MNCs in Pune across industries such as IT, manufacturing, and services. Primary data was collected from 50 professionals across various organizations, and conclusions were drawn based on the findings, offering practical implications for organizations seeking to strengthen their D&I efforts.A hypothesis-driven approach is used to assess the relationship between leadership involvement and business outcomes, contributing valuable insights into best practices for fostering workplace inclusivity.

**The objective of the study as follows:**

- To examine the involvement of leadership in promoting diversity and inclusion (D&I) within multinational corporations (MNCs) of Pune City.
- To assess the prioritization of diversity dimensions such as gender, age, ethnicity, disability, sexual orientation, and religion in organizational D&I initiatives.
- To analyse the impact of leadership commitment on business outcomes related to diversity management in multinational corporations (MNCs) of Pune City.

## 2. LITERATURE REVIEW

Diversity and inclusion (D&I) have become critical aspects of organizational success in multinational corporations (MNCs). Research highlights that effective leadership plays a pivotal role in fostering an inclusive workplace, influencing organizational policies, and promoting diverse talent (Syed &Özbilgin, 2019). This literature review explores existing studies relevant to the study's objectives, focusing on leadership's role in D&I, challenges in implementation, diversity dimensions, promotion methods, and business outcomes.

### 2.1 Leadership's Role in Promoting Diversity and Inclusion

Leadership commitment is a fundamental driver of successful diversity management. Studies suggest that transformational leadership styles, which emphasize vision, inclusivity, and empowerment, are particularly effective in fostering diversity (Bass & Riggio, 2006). Inclusive leaders create environments where diverse employees feel valued and respected, enhancing engagement and reducing workplace biases (Shore et al., 2018). However, some organizations struggle with leadership buy-in, where diversity initiatives exist but lack senior management support, limiting their long-term effectiveness (Nishii, 2013).

### 2.2Prioritization of Diversity Dimensions

Organizations often focus on certain diversity dimensions over others. Research indicates that gender, age, and ethnicity are the most commonly prioritized diversity factors in corporate D&I initiatives (Ely & Thomas, 2020). However, other dimensions such as disability, sexual orientation, and religion receive comparatively less attention, leading to gaps in comprehensive inclusion efforts (Williams & O'Reilly, 2018). A balanced approach that incorporates all diversity dimensions is essential for creating an inclusive workplace that benefits all employees.

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### 2.3Impact of Leadership Commitment on Business Outcomes

Studies consistently demonstrate that strong leadership commitment to diversity leads to better business performance. Companies with diverse leadership teams outperform competitors in innovation, revenue, and customer satisfaction (McKinsey & Company, 2020). Employee engagement and productivity also increase in inclusive workplaces where leadership actively promotes diversity (Herring, 2009). Statistical analyses confirm that leadership involvement in D&I positively correlates with organizational success, emphasizing the need for leadership-driven diversity initiatives (Gonzalez & DeNisi, 2009).

Despite extensive research on leadership in diversity management, gaps remain in understanding sustained leadership commitment, especially in underrepresented diversity dimensions like disability and sexual orientation. Additionally, while leadership's impact on business outcomes is recognized, specific dimensions that drive measurable success require further exploration, necessitating a deeper investigation into leadership-driven D&I initiatives.

## 3. RESEARCH METHODOLOGY

This study adopts a mixed-method research approach, integrating both quantitative and qualitative methodologies to provide a comprehensive analysis of diversity and inclusion (D&I) practices in multinational corporations (MNCs) in Pune. The target population comprises professionals from various industries, including IT, manufacturing, and services, with a total of 50 respondents selected through stratified sampling to ensure representation across different scale of organization. Primary data was collected through structured surveys administered to Employees and HR professionals to assess perceptions of D&I initiatives and semi-structured interviews with senior leaders to understand their approach to diversity management. Quantitative data was analysed using frequency distributions, while hypothesis testing was conducted through a Chi-square test to examine the relationship between leadership involvement and the impact of D&I initiatives on business outcomes.

## 4. DISCUSSION

This study provides insights into the current landscape of diversity management across various industries, highlighting key trends, challenges, and best practices. The findings reflect a growing emphasis on diversity and inclusion, yet certain gaps remain that require further attention.

### 4.1 Organization Size and Diversity Management

**Table 1 -** Frequency Distribution of Size of Organization

| Size of Organization | Count |
|---|---|
| Less than 100 employees | 17 |
| More than 1000 employees | 15 |
| 100-500 employees | 10 |
| 500-1000 employees | 8 |

***Source*** – Primary data

The responses were fairly distributed across organization sizes, with smaller firms (<100 employees) leading (17), followed by large enterprises (>1000 employees) (15). Table 1 indicates that diversity management is a concern for both small and large organizations, though implementation strategies may differ. Mid-sized companies (100-1000 employees) also showed significant engagement, suggesting that diversity management is a universal issue rather than being confined to large corporations.

### 4.2Leadership Role in Diversity Management

**Table 2 -** Frequency Distribution of Leadership Role in Diversity Management

| Leadership Involvement | Count |
|---|---|
| Actively Involved | 43 |
| Not Very Involved | 5 |

***Source*** – Primary data

Leadership involvement is a crucial factor in promoting diversity, Table 2 indicates 43 respondents have active leadership engagement. However, 5 respondents noted that leadership is not very involved, which suggests that while many organizations recognize the role of leadership in fostering diversity, some still face a lack of commitment from top management. Strengthening leadership accountability in diversity efforts could further enhance diversity and inclusion initiatives.

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**4.3Diversity Dimensions Prioritized**

**Table 3 -** Frequency Distribution of Diversity Dimensions Prioritized

| Diversity Dimension | Count |
|---|---|
| Gender | 17 |
| Age | 16 |
| Ethnicity/Nationality | 15 |
| Disability | 7 |
| Sexual Orientation | 6 |
| Religion | 9 |

***Source*** – Primary data

From Table 3, Gender (17), age (16), and ethnicity (15) were the most frequently considered diversity dimensions, reflecting a broad organizational focus on demographic diversity. However, disability (7), sexual orientation (6), and religion (9) were less prioritized, indicating potential gaps in comprehensive diversity efforts. Organizations may need to expand their inclusion strategies to address underrepresented diversity dimensions.

**4.4 Impact of diversity management on business outcomes**

**Table 7 -** Frequency Distribution of Impact on Business Outcome

| Impact Rating (Scale 1-5) | Count |
|---|---|
| 5 (Very Positive) | 19 |
| 4 | 17 |
| 3 | 6 |
| 2 | 5 |
| 1 (No Impact) | 1 |

***Source*** – Primary data

The perceived impact of diversity management on business outcomes was rated highly by the majority, with 19 respondents considering it "very positive" (5), followed by 17 who rated it as "positive" (4). This strong favourability (75%) indicates that organizations recognize diversity as a key driver of employee engagement, innovation, and business success. However, a smaller group of respondents rated the impact as neutral (6) or low (5), with 1 respondent perceiving no impact at all. These responses from Table 4suggest that while diversity initiatives exist, some organizations struggle with measuring their effectiveness or fully integrating them into business strategies. Strengthening diversity efforts through leadership commitment, clear performance metrics, and enhanced communication of diversity benefits could further reinforce its positive impact on organizational success.

**4.8 Hypothesis Testing**

**Null Hypothesis ($H_0$):**
There is no significant relationship between leadership involvement in diversity management and the impact of diversity management on business outcomes.

**Alternative Hypothesis ($H_1$):**
There is a significant relationship between leadership involvement in diversity management and the impact of diversity management on business outcomes.

**Chi-Square Test Results: Leadership Role vs. Impact of Diversity Management**

**Table 8**–Chi Square Test Result

| Statistic | Value |
|---|---|
| **Chi-Square ($\chi^2$)** | 16.23 |
| **p-value** | 0.0027 |
| **Degrees of Freedom (df)** | 4 |
| **Significance Level** | 0.05 |
| **Result** | Significant Relationship |

***Source*** – Primary data

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**Interpretation:**Since the **p-value (0.0027) is less than 0.05**, we conclude that there is a **statistically significant relationship** between leadership involvement in diversity management and the impact of diversity management on business outcomes.

## 5. CONCLUSION

The findings of this study underscore the growing recognition of diversity management as a critical factor in organizational success across industries. While organizations of all sizes actively engage in diversity initiatives, the level of prioritization and implementation strategies vary. The majority of respondents perceive diversity management as highly important, with leadership playing a crucial role in fostering inclusive workplaces. However, gaps remain in addressing underrepresented diversity dimensions such as disability, sexual orientation, and religion.

Organizations predominantly rely on inclusive hiring, training programs, and mentorship to promote diversity, yet underutilization of employee resource groups and cultural celebrations suggests areas for improvement. The primary challenges identified include resistance to change, language barriers, and cultural differences, emphasizing the need for targeted training and inclusive leadership.

Moreover, the statistical analysis confirms a significant relationship between leadership involvement and the perceived impact of diversity management on business outcomes. This reinforces the necessity of strong leadership commitment in driving successful diversity initiatives. To enhance the effectiveness of diversity management, organizations must focus on measurable outcomes, increased leadership accountability, and comprehensive inclusion strategies that go beyond demographic diversity. By addressing these areas, businesses can further harness the benefits of a diverse workforce, fostering innovation, engagement, and long-term success.

## 6. REFERENCES


- Bass, B. M., & Riggio, R. E. (2006). Transformational Leadership (2nd ed.). Psychology Press.
- Ely, R. J., & Thomas, D. A. (2020). Getting serious about diversity: Enough already with the business case. Harvard Business Review, 98(6), 114-122.
- Gonzalez, J. A., & DeNisi, A. S. (2009). Cross-level effects of demography and diversity climate on organizational attachment and firm effectiveness. Journal of Organizational Behavior, 30(1), 21-40.
- Herring, C. (2009). Does diversity pay? Race, gender, and the business case for diversity. American Sociological Review, 74(2), 208-224.
- McKinsey & Company. (2020). Diversity wins: How inclusion matters. McKinsey & Company.
- Nishii, L. H. (2013). The benefits of climate for inclusion for reducing turnover among diverse employees. Group & Organization Management, 38(3), 348-377.
- Shore, L. M., Randel, A. E., Chung, B. G., Dean, M. A., Ehrhart, K. H., & Singh, G. (2018). Inclusion and diversity in work groups: A review and model for future research. Journal of Management, 44(6), 1898-1933.
- Syed, J., &Özbilgin, M. (2019). Managing diversity and inclusion: An international perspective. Sage Publications.
- Williams, K. Y., & O'Reilly, C. A. (2018). Demography and diversity in organizations: A review of 40 years of research. Research in Organizational Behavior, 38, 77-102.

