View of Space International Multidisciplinary Journal of Applied Research
ISSN (Print): 2320-7620
"Peer Reviewed & Refereed Journal"

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ISSN (Print): 2320-7620
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DETAILS OF JOURNAL	
Journal Title	View of Space International Multidisciplinary Journal of Applied Research
Starting Year	**2013**
Frequency	Monthly
Publication Format	**Print**
Subject Area	Multidisciplinary
Language	Multiple Languages
Publisher Name	Ananta Group of Journals
Publisher Address	Block No. 503, Shree laxmi palace, Zanzarda Road, Junagadh – 362001, Gujarat, India
Publisher Email	anantagroupofjournals@gmail.com

Published By
ANANTA GROUP OF JOURNALS
Block No. H-10, Janakpuri Apartment,
Zanzarda Road, Junagadh – 362001, Gujarat, India
Email: anantagroupofjournals@gmail.com
Dr. Mital Patel - 9879422702
Website: https://anantagoj.org/

View of Space International Multidisciplinary Journal of Applied Research

ISSN (Print): 2320-7620

"Peer Reviewed & Refereed Journal"

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AND INFORMATION RESOURCES
(Council of Scientific and Industrial Research)
14, Satsang Vihar Marg, New Delhi 110 067 &
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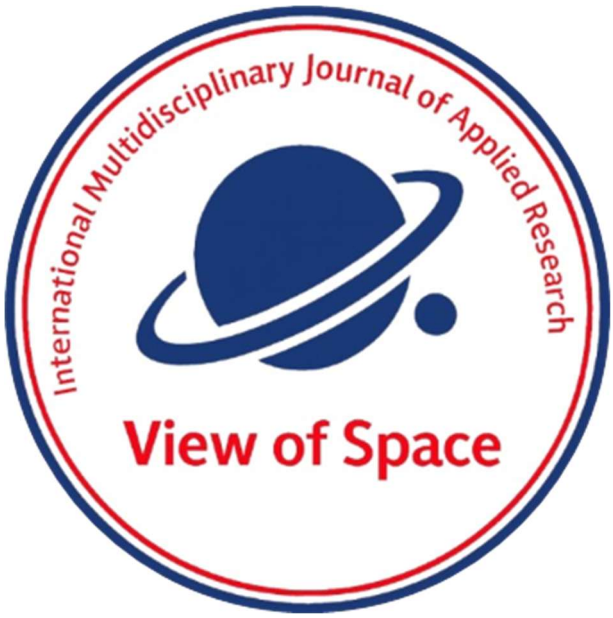
ISSN (Print): 2320-7620
"Peer Reviewed & Refereed Journal"



ISSN (Print): 2320-7620
"Peer Reviewed & Refereed Journal"
Published : Every Month

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CORPORATE SOCIAL RESPONSIBILITY AND BRAND PERCEPTION IN THE BANKING SECTOR: AN EMPIRICAL STUDY ON CUSTOMER AWARENESS, TRUST, AND LOYALTY IN INDIAN COMMERCIAL BANKS

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ABSTRACT

Corporate Social Responsibility (CSR) has emerged as a strategic instrument in the banking sector, shaping stakeholder relationships, social legitimacy, and competitive positioning. For banks operating in a highly regulated, trust-driven environment, CSR initiatives not only serve societal objectives but also influence customer perception, corporate reputation, and loyalty. This study examines the relationship between CSR engagement and brand perception among banking customers in India. A **survey-based empirical design** was employed, using primary data from **380 bank customers** across public and private sector banks. The study analyzes the influence of CSR awareness on perceived corporate reputation, trust, and loyalty intention using descriptive statistics, correlation analysis, and multiple regression.

The findings indicate that although **69.2% of respondents are moderately aware of their bank's CSR activities**, detailed knowledge remains limited. CSR initiatives related to **financial literacy, rural development, education, and environmental sustainability** were perceived as most meaningful. The analysis reveals a **significant positive relationship between CSR perception and brand trust ($r = .61$, $p < .01$)**, and between CSR perception and customer loyalty intention ($r = .54$, $p < .01$). Regression results confirm that **CSR perception is a strong predictor of brand perception and loyalty**, even after controlling for service quality satisfaction. The study concludes that CSR enhances symbolic value and emotional attachment in banking relationships, reinforcing trust-based engagement. The paper recommends strengthening CSR communication, stakeholder participation, and community-linked initiatives to deepen brand credibility in the Indian banking sector.

KEYWORDS: CORPORATE SOCIAL RESPONSIBILITY, BANKING SECTOR, BRAND PERCEPTION, CUSTOMER TRUST, LOYALTY, INDIA, STAKEHOLDER ENGAGEMENT

INTRODUCTION

Corporate Social Responsibility (CSR) has gained prominence in recent decades as firms increasingly recognize their broader obligations toward society beyond financial performance and shareholder value. In India, CSR has acquired additional significance following the **Companies Act, 2013**, which institutionalized CSR spending among eligible firms. While CSR is widely discussed in manufacturing and extractive industries, it holds particular strategic value in the **banking sector**, where public trust, ethical conduct, and social legitimacy are central to organizational sustainability.

Banks operate as custodians of public deposits, credit providers, and financial intermediaries supporting economic development. Given their systemic role, stakeholders expect banks to engage in socially responsible initiatives that promote financial inclusion, community development, environmental stewardship, and ethical governance. CSR initiatives are therefore not only philanthropic but also **relational and reputational assets**, shaping how customers perceive and evaluate banking brands.

The emergence of digital banking, competitive financial markets, and heightened consumer expectations have intensified the role of **non-financial value drivers** such as trust, image, and social commitment. CSR communication and stakeholder orientation are increasingly integrated into branding strategies to differentiate institutions in a largely service-homogeneous industry.

This study examines how CSR initiatives influence **customer awareness, brand trust, reputation perception, and loyalty intention** within the Indian banking sector. It provides empirical evidence on whether CSR serves as a meaningful determinant of brand perception among bank customers.

OBJECTIVES OF THE STUDY

To assess the level of customer awareness regarding CSR initiatives of banks.
To identify CSR domains perceived as most meaningful by customers.
To analyze the relationship between CSR perception and **brand trust, reputation, and loyalty**.
To examine whether CSR perception significantly predicts customer loyalty intention.
To offer strategic recommendations for strengthening CSR-based brand positioning in banks.

SCOPE OF THE STUDY

The study focuses on customers of **public and private sector banks in India** and analyzes CSR perception from the demand-side (consumer viewpoint) rather than internal CSR policy evaluation.

REVIEW OF LITERATURE

CSR has evolved from philanthropic activity to strategic stakeholder-oriented practice embedded in corporate governance and Brand management. Scholars define CSR as organizational responsibility toward economic, legal, ethical, and discretionary expectations of society. In service sectors such as banking, CSR initiatives contribute to **reputation enhancement, trust formation, and relational value**. Studies indicate that CSR influences **brand image, emotional attachment, and customer loyalty**, particularly in industries characterized by intangible offerings and high reliance on credibility. Researchers have documented that CSR initiatives aligned with community welfare, education, environmental sustainability, and financial inclusion enhance organizational legitimacy.

Empirical findings suggest that customers who perceive their bank as socially responsible demonstrate **higher satisfaction, trust, and advocacy intentions**. However, awareness gaps often limit CSR impact, highlighting the importance of effective stakeholder communication and participatory engagement.
Existing literature also suggests that CSR complements service quality by reinforcing ethical identity and symbolic value rather than substituting functional performance.

The present study contributes to this scholarship by providing **empirical evidence from Indian banking customers**, examining CSR-brand perception linkages through behavioural indicators.

RESEARCH METHODOLOGY

Research Design

The study adopts a **descriptive and empirical survey design**.

Sample and Sampling Technique

Primary data were collected from **380 customers** of selected public and private sector banks using **convenience sampling** across urban and semi-urban locations.

Data Collection Instrument

A structured questionnaire consisted of four sections:

demographic profile
CSR awareness and perception
brand trust and reputation items
loyalty intention scale
CSR perception and brand constructs were measured using **five-point Likert scales** adapted from validated literature sources.

Data Analysis Techniques

Descriptive statistics and percentage analysis
Pearson correlation
Multiple regression analysis
Reliability testing (Cronbach's alpha)
Data were analyzed using spreadsheet-based statistical tools.

Data Analysis & Interpretation

Demographic Profile

Among respondents:
55.8% male, 44.2% female
64.3% aged 25–45 years
Representation included salaried employees, students, small business owners, and professionals

CSR Awareness Level

High awareness — 24.7%
Moderate awareness — **44.5%**
Low awareness — 30.8%
Most respondents associated CSR activities with:
education scholarships
rural development initiatives
environmental programs
financial literacy drives

Reliability of Measurement Scales

Cronbach's alpha values:
CSR perception scale = **0.86**
Brand trust scale = 0.84
Loyalty intention scale = 0.82
Values indicate acceptable internal consistency.