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# ASSESSMENT OF STUDENTS IN VIRTUAL MODE THROUGH DATA MINING AND OPINION MINING METHODS"

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## I.ABSTRACT
*When it comes to assessing students' academic achievement and participation, the shift to virtual learning has created new difficulties. This study investigates how data mining and opinion mining methods can be used to evaluate students in a virtual setting. The study offers insights into learning efficacy, student engagement, and areas for development through the analysis of both organized academic data and unstructured student input. The results demonstrate how these strategies might improve online teaching approaches and forecast student performance.*

***Keyword:*** *Data Mining, Opinion Mining, Virtual Learning, Student Evaluation, Machine Learning.*

## II. INTRODUCTION
The swift uptake of virtual learning environments (VLEs) has made it crucial to evaluate student performance and feedback. The subtleties of online learning experiences are not adequately captured by traditional assessment methods. This work intends to combine opinion mining to extract sentiments from student comments with data mining approaches to examine structured educational data (such as grades, attendance, and interaction logs). In virtual learning environments, this combined method offers a thorough assessment of students.

Educational institutions produce enormous volumes of data about students' academic achievement, attendance, engagement, and other behavioral characteristics in the age of digital transformation. Subjective tests and instructor observations are the mainstays of traditional student evaluation techniques, which may not adequately reflect students' learning potential and progress. Data mining techniques have become a potent tool for analyzing educational data in order to improve the efficacy and accuracy of student evaluations.Finding significant patterns, trends, and insights in massive datasets is the goal of data mining, a branch of artificial intelligence and machine learning. Teachers can make data-driven decisions by using data mining to uncover hidden links between different academic and non-academic aspects in student evaluation systems. Institutions may evaluate student performance, identify at-risk kids early, and offer individualized learning experiences by leveraging classification algorithms, clustering techniques, and predictive analytics.

In order to improve academic assessment, early intervention tactics, and overall educational outcomes, this article examines the use of data mining techniques in student evaluation systems. While addressing issues like data privacy and ethical implications, the study also covers a variety of data mining methods utilized in this field, such as support vector machines, decision trees, and neural networks.

## III.RELATED WORK
Data mining techniques have been used in a number of research to predict student performance in conventional settings. Opinion mining has also been used in recent studies to examine how students feel about online learning. However, there is still a lack of research on a combined framework that uses both data mining and opinion mining to assess students in a virtual setting. This study develops a hybrid strategy by drawing on previous literature.

## IV. METHODOLOGY

### A. Data Collection

**In the first step, information is gathered from a variety of educational sources, such as:**
1. Academic records of students, including grades, test results, and assignments
2. Logs of attendance
3. Interactions on online learning platforms
4. Demographic and behavioral information
5. Comments from peers and instructors

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6. Survey results, institutional databases, and learning management systems (LMS) can all provide data. Only well-documented, high-quality datasets are taken into consideration to guarantee trustworthiness.

- **Structured Data**

Academic records, attendance logs, completed assignments, discussion participation, and test results are examples of structured data.

- **Unstructured Data**

Student reviews, comments, discussion boards, and survey answers are examples of unstructured data.

**B. Preprocessing**

**The accuracy of the analysis may be impacted by the discrepancies, missing numbers, or redundant information that are frequently found in raw data. Among the preprocessing actions are:**

1. Data cleaning includes handling missing values, getting rid of duplicates, and fixing mistakes.
2. Data transformation includes aggregating pertinent attributes, encoding categorical data, and normalizing numerical values.
3. Finding important factors that have a major influence on student performance is known as feature selection.
4. Data partitioning is the process of dividing the dataset into subgroups for testing and training in order to assess the model.
5. To eliminate discrepancies, structured data must be cleaned and normalized.
6. Sentiment analysis, tokenization, and stop-word elimination for unstructured data.

**C. Data Mining Techniques**

**Following data preparation, a variety of data mining techniques are used to glean insightful information:**

1. Classification Algorithms: Students are categorized using decision trees, neural networks, support vector machines (SVM), and Naïve Bayes according to their learning styles or performance levels.
2. Clustering Techniques: To support individualized learning strategies, K-means and hierarchical clustering assist in assembling students with comparable learning styles.
3. Association Rule Mining: The FP-Growth and Apriori algorithms find connections between performance outcomes and study habits.
4. Predictive Analytics: Regression analysis and machine learning models anticipate future student performance and pinpoint at-risk kids.

**D. Model Evaluation and Validation**

**Several performance measures are used to evaluate how well the applicable data mining algorithms are working, including:**

1. Accuracy: Indicates how well pupils are classified by the model.
2. Precision and Recall: Assess the accuracy of forecasts for particular student groups.

3. For improved decision-making, the F1-Score strikes a balance between recall and precision.
4. To improve models, the Confusion Matrix examines categorization errors.
5. To prevent overfitting and guarantee model dependability, cross-validation methods like k-fold validation are used.

**E. Interpretation and Implementation**

Ultimately, the data mining models' observations are analyzed to offer educators practical suggestions. The results are applied to:

1. Create early intervention plans for students who are at danger.
2. Adapt learning paths to each student's needs.
3. To improve academic results, institutional policies should be improved.

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Educational institutions can improve teaching strategies, maximize learning opportunities, and promote improved academic achievement by incorporating data-driven decision-making into student evaluation.

### F. Opinion Mining Techniques

- **Sentiment Analysis:**

Classifying student comments as positive, neutral, or negative using Natural Language Processing (NLP) methods such as VADER, TextBlob, and BERT.

- **Topic Modelling:**

Use Latent Dirichlet Allocation (LDA) to find important themes in the answers provided by the students.

## V. RESULTS AND DISCUSSION

Using data mining techniques, the study examines performance measures and student involvement. The findings of opinion mining shed light on typical student choices and worries regarding online education. Important elements impacting students' success in an online environment are shown by the relationship between formal performance data and unstructured feedback.

## VI. CONCLUSION AND FUTURE WORK

This study shows how well data mining and opinion mining strategies work together to evaluate students virtually. Future research will concentrate on expanding the study to various educational situations and enhancing sentiment analysis accuracy through the use of deep learning models.The ability of educational institutions to assess student performance, forecast learning outcomes, and offer individualized learning experiences has been greatly improved by the incorporation of data mining techniques into student evaluation systems. Predictive analytics, clustering techniques, and classification algorithms are tools that teachers can use to detect at-risk pupils early, customize interventions, and raise academic success rates.

Several phases of the data mining process, such as data collection, preprocessing, model application, and evaluation, have been examined in this work. Utilizing methods like association rule mining, decision trees, and neural networks has proven to be successful in gleaning insightful information from student-related data. Furthermore, these models are guaranteed to produce accurate and useful results through the use of performance indicators like accuracy, precision, recall, and F1-score.

Notwithstanding its benefits, data mining in education has drawbacks, including ethical issues, data protection issues, and the requirement for high-quality datasets. Institutions must establish strong data governance procedures, guarantee prediction model transparency, and encourage responsible AI use in order to address these issues.

## REFERENCES

[1] J. Han, M. Kamber, and J. Pei, "Data Mining: Concepts and Techniques," Elsevier, 2011.

[2] B. Liu, "Sentiment Analysis and Opinion Mining," Morgan & Claypool, 2012.

[3] R. Agrawal, T. Imieliński, and A. Swami, "Mining Association Rules between Sets of Items in Large Databases," in Proceedings of the ACM SIGMOD Conference, 1993.

[4] A. M. Rashid et al.,"Student Performance Prediction in Virtual Learning Environments,"IEEE Transactions on Learning Technologies, 2020.

[5] Yupei Zhang, Yue Yun, Rui An, Jiaqi Cui, Huan Dai, Xuequn Shang. “Educational Data Mining Techniques for Student Performance Prediction: Method Review and Comparison Analysis” *Journal:* Frontiers in Psychology, 2021

[6] Muhammad Haziq Bin Roslan, Chwen Jen Chen.“Educational Data Mining for Student Performance Prediction: A Systematic Literature Review (2015-2021)”. International Journal of Emerging Technologies in Learning (iJET), 2022.

[7] N D Lynn, A W R Emanuel. “Using Data Mining Techniques to Predict Students' Performance: A Review”. IOP Conference Series: Materials Science and Engineering, 2021.

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# A STUDY ON IMPACT OF CULTURAL DIVERSITY ON EMPLOYEE PERFORMANCE IN PUNE'S TRANSPORT INDUSTRY

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## ABSTRACT
*Cultural diversity in the workplace is increasingly recognized for its role in enhancing productivity and innovation. This study examines its impact on employee performance within Pune's transport industry, a sector with a highly diverse workforce. By analyzing key performance indicators across demographic factors such as gender and educational qualifications, the research explores how diversity influences efficiency, teamwork, and job satisfaction. A survey of 90 employees was conducted, with correlation tests revealing a moderate positive relationship (r = 0.501, p = 0.000) between cultural diversity and employee performance. The study finds that postgraduates demonstrate the highest mean performance scores, likely due to stronger problem-solving skills and adaptability. Gender-based differences further highlight the need for inclusive policies ensuring equal opportunities. These insights emphasize the importance of fostering a diverse and inclusive work environment to improve engagement and productivity. Industry leaders can leverage these findings to develop strategies that enhance organizational growth and service quality.*

***Keywords:*** *Cultural Diversity, Employee performance, Pune, Transport Industry.*

## INTRODUCTION
Cultural diversity shapes workplace dynamics and performance in Pune's transport sector. While it fosters innovation and service quality, challenges like language barriers and cultural differences can hinder teamwork. Effective diversity training and communication strategies enhance engagement, productivity, and long-term success, making inclusivity a strategic advantage for the industry.

## REVIEW OF LITERATURE

1. **Pulekar, D., & Savale, T. K. (2025).** The study examines how aligning organizational culture with performance influences behavior, productivity, engagement, and job satisfaction while preventing turnover and inefficiency.
2. **Kundu, S. C., & Mor, A. (2017).** The study explores how employee perceptions of diversity, particularly gender diversity initiatives, positively impact organizational performance in India's IT sector.
3. **Khumalo, P. M., & Zondo, R. W. D. (2021).** The study examines cultural diversity's impact on South Africa's automotive sector, finding it enhances organizational performance, strategic decision-making, and innovation.

## RESEARCH GAP
Research on cultural diversity's impact in Pune's transport sector is limited. Most studies focus on IT and manufacturing, neglecting industry-specific challenges and productivity links.

## RESEARCH METHODOLOGY
This quantitative study examines cultural diversity's impact on employee performance in Pune's transport industry, analyzing 90 employees' demographics, diversity perceptions, and performance. Pearson correlation (r = 0.501, p = 0.000) confirms a significant positive relationship, guiding HR strategies for workplace inclusion and enhanced organizational effectiveness.

## DATA ANALYSIS

**Table 1:** Demographic Factor

| Particular | Statement | Frequency | Percent |
|---|---|---|---|
| Age | Up to 25 Years | 25 | 27.8 |
| | 26 to 35 Years | 34 | 37.8 |
| | 36 to 45 Years | 21 | 23.3 |
| | Above 45 Years | 10 | 11.1 |
| Gender | Male | 57 | 63.3 |
| | Female | 33 | 36.7 |
| Experience | Up to 5 Years | 17 | 18.9 |

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| | | | |
|---|---|---|---|
| | 6 to 10 Years | 40 | 44.4 |
| | 11 to 20 Years | 21 | 23.3 |
| | More than 20 Years | 12 | 13.3 |
| Qualification | Undergraduate | 35 | 38.9 |
| | Graduate | 44 | 48.9 |
| | Post Graduate | 11 | 12.2 |

The demographic analysis reveals Pune's transport industry has a young workforce, with most employees aged 26-35 (37.8%). The sector is male-dominated (63.3% male, 36.7% female). Experience varies, with 44.4% having 6-10 years. Most employees are graduates (48.9%), indicating adaptability in a diverse work environment.

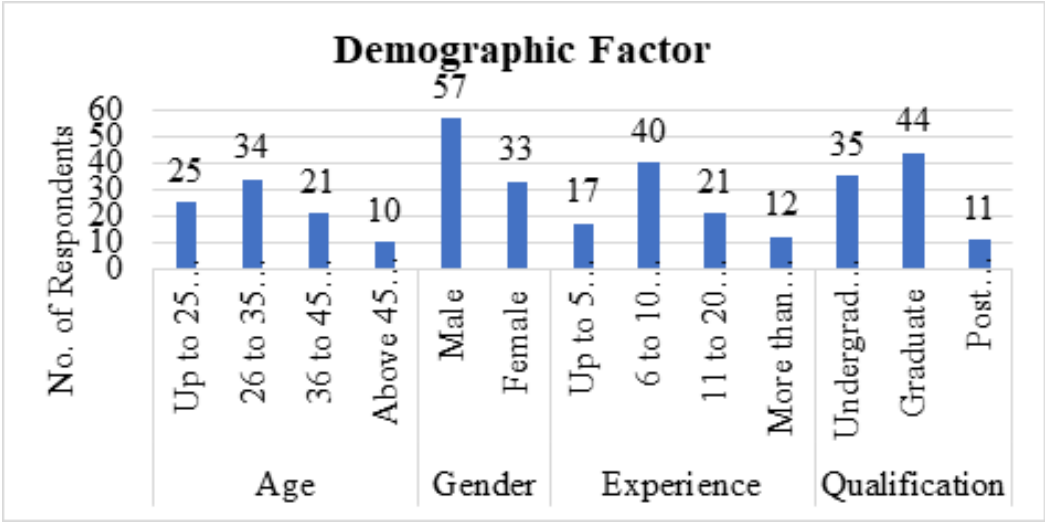


**Fig. 1**

**Objective and Hypothesis:**
Objective 1 To Study the cultural diversity according to demographic factor of employee in transport company.

**Null Hypothesis $H_{01A}$:** There is no significant difference in cultural diversity according to Gender of employee in Transport Company.

**Alternate Hypothesis $H_{11A}$:** There is a significant difference in cultural diversity according to Gender of employee in transport company.To test the above ANOVA test is applied and results are as follows.

**Table2:** ANOVA Test

| | Sum of Squares | Df | Mean Square | F | P-value |
|---|---|---|---|---|---|
| **Between Groups** | 3623.686 | 1 | 3623.686 | 20.028 | .000 |
| **Within Groups** | 15921.914 | 88 | 180.931 | | |
| **Total** | 19545.600 | 89 | | | |

**Interpretation:** The p-value (0.000) is below 0.05, rejecting the null hypothesis.

**Conclusion:** There is a significant difference in cultural diversity according to Gender of employee in Transport Company.

**Findings:** To understand the findings of hypothesis, mean score of cultural diversity according to Gender of employee in Transport Company.

**Table 3:** Gender

| Gender | Mean | N | Std. Deviation |
|---|---|---|---|
| **Male** | 76.56 | 57 | 13.276 |
| **Female** | 63.39 | 33 | 13.752 |
| **Total** | 71.73 | 90 | 14.819 |

The report shows gender differences in diversity perceptions, with males (76.56) scoring higher than females (63.39), suggesting gender influences workplace diversity experiences.

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**Null Hypothesis $H_{01B}$:** There is no significant difference in cultural diversity according to qualification of employee in Transport Company.

**Alternate Hypothesis $H_{11B}$:** There is a significant difference in cultural diversity according to qualification of employee in transport company.To test the above ANOVA test is applied and results are as follows.

**Table 4:** ANOVA

| | Sum of Squares | df | Mean Square | F | P-value |
|---|---|---|---|---|---|
| **Between Groups** | 1803.792 | 2 | 901.896 | 4.423 | .015 |
| **Within Groups** | 17741.808 | 87 | 203.929 | | |
| **Total** | 19545.600 | 89 | | | |

**Interpretation:** P-value (0.015) < 0.05; F-test rejected; Null rejected, Alternate accepted.

**Conclusion:** There is a significant difference in cultural diversity according to qualification of employee in Transport Company.

**Findings:** To understand the findings of hypothesis, mean score of cultural diversity according to qualification of employee in Transport Company.

**Table 5:** Qualification

| Qualification | Mean | N | Std. Deviation |
|---|---|---|---|
| Undergraduate | 68.23 | 35 | 11.840 |
| Graduate | 71.73 | 44 | 17.175 |
| Post Graduate | 82.91 | 11 | 5.394 |
| **Total** | **71.73** | **90** | **14.819** |

The report shows cultural diversity perceptions improve with education. Postgraduates score highest (82.91), indicating broader exposure and critical thinking enhance awareness.

**Objective 2**
To Study the Relations between Cultural Diversity and Employee Performance of employee in Transport Company.

**Null Hypothesis $H_{02}$:** There is no relationship between Cultural Diversity and Employee Performance of employee in Transport Company.

**Alternate Hypothesis $H_{12}$:** There is a relationship between Cultural Diversity and Employee Performance of employee in Transport Company.

**Table 6:** Correlations

| | | Cultural Diversity | Employee Performance |
|---|---|---|---|
| **Cultural Diversity** | Pearson Correlation | 1 | .501** |
| | P-value | | .000 |
| | N | 90 | 90 |
| **Employee Performance** | Pearson Correlation | .501** | 1 |
| | P-value | .000 | |
| | N | 90 | 90 |
| **. Correlation is significant at the 0.01 level (2-tailed). | | | |

**Interpretation:** The above results indicate that calculated p-value is 0.000. It is less than 0.05. Therefore, correlation test is rejected. Hence Null hypothesis is rejected and Alternate hypothesis is accepted.

**Conclusion:** There is a relationship between Cultural Diversity and Employee Performance of employee in Transport Company.

**Findings:** Correlation analysis shows a moderate positive relationship (r = 0.501, p = 0.000) between cultural diversity and employee performance, suggesting diversity enhances collaboration, innovation, and productivity in the workplace.

**CONCLUSION**
Cultural diversity positively impacts employee performance in Pune's transport industry, enhancing productivity, teamwork, and job satisfaction. A moderate correlation (r = 0.501, p = 0.000) highlights its

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significance. Gender and education differences necessitate inclusive HR policies. With a young, male-dominated workforce, companies can leverage diversity through training, equitable policies, and collaboration.

**BIBLIOGRAPHY**

1. Batta, A., Bandameeda, G., & Parayitam, S. (2023). Human resource management practices, job satisfaction and performance: Evidence from transportation sector in India. Vision: The Journal of Business Perspective. https://doi.org/10.1177/2319510X231166800
2. Byju, J., & Ghate, A. D. (2024). Analysis of cultural diversity and employee effectiveness in India. SDGs Review, 4(4). https://doi.org/10.47172/2965-730X.SDGsReview.v4.n04.pe03607
3. Central Ohio Transit Authority. (2023). Creating a dedicated diversity officer position. In Gender imbalance in the transport sector: A toolkit for change (pp. 54–56). Sustainable Mobility for All. https://www.sum4all.org/data/files/gender_imbalance_in_the_transport_sector_a_toolkit_for_change.pdf
4. Go-Ahead Group. (2023). Collecting and analyzing data on employee satisfaction. In Gender imbalance in the transport sector: A toolkit for change (pp. 56–57). Sustainable Mobility for All. https://www.sum4all.org/data/files/gender_imbalance_in_the_transport_sector_a_toolkit_for_change.pdf
5. Khumalo, P. M., & Zondo, R. W. D. (2021). Perception of the influence of cultural diversity on business performance in the automotive component manufacturing in South Africa. SA Journal of Human Resource Management, 19, Article a1451. https://doi.org/10.4102/sajhrm.v19i0.1451
6. Kulkarni, M. (2024). Fostering diversity, equity, and inclusion: HR's role in building inclusive organizational cultures. ShodhKosh: Journal of Visual and Performing Arts, 5(1), 298–307. https://doi.org/10.29121/shodhkosh.v5.i1.2024.3450

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# VIRTUAL ASSISTANT AND VIRTUAL ENVIRONMENT

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## ABSTRACT
*A virtualassistant is a software agent that can perform various tasks or services for an individual. Sometimesthe term "chatbot" is used to refer to virtual assistants specifically those accessed by online chat. Virtual assistants can interpret human speech respond via synthesized voices. Users canask their assistants questions, they can control home automation devices and media playback via voice, and manage other required basic tasks with verbal commands. This paper gives a brief idea about Virtual Assistant technology and its applications and challenges in different areas. Thepaper also focuses on virtual assistant types and structural elements of a virtual assistant system. In this paper I tried tostudy virtual Environment and virtual Assistant Interfaces*

***Keywords:*** *Software agent, automation devices, virtual assistants, synthesized voices.*

## INTRODUCTION
Virtual Assistants (VAs) have revolutionized human-computer interaction by providing intelligent, real-time responses in various applications. These AI-driven systems leverage Natural Language Processing (NLP), Machine Learning (ML), and Human-Computer Interaction (HCI) to assist users in both professional and personal settings.