Correlation Analysis

Variable Relationship	Correlation (r)	Significance
CSR perception ↔ Brand trust	**0.61**	$p < 0.01$
CSR perception ↔ Brand reputation	0.57	$p < 0.01$
CSR perception ↔ Loyalty intention	**0.54**	$p < 0.01$

The results reveal **strong positive associations** between CSR perception and brand-related outcomes.

Regression Analysis

A multiple regression model was applied with **loyalty intention as dependent variable** and CSR perception & service quality satisfaction as predictors.
CSR perception (β = **0.42**, $p < 0.01$)
Service quality satisfaction ($\beta = 0.31$, $p < 0.01$)
Model $R^2 = 0.46$
CSR perception emerged as a **significant predictor** of loyalty even after controlling service satisfaction.

Qualitative Insights

Selected open-ended responses revealed that customers view CSR initiatives as **signals of ethical responsibility**, increasing confidence in long-term association with banks. Respondents particularly valued CSR projects that directly benefit **local communities and financial inclusion**.

FINDINGS & DISCUSSION

The study demonstrates that CSR initiatives exert meaningful influence on **brand trust, reputation, and loyalty** in the banking sector. Customers interpret CSR engagement as reflective of ethical intent and social commitment, reinforcing emotional and relational attachment.

Although overall awareness remains moderate, those familiar with CSR programs hold **stronger positive brand perceptions**. CSR functions as a **symbolic value enhancer**, complementing functional service performance rather than replacing it.

The findings align with stakeholder theory and reputation-building literature, confirming CSR as a strategic branding lever in trust-based industries such as banking.

CONCLUSION & SUGGESTIONS

CSR plays a **strategic and relational role** in shaping brand perception within the Indian banking sector. Customers who perceive their bank as socially responsible exhibit **higher trust and loyalty intention**. However, limited awareness constrains CSR impact.

SUGGESTIONS

Strengthen **CSR communication and transparency** through digital portals and branch displays.
Align CSR initiatives with **community-centric and financial inclusion priorities**.
Encourage **stakeholder participation and beneficiary engagement**.
Integrate CSR narratives into **brand identity and relationship marketing**.
Establish **impact-assessment mechanisms** to evaluate societal outcomes.

SCOPE FOR FUTURE RESEARCH

Future studies may adopt longitudinal models, cross-bank comparisons, or integrate employee perception of CSR–brand alignment.

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CLASSROOM ASSESSMENT PRACTICES AND STUDENT LEARNING OUTCOMES

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ABSTRACT

Assessment is a vital component of the teaching–learning process, guiding instructional decisions, measuring student progress, and shaping educational outcomes. Effective classroom assessment practices go beyond grading; they aim to support learning, foster motivation, and enhance self-regulation. This paper examines the relationship between classroom assessment practices and student learning outcomes, with a particular focus on formative assessment, feedback, and assessment for learning (AfL). Drawing upon Black and Wiliam's formative assessment model, Bloom's mastery learning theory, and contemporary constructivist perspectives, it explores how assessment influences cognitive, behavioral, and affective dimensions of learning. The analysis synthesizes empirical studies from global educational contexts to identify best practices that improve achievement, engagement, and equity. Findings indicate that formative, feedback-rich, and student-centered assessment significantly improve learning outcomes when integrated into daily instruction. The paper concludes with practical recommendations for designing and implementing effective assessment practices that promote deep learning and academic excellence.

KEYWORDS: CLASSROOM ASSESSMENT, FORMATIVE ASSESSMENT, STUDENT LEARNING OUTCOMES, FEEDBACK, ASSESSMENT FOR LEARNING, PEDAGOGY

INTRODUCTION

Assessment is often described as the "heartbeat" of education — an ongoing process that connects teaching and learning. In modern pedagogy, classroom assessment is no longer confined to the measurement of knowledge acquisition; it has evolved into a tool for promoting student engagement, reflection, and growth (Black & Wiliam, 1998).

The effectiveness of any educational system depends not only on curriculum design and instruction but also on the quality of its assessment practices. **Classroom assessment** encompasses various methods — quizzes, projects, self-assessments, and peer evaluations — designed to monitor learning progress and inform instruction (Stiggins, 2005).

This paper investigates how classroom assessment practices influence student learning outcomes. It examines theoretical foundations, research findings, and pedagogical implications to show that effective assessment must be formative, inclusive, and aligned with learning objectives.

REVIEW OF LITERATURE

Theoretical Foundations of Classroom Assessment

Bloom's Mastery Learning Theory (1968):

Bloom emphasized that all students can achieve mastery if provided with appropriate instruction and corrective feedback. Assessment should therefore diagnose learning gaps and guide targeted intervention.

Constructivist Perspective (Vygotsky, 1978):

Learning is a social process where assessment functions as scaffolding to support cognitive development. Formative assessment enables teachers to identify learners' *Zone of Proximal Development (ZPD)* and adapt teaching accordingly.

Black and Wiliam's Formative Assessment Model (1998):

They proposed that formative assessment improves learning by providing feedback that helps students understand where they are, where they need to go, and how to get there. This feedback loop is central to "assessment for learning" rather than "assessment of learning."

TYPES AND FUNCTIONS OF ASSESSMENT

Classroom assessments can be categorized as:

Formative Assessment: Conducted during learning to provide feedback for improvement.
Summative Assessment: Conducted after instruction to evaluate mastery.
Diagnostic Assessment: Used to determine students' prior knowledge.
Peer and Self-Assessment: Encourage metacognitive awareness and learner autonomy.

Formative assessment has been consistently shown to have the greatest positive effect on learning outcomes (Hattie & Timperley, 2007).

Formative Assessment and Learning Outcomes

Formative assessment bridges instruction and learning through feedback, reflection, and adjustment. Studies reveal that formative assessment enhances academic achievement, particularly when feedback is specific, timely, and actionable (Shute, 2008).

Black and Wiliam (1998) demonstrated that effective formative assessment can raise student achievement by 0.4–0.7 standard deviations, benefiting low-performing students most significantly.

Feedback and Student Motivation

Feedback is a critical component of assessment that shapes motivation and engagement. According to Hattie and Timperley (2007), effective feedback answers three key questions:

Where am I going?
How am I going?
Where to next?

Constructive feedback promotes self-efficacy and intrinsic motivation, while overly critical feedback may cause anxiety and disengagement (Brookhart, 2008).

Assessment for Learning (AfL)

AfL emphasizes the integration of assessment into instruction. It empowers students to monitor their own progress through reflection, peer collaboration, and goal-setting (Wiliam, 2011).

Research shows that AfL enhances metacognition and self-regulation, essential components of lifelong learning (Earl, 2013).

CHALLENGES IN CLASSROOM ASSESSMENT

Despite its potential, effective assessment faces challenges:

Overemphasis on standardized testing reduces formative opportunities.
Teachers often lack training in assessment design.
Large class sizes limit personalized feedback.
Cultural perceptions of assessment as judgment hinder open dialogue (Stiggins, 2005).

RESEARCH METHODOLOGY

This study employs a **systematic qualitative synthesis** of literature published between 1990 and 2024. Databases including *ERIC, Scopus, SpringerLink,* and *Google Scholar* were used.

Keywords: "classroom assessment," "formative assessment," "feedback," and "student achievement."
A total of 70 peer-reviewed studies were reviewed; 50 were included based on methodological rigor and relevance. Data were analyzed thematically to identify relationships between assessment practices and student learning outcomes.

DATA ANALYSIS AND INTERPRETATION

Theme 1: Formative Assessment and Student Achievement

Formative assessment enables teachers to adjust instruction based on students' needs. According to Black and Wiliam (1998), formative strategies such as questioning, peer feedback, and exit tickets lead to significant learning gains.

Studies show that students exposed to regular formative assessment outperform peers assessed solely through summative methods (Hattie, 2009).

Theme 2: Feedback as a Learning Catalyst

Feedback bridges the gap between current and desired performance. Shute (2008) found that immediate, specific, and process-oriented feedback increases motivation and understanding.

For instance, feedback that emphasizes strategies ("Try outlining your essay before writing") is more effective than evaluative comments ("This is weak"). Formative feedback enhances students' sense of agency and ownership.

Theme 3: Self and Peer Assessment

Self-assessment promotes metacognitive awareness by helping students evaluate their progress. When students assess peers, they engage in reflective dialogue, reinforcing learning objectives (Earl, 2013).

These practices also reduce teacher dependency and build learner autonomy — key predictors of long-term academic success.

Theme 4: Technology-Enhanced Assessment

Digital tools such as Learning Management Systems (LMS) and automated quizzes provide instant feedback and data analytics. These tools support personalized learning and allow teachers to track progress effectively (Boud & Molloy, 2013).

However, reliance on automated systems must be balanced with human judgment to ensure contextual understanding and empathy in evaluation.

Theme 5: Teacher Assessment Literacy

Teachers' ability to design and interpret assessments—known as *assessment literacy*—is crucial. Popham (2009) emphasizes that assessment literacy enables educators to align assessment with learning goals, interpret data meaningfully, and provide constructive feedback.

Professional development programs that enhance assessment literacy contribute directly to improved student outcomes.

FINDINGS AND DISCUSSION

The synthesis reveals that assessment practices significantly influence student learning when embedded within instructional processes.

Key findings include:

Formative assessment improves achievement and motivation more effectively than summative testing.

Feedback quality, rather than frequency, determines learning impact.

Student involvement in assessment enhances self-regulation and ownership.

Technology provides efficiency but must complement human judgment.

Assessment literacy is essential for effective instructional alignment.

The findings reinforce the need for a paradigm shift — from assessment as judgment to assessment as learning.

CONCLUSION AND SUGGESTIONS

Assessment is not the end of learning but an integral part of it. When used formatively, it transforms classrooms into reflective spaces where both teachers and students collaborate toward mastery.

RECOMMENDATIONS:

Integrate Formative Assessment in Daily Instruction: Use frequent, low-stakes assessments to inform teaching.

Focus on Feedback for Growth: Provide specific, process-oriented feedback that encourages reflection.

Promote Student Involvement: Implement self and peer assessment to build metacognition.

Enhance Teacher Assessment Literacy: Offer professional development in assessment design and data use.

Leverage Technology: Use digital tools to deliver timely feedback and track progress.

Balance Summative and Formative Goals: Align assessment systems with holistic learning objectives.

Adopting these practices can foster more equitable, engaging, and effective learning environments, ensuring that assessment serves its true purpose — supporting student growth and achievement.

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BARRIERS TO CERVICAL CANCER SCREENING AMONG WOMEN IN LOW- AND MIDDLE-INCOME COUNTRIES: AN INTEGRATIVE REVIEW AND DIRECTIONS FOR GYNAECOLOGICAL PRACTICE

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ABSTRACT

Cervical cancer remains a leading cause of cancer morbidity and mortality among women in low- and middle-income countries (LMICs), despite being largely preventable through timely screening and treatment of precancerous lesions. Global initiatives, including the World Health Organization's (WHO) strategy to eliminate cervical cancer as a public health problem, emphasize population-based screening using human papillomavirus (HPV) testing, cytology, or visual inspection with acetic acid (VIA). However, screening coverage in many LMICs remains critically low; in India, for example, fewer than 2% of women aged 30–49 years have ever undergone cervical cancer screening. This integrative review synthesizes recent evidence (2015–2025) on individual, socio-cultural, and health-system barriers to cervical cancer screening uptake among women in LMICs.

Literature was identified through structured searches of PubMed, Scopus, and Google Scholar, complemented by national survey reports and WHO guidelines. Evidence from systematic reviews, national surveys, and qualitative studies was narratively synthesized. The findings reveal multilevel barriers, including low awareness and knowledge of cervical cancer and screening; misconceptions and fatalistic beliefs; fear of pain, diagnosis, and stigma; gender norms and limited decision-making autonomy; logistical obstacles such as distance, cost, and competing domestic or work responsibilities; and health-system constraints, including inadequate infrastructure, insufficient trained personnel, and poorly implemented policies.

Despite growing research, important gaps persist: limited integration of gender and power analyses, few studies that explicitly apply theoretical behavior-change models, insufficient evaluation of community-based and self-sampling HPV interventions, and a lack of longitudinal evidence on the sustainability of screening programs. Based on these gaps, this paper formulates a research question focused on multilevel determinants of screening uptake and proposes a mixed-methods research design suitable for gynecological and public health practice in LMICs. The review underscores the need for context-specific, culturally sensitive interventions that strengthen both community engagement and health-system capacity. Future research should prioritize implementation science, equity-focused analyses, and rigorous evaluation of interventions such as HPV self-sampling, task-shifting, and integration of screening into existing maternal and reproductive health services.

KEYWORDS: CERVICAL CANCER; SCREENING; GYNECOLOGY; LOW- AND MIDDLE-INCOME COUNTRIES; BARRIERS; HPV TESTING; WOMEN'S HEALTH

1. INTRODUCTION

Cervical cancer is the fourth most common cancer among women worldwide and a major cause of preventable mortality, with a disproportionate burden in LMICs. Estimates indicate that approximately 90% of cervical cancer deaths occur in LMICs, reflecting deep inequities in access to prevention, screening, and treatment services (Petersen et al., 2022).

Effective screening methods such as cytology (Pap smear), VIA, and HPV DNA testing can detect precancerous lesions before progression to invasive cancer. In recognition of this, the WHO's global strategy to eliminate cervical cancer as a public health problem sets the "90-70-90" targets by 2030: 90% of girls fully vaccinated against HPV by age 15, 70% of women screened with a high-performance test at ages 35 and 45, and 90% of women with pre-cancer or cancer receiving appropriate treatment. WHO's updated 2021 guideline recommends HPV DNA testing as the preferred primary screening method, starting at age 30 in the general population and 25 in women living with HIV, with defined screening intervals.

Despite clear evidence and global guidance, cervical cancer screening coverage in many LMICs remains extremely low. In India, analyses of National Family Health Survey-5 (NFHS-5, 2019–2021) data show that only around 1.9% of women aged 30–49 years have ever undergone cervical cancer screening, with several states reporting participation below 1%. Similar patterns of under-utilization are reported across LMICs in Asia, Africa, and Latin America.

Understanding why women do not access screening, even when services are nominally available, is crucial for gynecologists, public health practitioners, and policymakers. Over the last decade, multiple studies have explored barriers to screening, including knowledge deficits, socio-cultural norms, logistic constraints, and health-system weaknesses (Islam et al., 2017; Petersen et al., 2022; Srinath et al., 2023). However, evidence is fragmented across settings and designs, and the translation of this evidence into effective, context-specific interventions remains limited. In addition, newer technologies such as HPV self-sampling and task-shifting approaches raise new questions about acceptability, feasibility, and equity.

AIM OF THE PAPER

This paper has three main aims:
To provide an integrative, up-to-date review of barriers to cervical cancer screening uptake among women in LMICs.
To identify key gaps in existing research and practice.
To formulate a clear research question and propose a methodologically robust study design that can be implemented in gynecological and public health settings in LMICs.

2. LITERATURE REVIEW

2.1 Global burden of cervical cancer and rationale for screening

Cervical cancer arises primarily from persistent infection with oncogenic HPV types. The long preclinical phase of cervical intraepithelial neoplasia (CIN) creates a window of opportunity for prevention through vaccination and screening. Population-based screening programs in high-income countries have reduced incidence and mortality by up to 70%, illustrating the protective potential of organized screening systems (WHO, 2021; ACOG, 2021).

WHO now recommends HPV DNA testing as the primary screening strategy where feasible, due to its higher sensitivity compared with cytology or VIA. For women testing negative on HPV DNA, screening intervals may be extended (e.g., 5–10 years), which offers potential efficiency gains for resource-constrained health systems.

2.2 Cervical cancer screening recommendations

Professional bodies such as ACOG recommend three options for women aged 30–65 years: primary HPV testing every 5 years, co-testing with HPV and cytology every 5 years, or cytology alone every 3 years,

with HPV-based strategies preferred where available (ACOG, 2021). WHO guidelines emphasize HPV DNA testing in LMICs, with VIA or cytology as acceptable alternatives where HPV testing is not yet operational (WHO, 2021).

2.3 Screening coverage in LMICs

Despite these guidelines, coverage remains low in most LMICs, particularly in rural and marginalized populations. Systematic reviews and national surveys consistently show screening uptake rates below 20%, often below 10%, compared with coverage above 60–70% in many high-income countries (Islam et al., 2017; Petersen et al., 2022; Srinath et al., 2023).

NFHS-5 data for India report that only 1.9% of women aged 30–49 years have ever undergone cervical cancer screening, with state-level coverage ranging from 0.2% in some states to approximately 9.8% in Tamil Nadu (Gopika et al., 2022). More recent analyses confirm that screening remains under 2% nationally, despite policy frameworks and programmatic efforts to expand screening through primary health centres.

2.4 Conceptual frameworks for understanding barriers

The "5A" framework conceptualizes access as a function of approachability, acceptability, availability, affordability, and appropriateness. Srinath et al. (2023) extended this model for LMIC cancer screening by adding two dimensions: awareness (knowledge and health literacy) and angst (fear, anxiety, and emotional responses), capturing barriers that are highly salient for women's cancer screening decisions. Health behavior theories such as the Health Belief Model (HBM) and the Theory of Planned Behavior (TPB) also inform analyses of screening uptake, highlighting constructs such as perceived susceptibility, perceived severity, perceived benefits and barriers, self-efficacy, and subjective norms (Lau et al., 2022).

2.5 Individual-level barriers

Across LMICs, lack of knowledge about cervical cancer and its risk factors, low awareness of screening, and misconceptions about screening procedures are among the most frequently reported barriers (Islam et al., 2017; Petersen et al., 2022). Women often perceive themselves as healthy and therefore not in need of screening, or believe screening is only required when symptoms are present (Srinath et al., 2023).

Fear is another powerful barrier: fear of pain during the procedure, fear of a cancer diagnosis, and fear of marital or social consequences if a diagnosis is disclosed. Feelings of embarrassment related to exposing intimate body parts, especially to male providers, are recurrent themes across cultures (Marlow et al., 2015; Islam et al., 2017).