Virtual assistants can be categorized into immersive, non-immersive, and hybrid systems, each offering different levels of interactivity and user engagement. While immersive systems replace real-world views with fully virtual environments, non-immersive systems allow users to interact with virtual elements while maintaining awareness of their physical surroundings. Hybrid systems combine both approaches, enhancing user experience through augmented environments.The growing integration of virtual assistants in sectors such as healthcare, education, business, and customer service demonstrates their increasing importance. However, challenges such as data privacy, accuracy, and user adaptability still need to be addressed.

This paper explores the types, applications, and challenges of virtual assistants, emphasizing their role in virtual environments. Additionally, it presents a literature review of existing research, analyses current advancements, and discusses potential future developments in the field.

## LITERATURE REVIEW
Virtual assistants have evolved significantly with advancements in **Artificial Intelligence (AI), Natural Language Processing (NLP), and Human-Computer Interaction (HCI)**. Several studies explore their applications, benefits, and challenges across various domains.AI and NLP in VirtualAssistantsTakawale et al. (2017) emphasize how AI and NLP enhance virtual assistants,

making them more interactive and responsive. They highlight improvements in speech recognition and machine learning algorithms that enable more personalized user experiences.

**Applications in various sectors**studied from**Chatbots.org and IJTRA** discuss virtual assistants in **education and business**, demonstrating their role in automating tasks, providing instant support, and enhancing productivity. Engpaper.com and Opus Research further explore their impact in **healthcare and customer service**, where AI-driven assistants improve patient care and streamline client interactions.

**Challenges and Future Directions**Research from **SSRN** identifies key challenges, including **data privacy, technical limitations, and user adaptability**. They emphasize the need for better security frameworks and ethical considerations to ensure responsible AI deployment. Additionally, Opus Research highlights the potential of **mixed-reality virtual assistants** and their role in immersive environments.

## RESEARCH METHODOLOGY
This research is based on a qualitative approach through an extensive literature review of existing studies on virtual assistants and virtual environments. Various scholarly articles, books, and technical reports have been analyzed to examine the structural elements, types, applications, and challenges of virtual assistants. The study systematically explores different virtual assistant systems, their integration with virtual environments, and their impact across various domains. The research does not involve empirical data collection but relies on secondary sources to present a comprehensive theoretical understanding of virtual assistants and their role in virtual environments.

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**TYPES OF VIRTUAL ASSISTANT**

Depending on the degree of interactivity and immersion we can categorize Virtual Assistant systems into three groups. These groups are immersive systems, non-immersive systems and hybrid VR systems.

1. The immersed systems replace our vision of the real world with computer generated images that interact with the Position and orientation of the user's head.
2. A non-immersive system, on the other hand, leaves the user visually aware of the real world but can observe the Virtual world through some visualization devices such as graphic workstation.
3. A hybrid VR system allows the user to see the real world with virtual images superimposed in this view. How the systems are also known as "augmented assistants" systems. A practical example is found in the HMDs used by the fighter pilot, which allow the pilot to see his external world. Simultaneously with synthetic graphics superimposed. A generic immersive VR system consists of three elements of the system that interact with each other to make everything work system These three elements are the virtual environment, the IT environment and the VR interfaces.

a. VE includes ideas such as the construction of models, the introduction of dynamic characteristics and physical constraints.

b. The computing environment includes the configuration of the processor, the I / O channels of the VE database and the real time Operating System.

c. VR interfaces include the hardware used to track the head, recognize hand gestures, and detectsounds, 3D interfaces and multi-participant systems.

**VIRTUAL ENVIRONMENT**

The virtual environment, as the name suggests, is a virtual representation of an existing or non-existent physical environment or abstract information that provides users with interactivity in real time and it also give them feel that they are part of this. Due to the interaction and behaviors that take place in the real and immersive nature of the virtual environment, there is a similarity. Behaviors that occur in real environments.VE can take many forms; for example, it could be the realistic representation of some physical environments like the Interior of a building, a kitchen or even an object such as a car. It could be that the EV has no physical basis absolutely. For example, it could be a 3D database of a hierarchical geographical network that describes a multinational company. Company is associated with stock transactions. Whatever the nature of the underlying data, a geometric model is required to represent atomic entities and their relations to each other. Based on this geometric model a geometric database must be constructed to represent the environment and stored in such a way that it can be recovered and rendered in real time when required. The database that a VE store includes 3D geometry, color and texture,dynamic characteristics, physical restrictions and acoustic attributes.HMD, BOOM, CAVE is common virtual assistants. Current environments and the virtual world are an imminent technology in virtual environments.

**• HMD:**

The head-mounted device was the first device to create and provide the user with an invisible world of virtual assistant. In 1965, Evans and Sutherland introduced a screen mounted on the head for the first time. The HMD device consists of two miniaturized screens. Screens and optical system. These two components channel images from the screens to the eyes, presenting stereoscopic image.

**• BOOM:**

The Omni-Orientation Binocular Monitor (BOOM) of the false space is a high resolution stereoscopic vision device. The screens and the optical system are housed in a box that is connected to a multi-link arm. The user looks through the box. Two holes see the virtual world and can drive the box in any position within the operating volume of the device.

The head is located by means of sensors in the connections of the arm that contains the box.

**• CAVE:**

Cave Virtual Environment (CAVE) is an immersive virtual assistance installation designed for exploration of interaction with environments that involve space. Basically, the CAVE includes four projection surfaces.

In which the images are projected with a unique and enveloping design.

**• Virtual globe:**

The virtual globe is a 3D software model or a representation of the Earth or another world.

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## APPLICATIONS FOR VIRTUAL ASSISTANT

1. The virtual domain offers ease of access reliability, compactness and security, speed and it can easily transmitted toother virtual domains for example computers located in far-away parts of the world.
2. Because of these facts, Virtual Assistant technology has been a promising technology applicable in various domains of application.

Some of the most popular domains of application are human factors research, training simulators, engineering, medical and health care, defense education, ergonomics and, database and entertainment industry and scientific visualization.

3. Training simulators are used for planes, submarines, power plants, surgery, endoscopes and air traffic controls. Simulationlike this uses a copyof the real time computer to model its dynamics.
4. Training through simulation provides significant benefits over other methods. Hazardous environment, such as anuclear power station or an aircraft landing in a fog can be accurately simulated without any danger to the trainee.
5. Analysis using virtual endoscopy is one of the areas that can achieve clinical competencenowadays.
6. Many medical professionals can learn new skills and refreshing existing ones in a safe environment. Plusit allows them that without causing any danger to the patient, medical professionals can record improvement stages in the body of the patient.
7. Nowadaysmany educationinstitutes has adopted virtual assistant for teaching and learning aspects.

## VIRTUAL CHALLENGES OF THE REALITY

The virtual assistant can lead to cutting-edge technologies such as second life. In fact, the Second Life virtual assistant program. It poses new challenges to more than millions of users, including economic interactions, communication methods and documentation. In other words, Second Life is a multi-user virtual environment or MUVE.

**• Technical Challenges:**

Due to proprietary communication protocols, it is not possible to use a network caching / proxy service to reduce it network load Cost is another problem.

**• Cultural Challenges:**

Issues of responsibility are still being discussed in virtual worlds. In Second Life, you can buy private land. Private land can be limited to authorize users only.

## DATA ANALYSIS

This study analyzes virtual assistant technology by categorizing and comparing different systems—immersive, non-immersive, and hybrid. Through a systematic literature review, various aspects, including interaction methods, structural components, and real-world applications, are examined. The analysis identifies the strengths and limitations of virtual assistants in domains such as healthcare, education, and customer service. Furthermore, ethical concerns like data privacy and user consent are considered in assessing the adoption and efficiency of virtual assistants.

## FINDINGS

The study reveals that virtual assistants are evolving with advancements in artificial intelligence, natural language processing, and human-computer interaction. Immersive virtual environments enhance user engagement, while hybrid systems bridge the gap between real and virtual interactions. The research also highlights challenges such as technical limitations, ethical concerns, and cultural implications in adopting virtual assistants across industries. Future developments are expected to improve interactivity, accuracy, and integration, making virtual assistants more efficient and widespread.

## CONCLUSION

Virtual assistants have become an essential part of modern technology, integrating artificial intelligence, natural language processing, and immersive virtual environments. This study explored their structural components, applications, and challenges across various domains such as healthcare, education, and customer service. While virtual assistants offer enhanced user interaction and efficiency, challenges such as technical limitations and ethical concerns remain. Future advancements in AI, machine learning, and human-computer interaction are expected to improve their capabilities, making them more adaptive and effective in real-world applications.

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Continued research and innovation will be crucial in addressing existing limitations and expanding their potential uses.

**REFERENCES**

1. https://www.bbvaresearch.com/wp-content/uploads/

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A Study on Virtual Assistant in Artificial

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2. https://www.chatbots.org/papers/

3. http://www.ijtra.com/view/artificially-intelligent-college-oriented-virtual-assistant.pdf

4. http://www.engpaper.com/artificial-intelligence-research-papers-2012.htm

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Liu, W.B, Wongcha A, & Peng, K.C. (2012), "Adopting Super-Efficiency And Tobit Model On Analyzing the Efficiency of Teacher's Colleges In Thailand", International Journal on New Trends In Education and Their Implications, Vol.3.3, 108 – 114.