2.6 Socio-cultural and gender-related barriers

Gender norms in many LMICs assign women primary responsibility for domestic labor and caregiving, limiting time available for preventive health services. Decision-making power may rest with husbands or older family members; lack of spousal or family support has been repeatedly identified as a barrier to screening (Srinath et al., 2023; Lau et al., 2022).

Cultural and religious beliefs can contribute to stigma around gynecological examinations and diseases associated with sexual transmission, such as HPV. Misconceptions that screening or HPV vaccination promotes promiscuity, or that cervical cancer is a punishment for immoral behavior, discourage participation (Modibbo et al., 2016; Ayanto et al., 2023).

2.7 Health-system and structural barriers

From the supply side, barriers include limited availability of screening services, irregular clinic hours, long waiting times, stock-outs of consumables, inadequate privacy, and lack of trained providers, particularly in rural or remote areas (Islam et al., 2017; Petersen et al., 2022).

Even where screening is offered free or at low cost, indirect costs (transport, lost wages, childcare) can be prohibitive. Distance to facilities and poor transport infrastructure further reduce access. Trust in

the health system is another recurring theme; negative past experiences, perceived discrimination, and poor communication reduce willingness to attend screening (Srinath et al., 2023).

Policies may exist on paper but be weakly implemented, with poor integration of screening into primary health care and maternal health services, inadequate monitoring, and little accountability for coverage targets (Petersen et al., 2022; WHO, 2021).

2.8 Existing interventions

Interventions tested in LMICs include community-based education, use of female community health workers, invitation letters or SMS reminders, outreach screening camps, integration with family planning or antenatal clinics, and introduction of VIA or HPV self-sampling to reduce the need for pelvic examinations by clinicians (Islam et al., 2017; Petersen et al., 2022; WHO, 2021).

While many interventions show improvements in knowledge and short-term uptake, evidence on scalability, long-term sustainability, and equity impact (e.g., among poorest or least educated women) is still limited.

2.9 Gaps in the literature

The existing literature highlights several gaps:

Limited integration of gender and power analyses: Few studies explicitly examine how intra-household power dynamics, intimate partner violence, or economic dependence shape women's ability to attend screening.

Under-use of theoretical frameworks: Although HBM and related models are relevant, many intervention studies are not theory-driven, which limits understanding of mechanisms of change.

Scarce evaluation of HPV self-sampling in routine practice: While pilot studies show high acceptability, there is limited implementation research on integrating self-sampling into public sector programs at scale.

Insufficient focus on health-system strengthening: Many studies focus on individual-level barriers without adequately addressing structural constraints such as workforce, financing, supply chains, and governance.

Geographical gaps: Evidence is clustered in certain countries (e.g., India, Nigeria, a few Latin American settings), with limited data from smaller or conflict-affected LMICs.

These gaps motivate the formulation of a more integrated research question and study design, bridging gynecological practice with public health and health-systems research.

3. RESEARCH QUESTION AND OBJECTIVES

3.1 Research question

Based on the identified gaps, the central research question is:

What individual, socio-cultural, and health-system factors are associated with uptake of cervical cancer screening among women aged 30–49 years in LMIC settings, and how do these factors interact to facilitate or hinder screening?

3.2 Hypotheses

Grounded in the literature and behavioral theory, the following hypotheses are proposed:

Knowledge and awareness: Women with higher knowledge scores regarding cervical cancer risk factors and screening are more likely to have undergone screening.

Perceived susceptibility and severity: Higher perceived personal risk and perceived seriousness of cervical cancer are positively associated with screening uptake.

Perceived barriers and self-efficacy: Greater perceived barriers (e.g., cost, distance, embarrassment, fear) are negatively associated with screening uptake, whereas higher self-efficacy is positively associated.

Social support and gender norms: Women reporting supportive partners/families and greater decision-making autonomy are more likely to be screened.
Health-system accessibility: Better perceived accessibility and quality of services (shorter distance, reasonable waiting times, female providers, privacy) are associated with higher screening uptake.

3.3 Specific objectives

To estimate the proportion of women aged 30–49 years who have ever undergone cervical cancer screening in a selected LMIC setting.
To identify individual-level predictors of screening uptake using a structured survey.
To explore socio-cultural and gender-related determinants of screening behavior through qualitative interviews and focus group discussions.
To examine health-system factors (availability, accessibility, affordability, and acceptability of services) influencing screening uptake.
To develop context-specific recommendations for gynecological practice and public health programming based on the integrated findings.

4. METHODS

4.1 Overall research approach

To address the research question comprehensively, a **mixed-methods design** is proposed, consisting of:
An **integrative narrative review** (as presented in Sections 2 and 5), and
A **convergent mixed-methods empirical study** in a selected LMIC context (e.g., a state or region in India), combining cross-sectional survey data with qualitative interviews and health-facility assessments.
The integrative review synthesizes existing knowledge and informs the design of the empirical components.

4.2 Study setting

The empirical component would be conducted in a defined LMIC setting, such as rural and peri-urban districts of an Indian state with low screening coverage as per NFHS-5. Primary health centres, community health centres, and district hospitals providing gynecological services and cervical cancer screening (Pap smear, VIA, or HPV testing) would serve as the health-system context.

4.3 Study design

Quantitative component: Community-based cross-sectional survey among women aged 30–49 years.
Qualitative component: In-depth interviews (IDIs) and focus group discussions (FGDs) with women, husbands/partners, community health workers, nurses, and gynecologists.
Health-facility assessment: Structured checklist to document availability of screening services, staffing, equipment, consumables, and clinic organization.

4.4 Study population and sampling

Inclusion criteria (survey):
Women aged 30–49 years
Resident in the study area for at least 6 months
Able to provide informed consent

Exclusion criteria:
Women with a prior diagnosis of cervical cancer (as their care pathway is different)
Women who are severely ill and unable to participate

Sampling strategy:
Stage 1: Multistage cluster sampling to select villages/urban blocks.
Stage 2: Systematic random sampling of households within selected clusters.

Stage 3: Within each household, one eligible woman selected using a simple random method (e.g., Kish grid).

A sample size of approximately 800–1,000 women would allow reasonable precision for estimating screening prevalence and sufficient power to detect associations between key predictors and screening status in multivariable models.

For the qualitative component, purposive sampling would be used to ensure diversity in age, education, parity, screening status (screened vs. never-screened), and geographic location. Approximately 30–40 IDIs and 6–8 FGDs (with 6–8 participants each) are typically sufficient to reach thematic saturation.

4.5 Data collection procedures

4.5.1 Survey questionnaire

A structured questionnaire would be administered by trained female interviewers in the local language and include:

Socio-demographic variables: age, education, marital status, parity, occupation, household income, caste/ethnicity (as applicable).

Reproductive and sexual history: age at first intercourse, number of pregnancies, contraceptive use, history of sexually transmitted infections.

Knowledge and awareness: items assessing understanding of cervical cancer risk factors, symptoms, and screening methods; composite knowledge score constructed from correct responses.

Perceptions and beliefs (HBM constructs): perceived susceptibility, severity, benefits, barriers, self-efficacy, and cues to action using Likert-scale items.

Social support and decision-making: perceived support from partner/family, autonomy in health-care decision-making.

Health-system access: distance and travel time to facility, perceived quality of care, experience of previous health services, preference for female providers, perceived privacy.

Screening behavior: ever screened for cervical cancer (yes/no), type of test, timing of most recent screening, reasons for screening or non-screening.

Questionnaires would be pretested and revised for clarity and cultural appropriateness.

4.5.2 Qualitative interviews and FGDs

Semi-structured interview guides would explore:

Women's understanding of cervical cancer and screening

Emotional responses (fear, shame, stigma)

Household and community norms regarding women's health and sexuality

Experiences with the health system and providers

Practical constraints (time, cost, childcare, work)

Suggestions for improving access and acceptability of screening

Health workers and providers would be asked about:

Service organization and workload

Training and confidence in providing screening

Perceived barriers from their perspective

Views on potential interventions (HPV self-sampling, outreach clinics, task-shifting)

IDIs and FGDs would be audio-recorded with consent, transcribed verbatim, and translated into English if needed.

4.5.3 Facility assessment

A standardized checklist would document:

Type of screening available (Pap smear, VIA, HPV testing)

Availability of consumables (specula, slides, reagents, HPV kits)

Staffing (gynecologists, nurses, counselors) and training in screening

Infrastructure for privacy and infection prevention
Record-keeping, follow-up, and referral mechanisms

4.6 Data analysis

4.6.1 Quantitative analysis

Data would be entered and cleaned using a statistical package (e.g., SPSS, Stata, or R). Analysis steps:

Descriptive statistics: frequencies, proportions, means/medians for participant characteristics; proportion ever screened.

Bivariate analysis: chi-square tests and t-tests comparing screened vs. never-screened women on key predictors.