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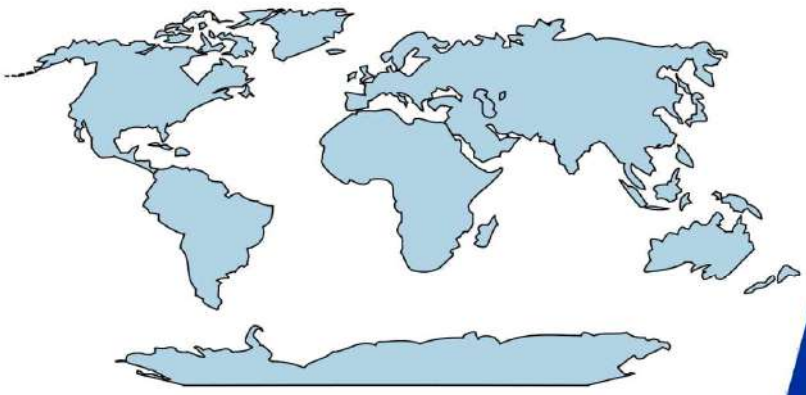

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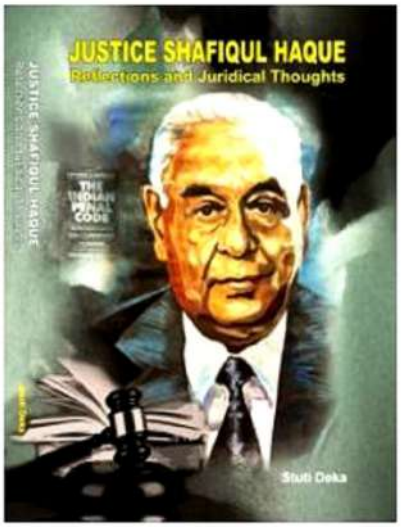


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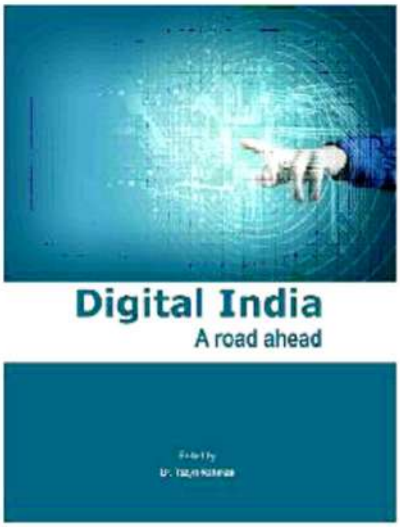


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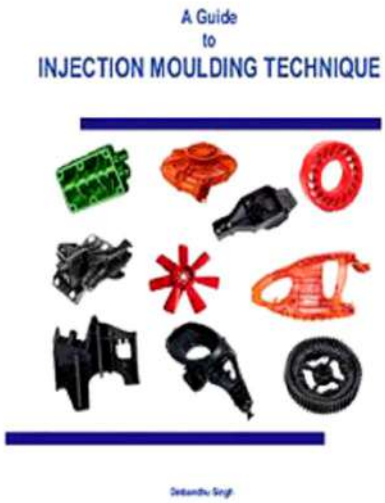


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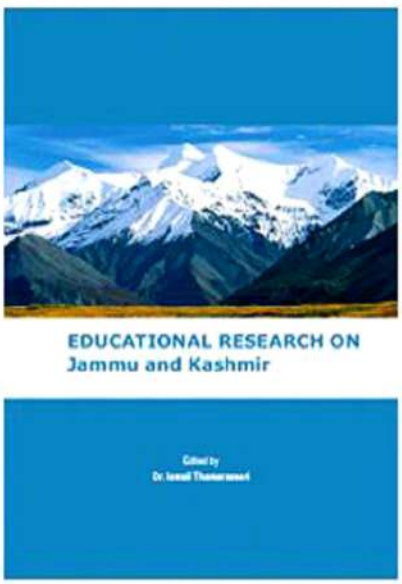


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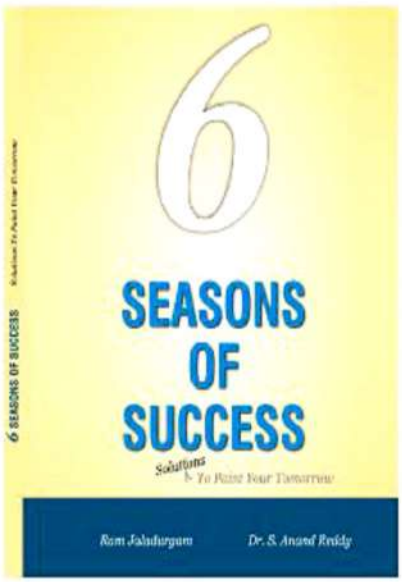


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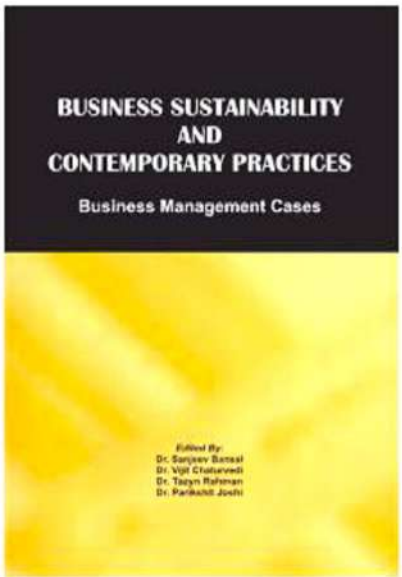


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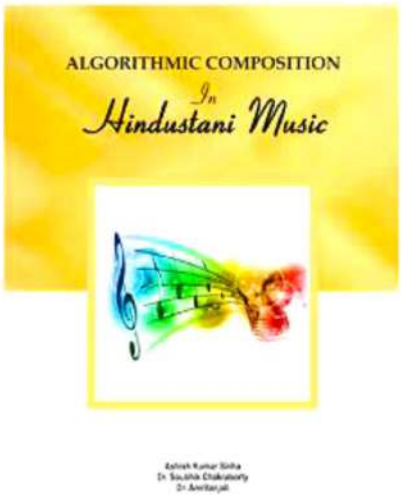


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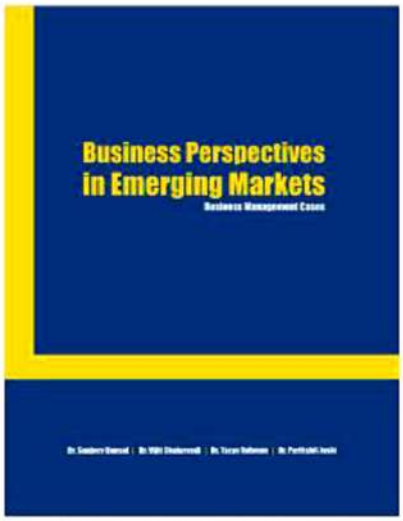


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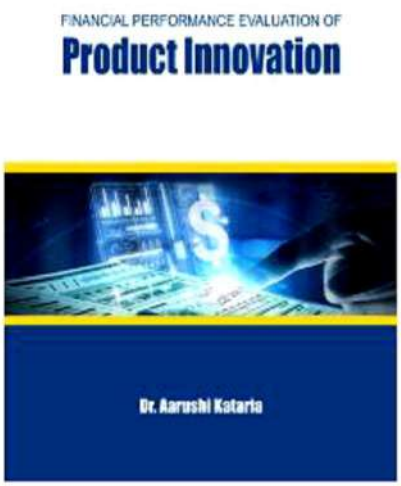


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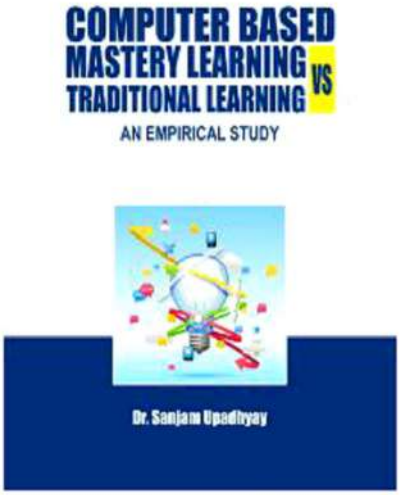


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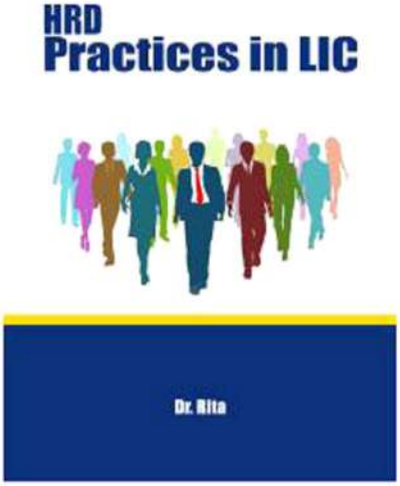


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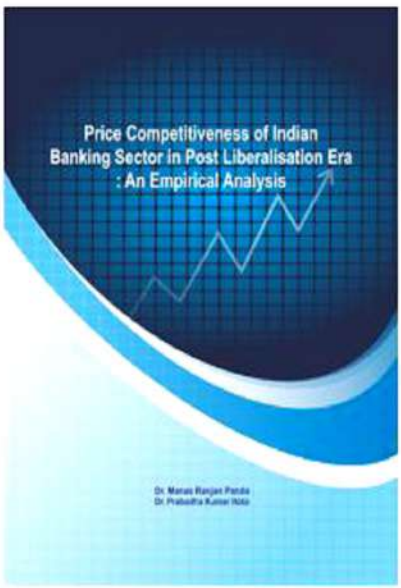


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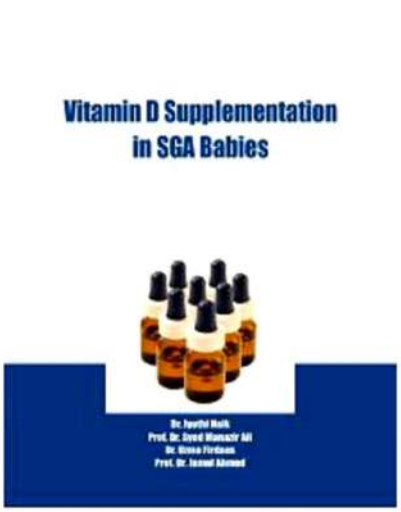


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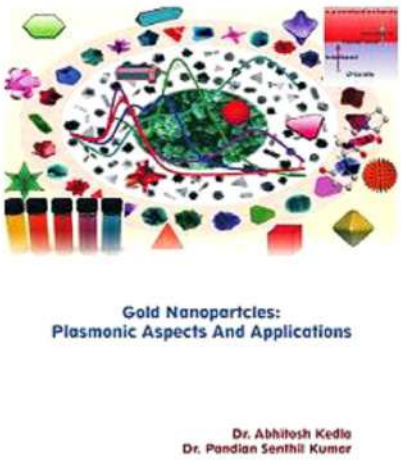


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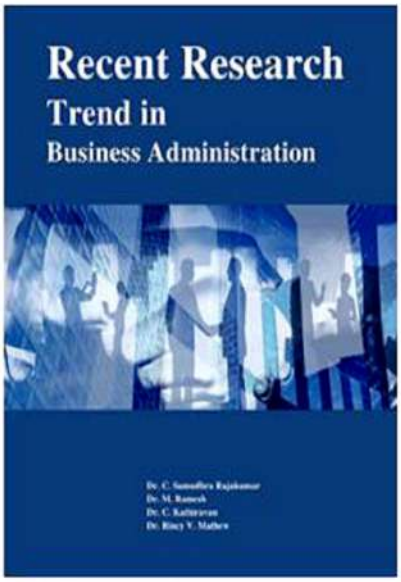