Multivariable analysis: logistic regression models estimating adjusted odds ratios (AORs) and 95% confidence intervals for associations between screening uptake and predictors (knowledge score, HBM constructs, social support, accessibility indicators), controlling for socio-demographic covariates.

Interaction and stratified analysis: exploration of effect modification by age, education, or urban/rural residence, where sample size permits.

4.6.2 Qualitative analysis

Transcripts from IDIs and FGDs would be analyzed using thematic analysis:

Familiarization: reading and rereading transcripts.

Initial coding: inductive and deductive coding using a codebook informed by the 5A-plus-awareness-and-angst framework and HBM constructs.

Theme development: grouping codes into broader themes (e.g., "sexual morality and stigma," "trust in health system," "gendered time poverty").

Triangulation: comparing themes across participant groups (women, partners, providers) and integrating with quantitative findings.

4.6.3 Integration of quantitative and qualitative findings

Convergence, complementarity, and divergence between quantitative and qualitative findings would be examined. For example, quantitative associations between decision-making autonomy and screening uptake can be elaborated by qualitative narratives about negotiation with spouses or mothers-in-law.

4.7 Ethical considerations

Ethical approval from an institutional ethics committee and relevant local health authorities.
Informed written consent obtained from all participants, with separate consent for audio-recording.
Confidentiality ensured through anonymized data and secure storage.
Sensitivity to cultural norms; female data collectors for interviews regarding gynecological health.
Referral pathways to gynecological services for participants found to need screening or follow-up care.

5. FINDINGS FROM THE INTEGRATIVE REVIEW

The integrative review (Section 2) synthesized evidence from systematic reviews (Islam et al., 2017; Petersen et al., 2022; Srinath et al., 2023), scoping reviews on gendered factors (Lau et al., 2022), national survey analyses (Gopika et al., 2022), and qualitative studies in various LMICs. Key findings are summarized below.

5.1 Screening uptake

Screening coverage in most LMICs remains below 20%, with several countries and regions reporting coverage under 10%.
In India, ever-screened prevalence among women 30–49 years is around 1.9%, with stark subnational variation.
Similar low uptake is reported in other South-Asian, sub-Saharan African, and Latin American contexts.

5.2 Multilevel barriers

The review identified barriers at multiple levels:

Individual:

Poor knowledge of cervical cancer etiology, risk factors (e.g., HPV, early sexual debut, multiple partners), and the preventive role of screening.

Misconceptions (e.g., belief that screening is only needed when symptomatic).

Fear of pain, diagnosis, and social consequences.

Embarrassment about pelvic examination, especially with male providers.

Interpersonal and socio-cultural:

Gender norms prioritizing family needs over women's preventive health.

Limited decision-making autonomy and financial dependence on husbands or in-laws.

Stigma associated with pelvic examinations, sexual health, and cancer.

Lack of spousal or family support.

Community:

Low visibility of screening programs; limited community-level information campaigns.

Rumors and myths about screening and HPV vaccination.

Health-system and structural:

Limited availability of services, irregular camps, and centralized services at distant facilities.

Inadequate trained personnel and high staff turnover.

Long waiting times, poor privacy, and inconvenient clinic hours.

Weak referral and follow-up systems for abnormal results.

5.3 Facilitators and enabling factors

Despite barriers, several facilitators were identified:

Recommendation or encouragement from a health worker.

Exposure to targeted awareness campaigns.

Availability of female providers and assurance of privacy.

Integration of screening with other services women already use (e.g., family planning, antenatal care).

Community health workers or volunteers accompanying women to facilities.

5.4 Gaps and limitations in existing evidence

Most studies are cross-sectional, limiting causal inference.

Intervention studies often have short follow-up periods and limited generalizability.

Few studies use robust implementation science frameworks to evaluate scaling strategies.

Equity analyses (by socioeconomic status, caste/ethnicity, or rurality) are often underdeveloped.

These findings justify the proposed mixed-methods study to generate context-specific, theory-informed evidence for program design.

6. DISCUSSION

6.1 Interpretation of synthesized evidence

The integrative review confirms that low screening uptake in LMICs is not attributable to a single barrier but to a constellation of individual, social, and systemic factors. Knowledge deficits and misconceptions are pervasive; however, simply providing information is unlikely to be sufficient. Women's decisions are made within constrained environments shaped by gender norms, economic insecurity, and variable trust in health services.

The extended "5A + awareness + angst" framework provides a useful lens for synthesizing these dimensions. Low awareness interacts with angst (fear of procedure, diagnosis, and stigma) to create psychological barriers, while acceptability, availability, and affordability determine whether women can translate intentions into action.

6.2 Implications for policy

Organized screening programs: LMICs should move from opportunistic, camp-based screening toward organized programs with defined target groups, intervals, and quality assurance mechanisms.
Financing and equity: Financial protection policies must cover screening and follow-up care, with special attention to the poorest and most marginalized women.
Community engagement: Effective programs will require collaboration with community leaders, women's groups, schools, and religious institutions to reduce stigma and normalize preventive screening.
Monitoring and accountability: Indicators of screening coverage and treatment completion should be integrated into national health information systems and performance frameworks.

6.3 Future research directions

The proposed mixed-methods study can generate detailed, context-specific insights, but further research priorities include:
Rigorous evaluation of HPV self-sampling and task-shifting models at scale.
Longitudinal studies to assess retention in screening and treatment pathways.
Intervention trials testing theory-based behavior-change strategies (e.g., HBM- or TPB-informed counseling, social norm interventions).
Intersectional analyses examining how socioeconomic status, rurality, and social marginalization interact with gender norms to shape access.
Cost-effectiveness analyses to inform resource allocation and scale-up decisions.

7. CONCLUSION

Cervical cancer remains a preventable yet persistent cause of morbidity and mortality among women in LMICs. Despite the availability of effective screening methods and clear global guidelines, screening coverage is alarmingly low in many countries, including India. This integrative review highlights that barriers to screening are multifaceted, spanning inadequate knowledge, fear and stigma, restrictive gender norms, structural poverty, and health-system weaknesses.

The review identifies critical gaps in the existing literature, including limited use of theoretical frameworks, insufficient integration of gender and power analyses, and a dearth of robust implementation research on promising strategies such as HPV self-sampling and task-shifting. To address these gaps, the paper proposes a mixed-methods study design that combines cross-sectional survey data, qualitative inquiry, and facility assessments within a coherent conceptual framework.

For the gynecological and wider medical community, the key message is that improving cervical cancer screening uptake in LMICs requires more than clinical capacity alone. It demands coordinated action across health systems, communities, and households, informed by rigorous, context-sensitive research. By aligning gynecological practice with public health strategies and implementation science, there is a realistic opportunity to contribute meaningfully to WHO's goal of eliminating cervical cancer as a public health problem within this century.

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AI IN THE EDUCATION FIELD

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ABSTRACT

The integration of Artificial Intelligence (AI) in education has gained significant traction over recent years. AI has the potential to transform educational practices by enhancing teaching and learning, automating administrative tasks, and providing personalized learning experiences. This paper examines the various applications of AI in the education sector, exploring both the advantages and challenges of implementing AI technologies in schools and universities. Furthermore, it investigates the ethical considerations and future implications of AI's role in education.

KEYWORDS: ARTIFICIAL INTELLIGENCE, EDUCATION, BIBLIOMETRIC ANALYSIS, LITERATURE REVIEW, CONTENT ANALYSIS NATURAL LANGUAGE PROCESSING, MACHINE LEARNING ALGORITHMS, INTELLIGENT TUTORING SYSTEMS, SEVERAL CHALLENGES, PERSONALIZED LEARNING, TEACHER WORKLOAD, AND ACCESSIBILITY, APPLICATIONS, BENEFITS, CHALLENGES, LEARNING NEEDS

1. INTRODUCTION

Artificial Intelligence (AI) has emerged as a disruptive technology with widespread applications across various sectors, including healthcare, finance, and entertainment. In education, AI has the potential to revolutionize the way students learn, teachers teach, and institutions manage educational processes. By leveraging AI tools such as natural language processing, machine learning algorithms, and intelligent tutoring systems, educational institutions can address several challenges, including the demand for personalized learning, teacher workload, and accessibility.

This paper discusses the integration of AI in education, focusing on the applications, benefits, challenges, and ethical concerns associated with its use. By analyzing current trends and studies, the paper aims to provide a comprehensive overview of AI's impact on education.

2. APPLICATIONS OF AI IN EDUCATION

AI technologies can be applied in various areas of education, ranging from personalized learning to administrative functions. Some of the key applications include:

2.1. Personalized Learning

AI allows for adaptive learning platforms that cater to individual learning needs. By analyzing data on student performance, AI systems can adjust the difficulty level of tasks, provide additional resources, and track progress in real-time. Platforms like Knewton and DreamBox use AI to deliver personalized lessons and feedback, helping students learn at their own pace.

2.2. Intelligent Tutoring Systems (ITS)

Intelligent tutoring systems use AI algorithms to provide one-on-one tutoring for students. These systems can simulate human tutors by offering instant feedback and guiding students through complex problems. For example, Carnegie Learning provides AI-driven tutoring services for mathematics education, adapting to each student's learning style.