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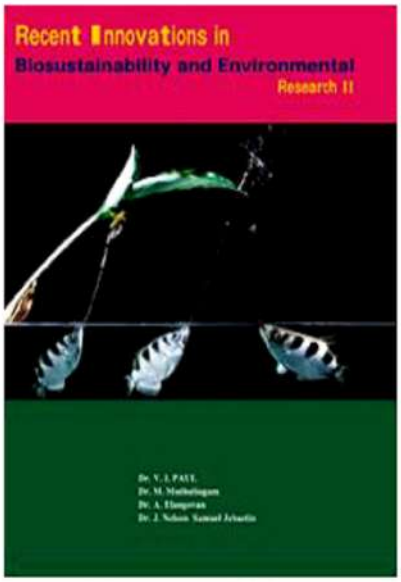


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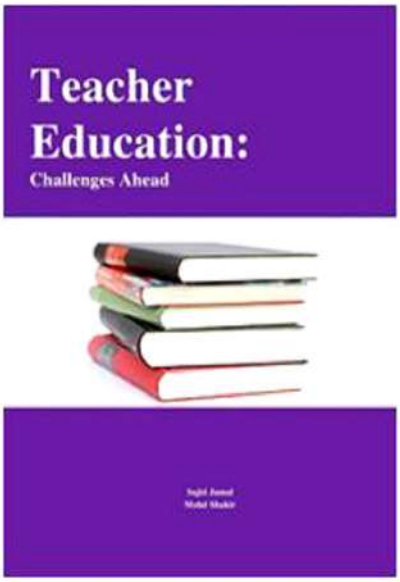


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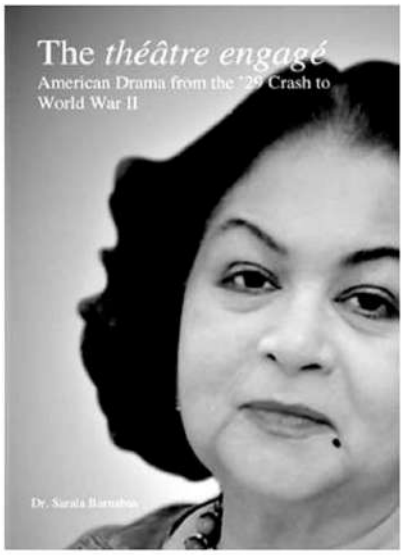


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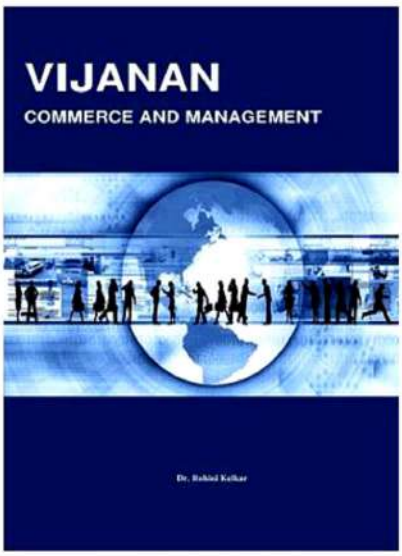


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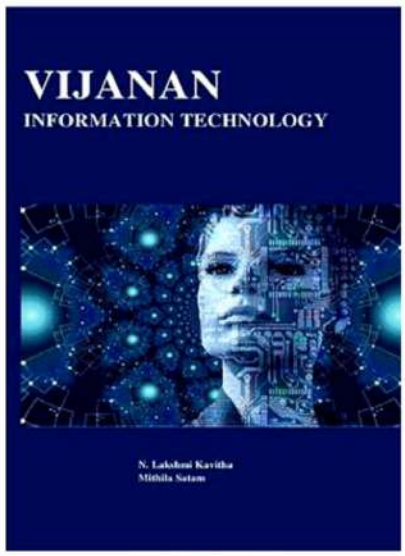


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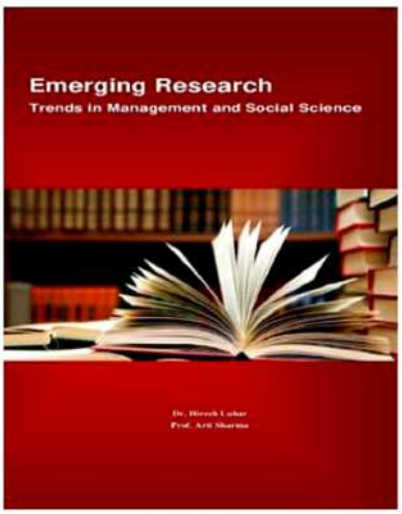


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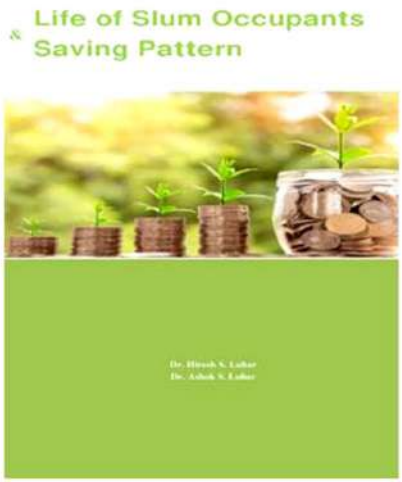


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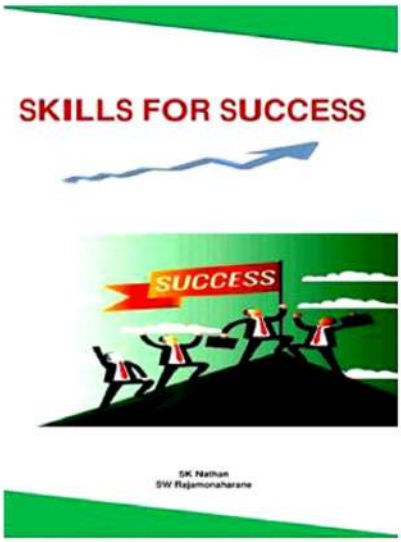


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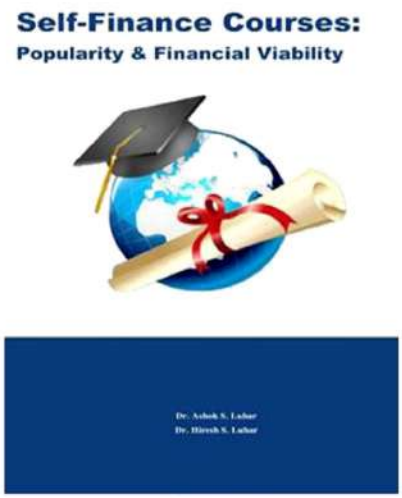


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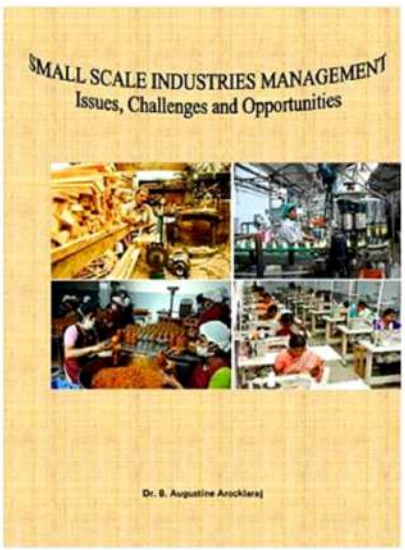


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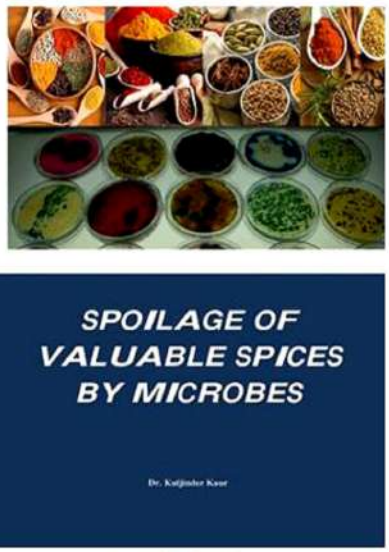


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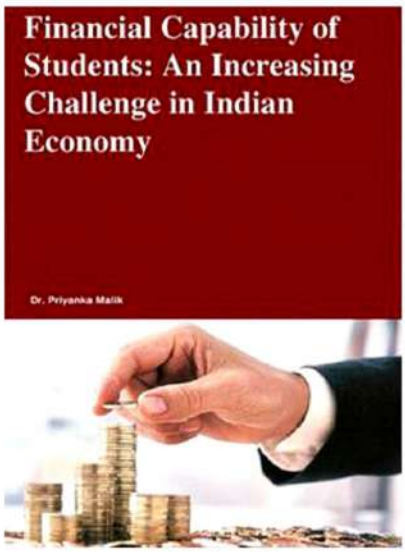


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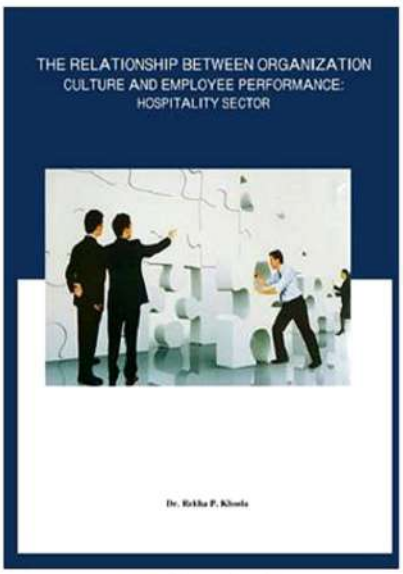


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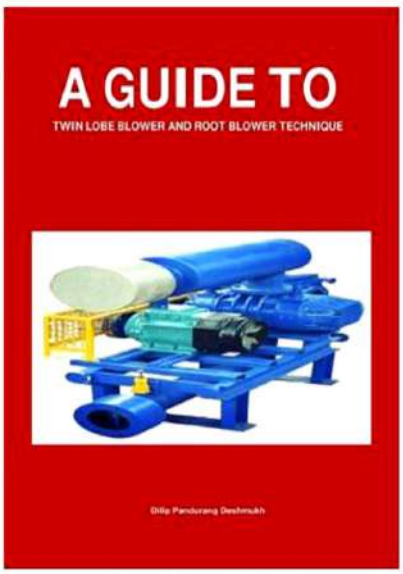