2.3. AI in Grading and Assessment

AI tools can automate grading and assessment, particularly in subjects such as mathematics, coding, and multiple-choice exams. This reduces the workload of educators and allows for faster feedback. AI can

also assist in evaluating open-ended responses, using natural language processing to assess writing quality and comprehension. For instance, platforms like Gradescope use AI to help teachers grade assignments efficiently.

2.4. Learning Analytics

AI-powered learning analytics tools can track and analyze student data, such as attendance, engagement, and performance. These insights help educators identify at-risk students and take timely interventions to support them. Additionally, learning analytics can help institutions improve curriculum design based on the data gathered from student outcomes.

2.5. Automating Administrative Tasks

AI can assist educational institutions in automating administrative tasks such as scheduling, enrollment, and communication. Virtual assistants powered by AI, like chatbots, can answer frequently asked questions, assist with registration processes, and provide support to students 24/7. These AI tools reduce administrative overhead and improve efficiency.

2.6.Personalized Learning

AI tailors content based on students' learning pace, strengths, and weaknesses.
Platforms like Coursera and Duolingo use AI to recommend lessons suited to individual needs.

2.7. Smart Content Creation

AI can create digital textbooks, study guides, and quizzes.
Tools like ChatGPT and Quillionz generate educational content based on user input.

2.8. AI Tutors & Chatbots

AI-powered chatbots like "Socratic" by Google assist students with homework.
Virtual tutors provide 24/7 learning support without human intervention.

2.9.Automated Grading & Assessment

AI speeds up grading for multiple-choice and short-answer questions.
Advanced AI tools assess essays and provide feedback on writing skills.

2.10.Virtual Classrooms & AI-Powered Learning Platforms

AI enhances e-learning with interactive simulations and AR/VR experiences.
Platforms like Google Classroom and Microsoft Teams integrate AI for better engagement.

2.11.Predictive Analytics for Student Performance

AI analyzes student data to predict dropouts or areas of struggle.
Educators receive insights to provide early interventions.

2.12.Language Translation & Accessibility

AI-powered tools like Google Translate help non-native speakers learn in their preferred language.
AI-driven speech-to-text technology aids students with hearing impairments.

2.13.Plagiarism Detection & Academic Integrity

AI tools like Turnitin and Grammarly detect copied content and improve writing skills.
Helps maintain ethical academic standards.

2.14.Administrative Automation

AI automates routine tasks like attendance tracking, scheduling, and enrollment.
Chatbots assist students with admission inquiries.

2.15.Gamification & Student Engagement

AI integrates gamification techniques, such as quizzes, leaderboards, and interactive challenges.
Platforms like Kahoot! and Quizizz use AI to make learning more engaging.

2.16.AI-Powered Career Guidance

AI suggests career paths based on student skills, interests, and performance.
Platforms like LinkedIn Learning provide AI-driven career recommendations.

2.17.Adaptive Testing & Exam Preparation

AI adjusts difficulty levels of questions based on student responses.
Helps students prepare effectively for exams like SAT, GRE, and GMAT.

2.18. Voice Assistants for Learning

AI-powered assistants like Siri, Alexa, and Google Assistant help students with quick information retrieval.
Students can use voice commands for hands-free learning.

2.19. AI in Special Education

AI-powered tools assist students with disabilities (e.g., speech-to-text for dyslexia).
Smart devices help children with autism improve communication skills.

2.20.Enhanced Research & Data Analysis

AI accelerates academic research by analyzing vast amounts of data quickly.
AI-powered platforms like IBM Watson assist in research paper writing.

3. BENEFITS OF AI IN EDUCATION

The integration of AI in education provides numerous benefits, including:

3.1. Personalized Learning Experiences

AI can tailor the learning experience to individual needs, helping students understand concepts at their own pace. With AI systems that adapt content based on the learner's progress, students can receive immediate feedback, which enhances their understanding and retention of knowledge.

3.2. Accessibility and Inclusivity

AI tools can support students with special needs by providing accessible learning materials. For instance, AI can generate speech-to-text transcriptions for hearing-impaired students or provide text-to-speech tools for those with visual impairments. This makes education more inclusive and accessible to all students.

3.3. Improved Learning Outcomes

Studies have shown that personalized learning powered by AI can lead to improved learning outcomes. With AI systems that provide real-time assessments and instant feedback, students are better equipped to understand concepts and perform well in assessments.

3.4. Increased Efficiency

By automating administrative tasks and grading, AI allows teachers to focus more on direct instruction and student engagement. AI can also optimize the use of classroom resources, ensuring that students receive a quality learning experience while teachers spend less time on non-teaching duties.

3.5. Scalability

AI enables educational solutions that can scale to accommodate large numbers of students. Online platforms powered by AI can support millions of students simultaneously, ensuring that quality education is accessible to anyone with an internet connection.

3.6. Personalized Learning

AI can adapt lessons based on students' learning styles, pace, and strengths, ensuring that each student gets the support they need.

Adaptive Learning Platforms: AI-driven platforms like Coursera and Khan Academy adjust difficulty levels based on student performance.

Personalized Feedback: AI provides instant feedback on assignments and exams, helping students understand their mistakes.

Customized Learning Paths: AI analyzes students' strengths and weaknesses to suggest relevant learning materials.

3.7. Smart Content Creation

AI can help create engaging and interactive learning materials.

Digital Textbooks: AI generates summaries, highlights key points, and even converts text into audio.
Interactive Learning Materials: AI-powered simulations and gamification make learning more engaging.
AI Tutors: Virtual tutors provide explanations and additional learning resources.

3.8. Improved Administrative Efficiency

AI automates routine tasks, allowing teachers to focus more on teaching.
Automated Grading: AI can grade multiple-choice, short-answer, and even essay-based questions.
Attendance Tracking: Facial recognition and AI-based systems track student attendance.
Automated Scheduling: AI helps in timetable creation and classroom allocation.

3.9.. Enhanced Student Support

AI provides real-time assistance to students.
Chatbots & Virtual Assistants: AI-powered bots answer student queries anytime.
Language Translation: AI helps students understand content in their preferred language.
Speech-to-Text & Text-to-Speech: AI assists students with disabilities by converting speech to text and vice versa.

3.10. Data-Driven Insights & Analytics

AI helps educators and institutions make informed decisions.
Early Warning Systems: AI predicts student performance and identifies at-risk students.
Progress Monitoring: AI tracks student progress and provides insights to teachers and parents.
Predictive Analysis: AI helps institutions plan for future trends in education.

3.11.. Virtual & Augmented Reality (VR & AR)

AI enhances the learning experience through immersive technology.
Virtual Labs: Students can conduct experiments in a virtual environment.
3D Learning Models: AI creates interactive 3D models for better understanding.
Historical & Scientific Simulations: AI brings history and science lessons to life.

3.12. AI in Career Guidance & Skill Development

AI helps students choose the right career paths and develop essential skills.
Career Counseling: AI analyzes student interests and suggests suitable careers.
Skill Assessment: AI tests and recommends skill-building courses.
Job Market Insights: AI informs students about job opportunities and required qualifications.

3.13. Inclusive Education

AI makes education more accessible for all learners.
Assistive Technology: AI tools support students with disabilities (e.g., screen readers for visually impaired students).
Special Education Support: AI helps teachers create personalized learning plans for students with special needs.
Remote Learning: AI-powered platforms enable students in remote areas to access quality education.

3.14. Cost Reduction in Education

AI helps reduce the cost of learning materials and administrative expenses.
Automated Content Creation: Reduces the need for expensive textbooks.
AI-Powered Tutors: Decrease dependency on private tutoring.
Efficient Resource Allocation: AI optimizes school operations to save costs.

3.15. Gamification & Engagement

AI makes learning more fun and interactive.
AI-Powered Games: Educational games enhance student engagement.
Progress Tracking & Rewards: AI provides badges and rewards for achievements.
AI-Based Storytelling: Enhances creativity and understanding through interactive narratives.

4. CHALLENGES AND LIMITATIONS

Despite its potential, the use of AI in education faces several challenges:

4.1. Equity and Access

Not all students have equal access to AI-powered educational tools. Disparities in technology access, especially in low-income regions, can exacerbate educational inequalities. Ensuring that AI tools are accessible to all students is crucial for equitable educational outcomes.

4.2. Data Privacy and Security

The use of AI in education involves the collection of vast amounts of student data. There are concerns about how this data is stored, who has access to it, and how it is used. Educational institutions must ensure that data privacy is maintained, and ethical guidelines are followed to protect student information.

4.3. Teacher Resistance and Training

Some educators may be resistant to the implementation of AI in the classroom, fearing that it could replace their role or that they lack the skills to use these technologies effectively. Professional development programs are essential to help educators integrate AI into their teaching practices.

4.4. Reliability of AI Systems

AI systems are only as effective as the data they are trained on. Bias in the data or flaws in the algorithms can lead to inaccurate results or unfair treatment of students. Ensuring that AI systems are transparent, unbiased, and regularly tested is necessary to maintain their reliability.