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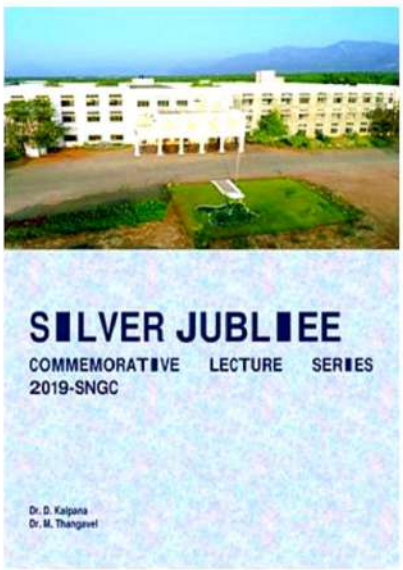


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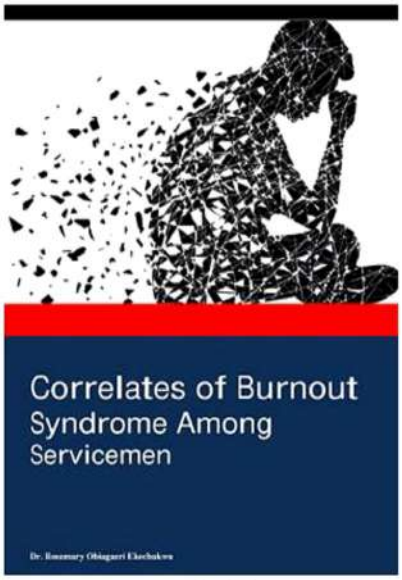


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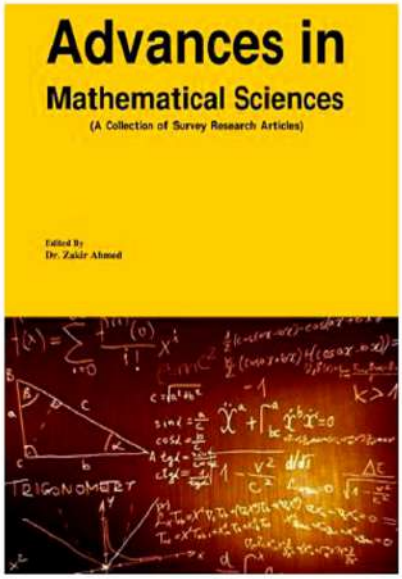


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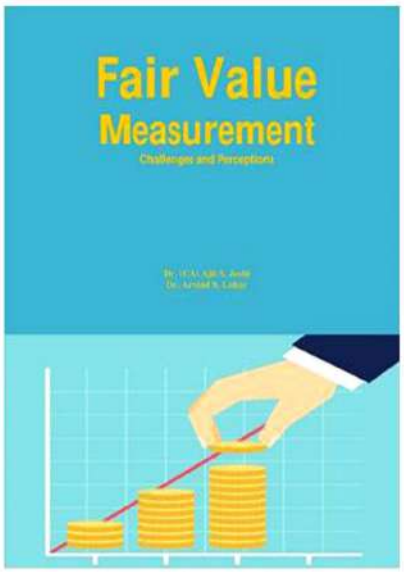


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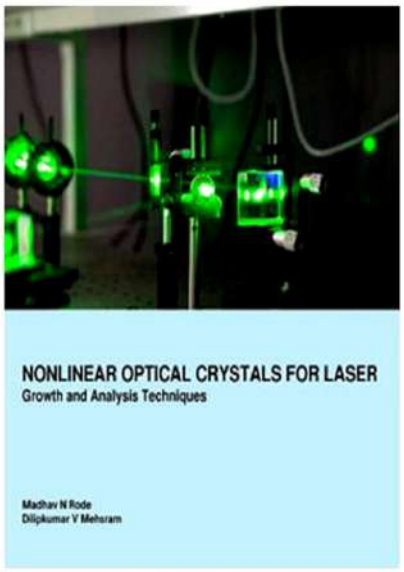


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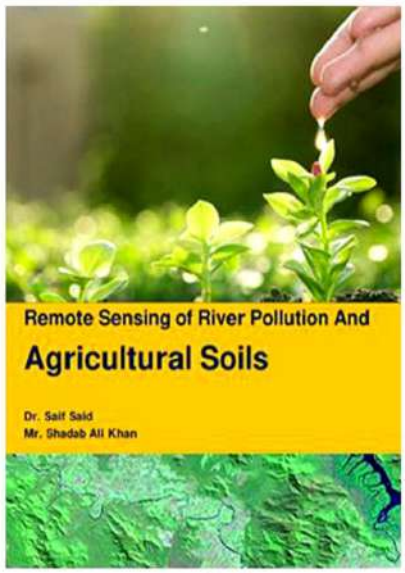


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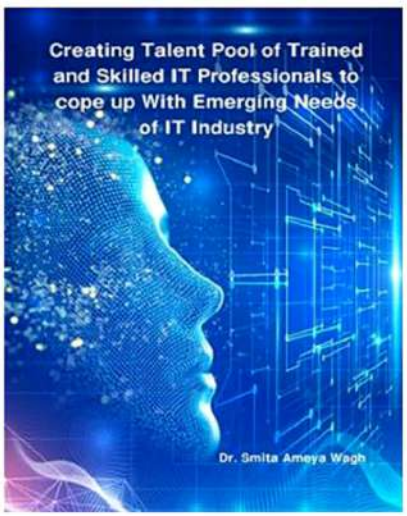


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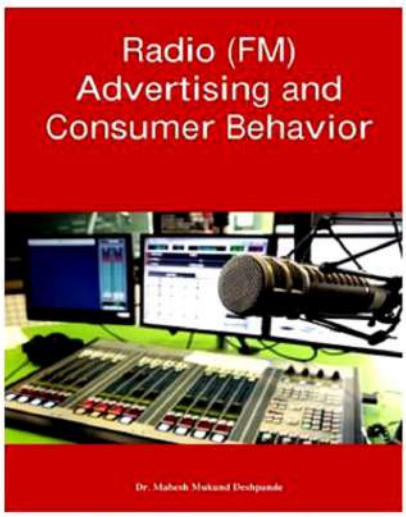


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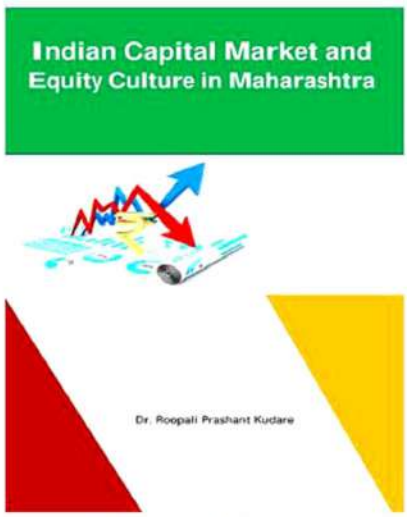


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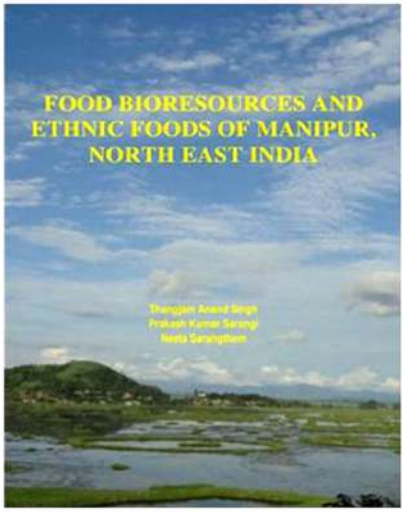


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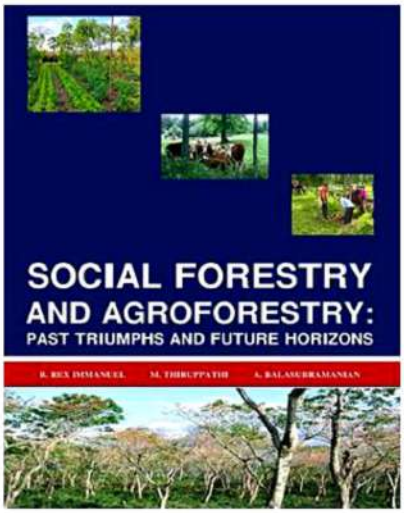


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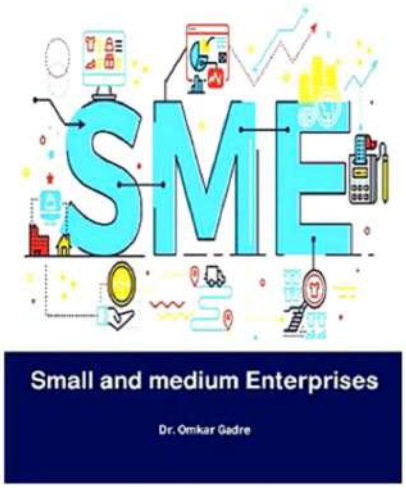


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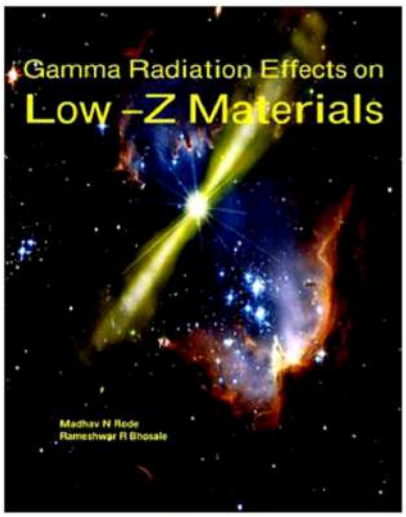


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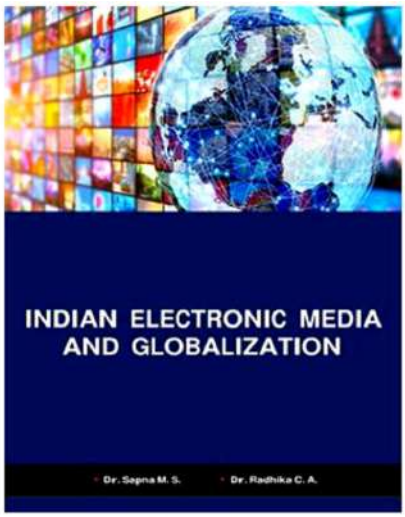