5. ETHICAL CONSIDERATIONS

The use of AI in education raises several ethical questions:

5.1. Bias in Algorithms

AI systems can unintentionally perpetuate biases based on the data they are trained on. For example, an AI system might favor students from certain demographic backgrounds or schools, leading to inequality in educational opportunities. It is important to develop algorithms that are fair, transparent, and unbiased.

5.2. Impact on Employment

As AI systems take on administrative tasks and even some teaching roles, concerns arise about the potential displacement of educational workers. It is crucial to consider how AI will affect the job market in education and ensure that human educators remain an integral part of the learning experience.

5.3. Informed Consent

The collection of personal data for AI-driven educational tools requires clear consent from students and their guardians. Educational institutions must ensure that they are transparent about data collection practices and that students' privacy rights are respected.

5.4. Bias and Fairness

AI systems may inherit biases from training data, leading to unfair advantages or disadvantages for certain students.

Ensuring diverse and unbiased datasets can help mitigate this issue.

5.5. Privacy and Data Security

AI systems often collect large amounts of student data, raising concerns about data privacy.

Schools and developers must ensure strong security measures and comply with data protection regulations (e.g., GDPR, FERPA).

5.6. Transparency and Accountability

AI decision-making processes should be transparent so educators, students, and parents understand how conclusions are reached.

Institutions must be accountable for AI-driven decisions, especially those impacting student learning outcomes.

5.7. Equity and Accessibility

AI should enhance education for all students, including those with disabilities and those from underprivileged backgrounds.

Ensuring AI tools are inclusive and accessible is essential.

5.8. Human Oversight

AI should assist, not replace, human educators.

Teachers must be involved in reviewing AI-generated recommendations to ensure they align with ethical and educational goals.

5.9. Psychological and Social Impact

Over-reliance on AI may impact students' critical thinking and social skills.

AI should be used to complement traditional learning rather than completely automate it.

5.10. Misuse of AI in Education

AI tools like ChatGPT can be misused for plagiarism or cheating.

Schools should develop policies to encourage responsible AI use.

6. FUTURE OF AI IN EDUCATION

The future of AI in education is promising, with potential applications expanding across various fields. As AI technology continues to evolve, we can expect to see more sophisticated systems that enhance personalization, improve learning outcomes, and foster lifelong learning.

In the near future, we may see AI systems that can provide real-time translation, enabling students from different linguistic backgrounds to learn together in a multicultural environment. Furthermore, AI may play a key role in predicting and preventing student dropout by analyzing trends and providing timely interventions.

However, it is essential that AI in education is implemented responsibly, with careful attention to the ethical, social, and cultural implications. The collaboration between policymakers, educators, technologists, and students will be critical in shaping the future of AI in education.

7. CONCLUSION

AI has the potential to revolutionize education by providing personalized learning experiences, improving efficiency, and enhancing accessibility. However, the adoption of AI must be approached with caution, considering the challenges and ethical concerns associated with its use. By addressing issues such as equity, data privacy, and teacher readiness, AI can be harnessed to create more inclusive and effective educational environments. As AI continues to develop, its role in education will only become more significant, offering new opportunities for students, teachers, and institutions alike.

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REIMAGINING COST AND ACCOUNTING RESEARCH THROUGH MULTIDISCIPLINARY INTEGRATION: A CASE STUDY OF SELECTED ORGANIZATIONS

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ABSTRACT

In the contemporary business environment, organizations face complex challenges arising from globalization, digital transformation, competitive pressures, and increasing sustainability expectations. Traditional, discipline-specific approaches to cost and accounting research are often insufficient to address these multidimensional issues. In this context, multidisciplinary integration has emerged as a critical approach to re-imagine the scope and relevance of cost and accounting practices. The present study aims to examine how the integration of multiple disciplines enhances the effectiveness of cost and accounting systems through a multiple case study approach.

The study analyzes selected organizations from manufacturing, healthcare, information technology, retail, and renewable energy sectors to understand the practical application of multidisciplinary integration in cost and accounting. Using a descriptive and exploratory research design, the paper relies on secondary data collected from academic literature, organizational reports, and documented best practices. The case studies examine the integration of cost and accounting techniques with management strategies, economic principles, information technology, behavioral sciences, and sustainability studies. The findings of the study reveal that multidisciplinary integration significantly improves the accuracy, relevance, and strategic usefulness of cost information. Information technology emerges as a key enabler by providing real-time data and analytical support, while behavioral and managerial dimensions influence the successful implementation of accounting systems. Furthermore, the integration of sustainability and environmental considerations expands the traditional role of accounting beyond financial performance to responsible governance and long-term value creation.

The study contributes to accounting literature by demonstrating the practical relevance of multidisciplinary research through sector-specific case evidence. It offers valuable insights for researchers, practitioners, and educators and highlights the need for adopting integrative approaches to re-imagine cost and accounting research in a dynamic and evolving business environment.

KEYWORDS: COST ACCOUNTING, MULTIDISCIPLINARY RESEARCH, STRATEGIC COST MANAGEMENT, SUSTAINABILITY ACCOUNTING, CASE STUDY APPROACH

1. INTRODUCTION

In the contemporary business landscape, organizations operate in an environment characterized by globalization, digital transformation, intense competition, and increasing social and environmental responsibilities. These changes have expanded the role of accounting from a mere record-keeping function to a strategic decision-support system. Cost and management accounting, in particular, plays a crucial role in planning, control, performance evaluation, and strategic management.

Traditional accounting research, often limited to a single disciplinary perspective, fails to capture the multifaceted nature of modern organizational challenges. As a result, multidisciplinary research has emerged as a powerful approach that integrates insights from various disciplines to develop

comprehensive and practical solutions. In the context of cost and accounting, multidisciplinary integration involves combining accounting techniques with concepts from management, economics, information technology, psychology, and sustainability studies.

This paper seeks to examine how multidisciplinary integration reimagines cost and accounting research through an in-depth analysis of selected organizational case studies. By adopting a multiple case study approach, the study aims to demonstrate the practical relevance and strategic importance of integrated accounting practices across different sectors.

2. REVIEW OF LITERATURE

The concept of multidisciplinary research has gained increasing attention in recent academic literature. According to Klein (2010), multidisciplinary research enables scholars to address complex problems by integrating perspectives from multiple disciplines. In the field of accounting, such integration is essential due to the diverse informational needs of stakeholders and the dynamic nature of business environments.

Drury (2018) emphasized that modern cost accounting extends beyond cost ascertainment to include strategic cost management, performance measurement, and value creation. Kaplan and Cooper (1998) highlighted the limitations of traditional costing systems and advocated for advanced techniques such as Activity-Based Costing (ABC), which require integration with operational and management information.

Behavioral aspects of accounting have also been widely discussed in literature. Scapens (2006) noted that accounting systems influence managerial behavior and organizational culture, making psychological and sociological perspectives essential for understanding accounting practices. Similarly, Luft and Shields (2003) emphasized the role of incentives, motivation, and human judgment in management accounting systems.

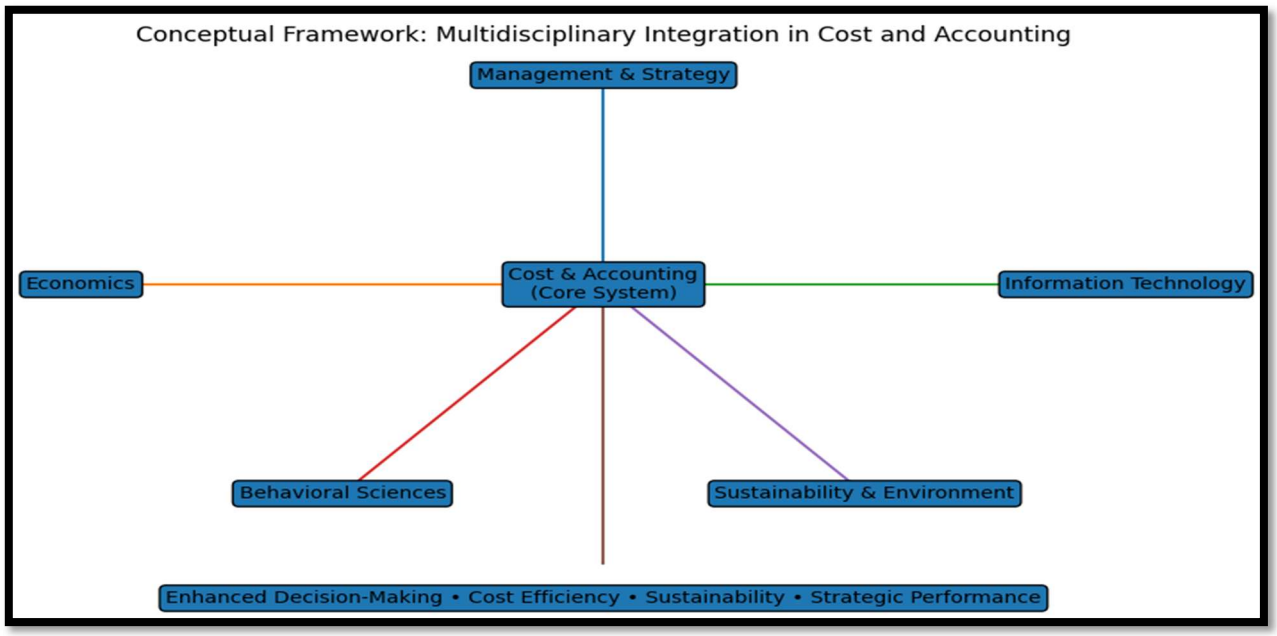
The integration of information technology in accounting has transformed data processing and decision-making. Romney and Steinbart (2021) discussed how ERP systems, data analytics, and artificial intelligence enhance the accuracy, timeliness, and relevance of accounting information. Sustainability accounting has emerged as another critical area of multidisciplinary research, integrating environmental science and social responsibility with accounting practices (Gray, 2010).