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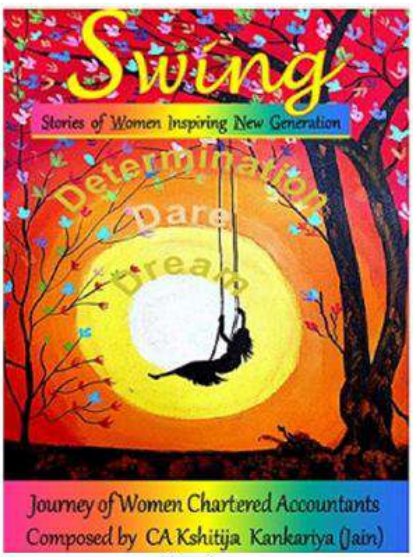


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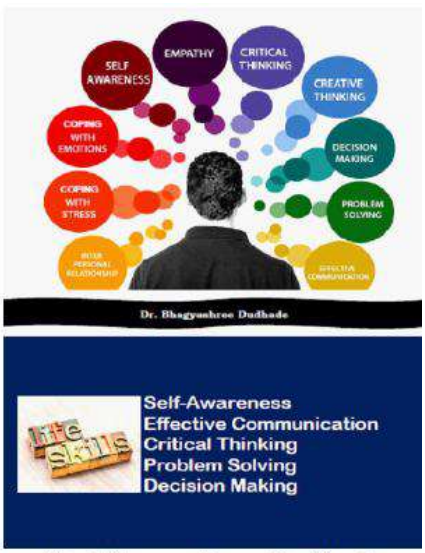


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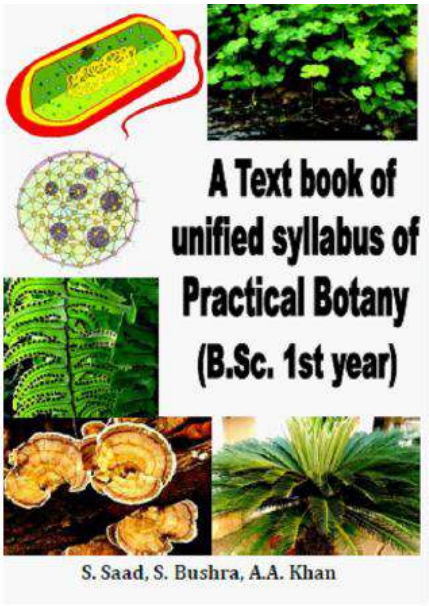


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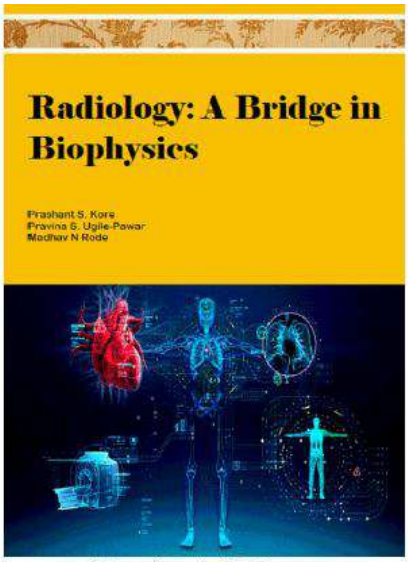


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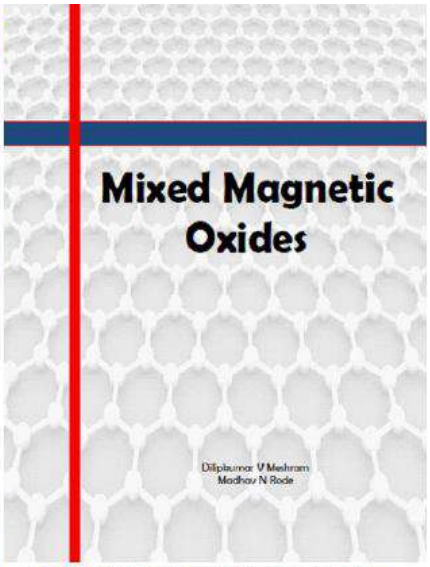


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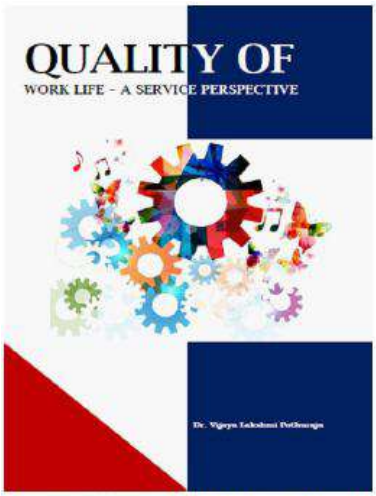


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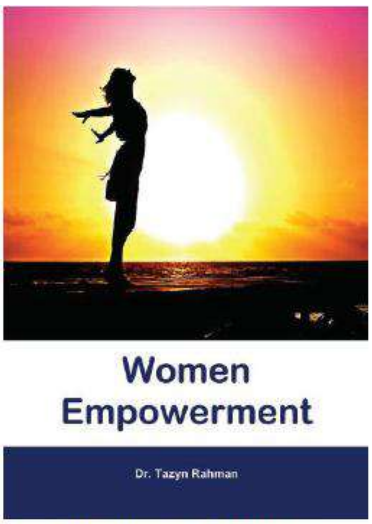


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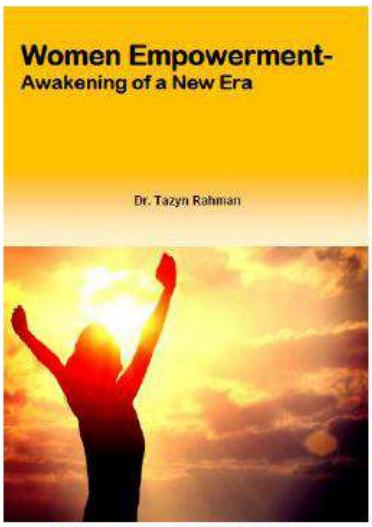


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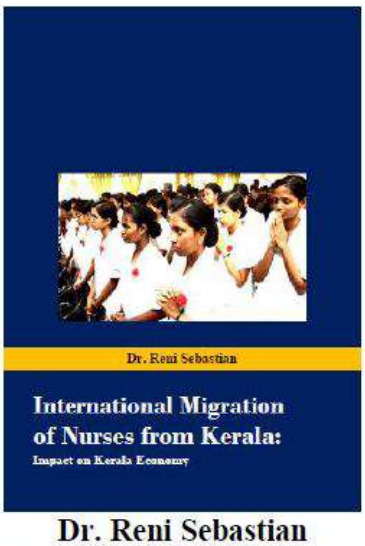


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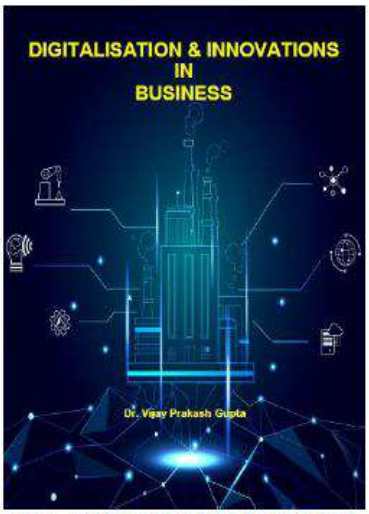


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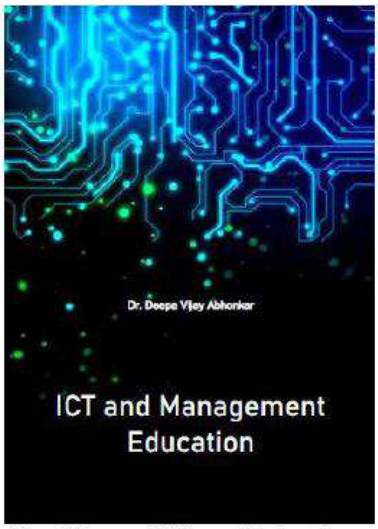


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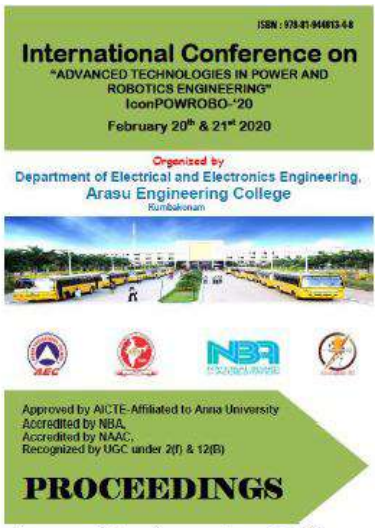


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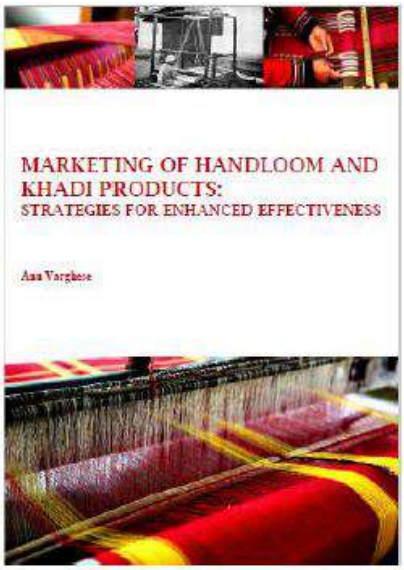


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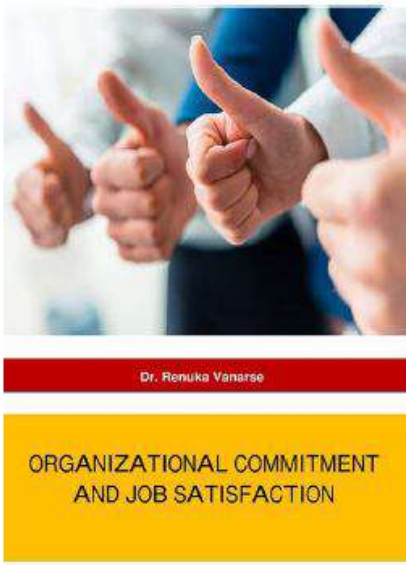


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