Despite extensive theoretical discussion, there is a need for empirical and case-based studies that demonstrate how multidisciplinary integration operates in practice. This study attempts to bridge this gap by analyzing real-world organizational cases.

3. CONCEPTUAL FRAMEWORK OF THE STUDY

The conceptual framework illustrates cost and accounting as the core system supported by multidisciplinary integration. Management and strategic perspectives guide planning and control, while economic principles support pricing and resource allocation decisions. Information technology enables real-time data processing and analytical capability. Behavioral sciences influence the acceptance and effectiveness of accounting systems through human decision-making and motivation. Sustainability and environmental considerations expand the scope of accounting beyond financial performance to long-term value creation. The integration of these disciplines leads to enhanced decision-making, cost efficiency, sustainability, and improved strategic performance.

Figure 1: Conceptual Framework of Multidisciplinary Integration in Cost and Accounting



4. OBJECTIVES OF THE STUDY

The present study is undertaken with the following objectives:

To examine cost and accounting practices in selected organizations across different sectors.

To analyze the role of multidisciplinary integration in enhancing the effectiveness of cost and accounting systems.

To identify key outcomes and benefits of integrated accounting practices.

To contribute to academic literature through a case study-based understanding of multidisciplinary accounting research.

5. RESEARCH METHODOLOGY

The study adopts a descriptive and exploratory research design using a multiple case study approach. Case study methodology is particularly suitable for understanding complex organizational phenomena within their real-life contexts.

5.1 Data Sources

The study is based on secondary data collected from published research articles, books, organizational reports, professional publications, and documented best practices. The cases are illustrative and represent typical practices followed in respective sectors.

5.2 Selection of Cases

Five organizations from different sectors were selected to ensure diversity and comparability: -

Manufacturing organization

Healthcare service organization

Information technology company

Retail organization

Renewable energy organization

5.3 Method of Analysis

Qualitative analysis was employed to examine cost and accounting practices and their integration with other disciplines. Cross-case analysis was used to identify common patterns, sector-specific variations, and strategic implications.

6. CASE STUDY ANALYSIS

6.1 Manufacturing Organization: ABC Manufacturing Ltd.

ABC Manufacturing Ltd. faced challenges related to inaccurate overhead allocation and rising production costs. The organization replaced traditional costing with Activity-Based Costing integrated with ERP systems. Strategic management tools such as value chain analysis and marginal cost analysis were also adopted. The integration resulted in improved cost accuracy, elimination of non-value-added activities, and better pricing decisions.

6.2 Healthcare Organization: XYZ Healthcare Hospital

XYZ Healthcare Hospital struggled with inefficient resource utilization and lack of service-wise cost information. Service costing, responsibility accounting, and hospital information systems were implemented. Behavioral training programs improved cost awareness among staff. The integrated approach enhanced transparency, accountability, and financial sustainability.

6.3 Information Technology Organization: PQR Tech Solutions

PQR Tech Solutions experienced project cost overruns and weak performance evaluation systems. Job costing, standard costing, project management tools, and data analytics were integrated with incentive-based performance systems. The organization achieved better cost control, improved project profitability, and enhanced employee motivation.

6.4 Retail Organization: LMN Retail Chain

LMN Retail Chain faced inventory inefficiencies and thin margins. Cost accounting techniques were integrated with supply chain management, barcode technology, and demand forecasting models. The integration reduced inventory carrying costs, improved stock turnover, and supported demand-based pricing strategies.

6.5 Renewable Energy Organization: Green Energy Solutions Ltd.

Green Energy Solutions Ltd. aimed to align profitability with environmental responsibility. Environmental accounting, life-cycle costing, and ESG reporting were integrated with policy analysis and economic incentives. The organization achieved transparent sustainability reporting, long-term cost planning, and enhanced stakeholder trust.

7. CROSS-CASE ANALYSIS

The cross-case analysis reveals several common patterns across organizations. All cases demonstrate that multidisciplinary integration improves the relevance and strategic value of cost and accounting information. Information technology plays a central role in enabling real-time data and analytical capabilities. Behavioral and managerial integration enhances acceptance and effective use of accounting systems. Sustainability integration expands the scope of accounting beyond financial performance to social and environmental impact.

Sector-specific differences were also observed. Manufacturing and retail organizations emphasized cost efficiency and inventory control, while healthcare and IT organizations focused on service costing and performance evaluation. Renewable energy organizations highlighted sustainability and long-term value creation.

8. FINDINGS AND DISCUSSION

The major findings of the study are as follows:

1. Improvement in Accuracy and Reliability of Cost Information

One of the most significant findings of the case study is the substantial improvement in the accuracy of product cost information. The shift from traditional labor-based overhead allocation to Activity-Based

Costing enabled the organization to identify appropriate cost drivers linked to actual production activities. This eliminated cost distortion and cross-subsidization among products. As a result, management obtained reliable cost data for pricing, profitability analysis, and product-mix decisions. This finding confirms that accurate costing systems are essential for strategic competitiveness in modern manufacturing environments.

2. Strategic Role of Cost Accounting in Managerial Decision-Making

The integration of cost accounting with strategic management tools transformed cost data into a decision-support mechanism rather than a mere record-keeping function. Value chain analysis and strategic cost management helped management identify non-value-added activities and focus on core competencies. Cost information was actively used in long-term planning, capacity utilization, and make-or-buy decisions. This finding highlights that multidisciplinary integration elevates cost accounting from an operational tool to a strategic management function.

3. Information Technology as a Critical Enabler

The implementation of an ERP-based cost system emerged as a key enabling factor for successful multidisciplinary integration. Real-time data collection and system integration improved coordination between production, accounting, and management functions. The availability of timely and accurate information strengthened cost control, variance analysis, and performance monitoring. This finding emphasizes that information technology is not merely a support function but a central component of modern cost and accounting systems.

4. Influence of Behavioral and Human Factors

The case study reveals that the effectiveness of cost and accounting systems is significantly influenced by behavioral factors. Employee resistance to new costing systems initially posed challenges; however, targeted training and awareness programs improved acceptance and participation. Increased cost consciousness among employees contributed to better adherence to cost control measures. This finding underscores the importance of integrating behavioral sciences with accounting practices to ensure successful implementation and utilization.

5. Integration of Sustainability into Cost Management

Another important finding is the recognition of environmental and sustainability-related costs as part of the overall cost structure. By identifying costs related to waste reduction, energy efficiency, and environmental compliance, the organization expanded the scope of cost accounting beyond financial performance. Sustainability integration supported long-term cost savings, regulatory compliance, and corporate reputation. This finding highlights the growing importance of sustainability accounting in manufacturing organizations.

6. Overall Organizational Performance Enhancement

The combined effect of multidisciplinary integration resulted in improved operational efficiency, enhanced profitability, and stronger strategic positioning. Accurate cost information, supported by managerial, technological, behavioral, and sustainability inputs, enabled informed decision-making and long-term value creation. This finding demonstrates that multidisciplinary integration creates synergy across organizational functions, leading to holistic performance improvement.

In summary, the manufacturing case study confirms that:

Multidisciplinary integration significantly improves cost accuracy and relevance

Cost accounting becomes a strategic decision-support system

Information technology acts as a catalyst for integration

Behavioral alignment is essential for system effectiveness

Sustainability considerations expand the traditional role of accounting

These findings strongly support the argument that reimagining cost and accounting research through multidisciplinary integration is essential for addressing the complex challenges faced by modern manufacturing organizations.

9. CONCLUSION

The study demonstrates that reimagining cost and accounting research through multidisciplinary integration provides a comprehensive framework for addressing contemporary organizational challenges. The multiple case study analysis shows that integrating accounting with management, economics, technology, behavioral sciences, and sustainability enhances both operational efficiency and strategic effectiveness.

The paper contributes to academic literature by offering practical insights into multidisciplinary accounting research and highlights the need for collaborative, integrative approaches in both research and practice. Future research may extend this study through empirical validation using primary data and quantitative analysis.

10. LIMITATIONS AND SCOPE FOR FUTURE RESEARCH

10.1 Limitations of the Study

Despite offering valuable insights into the role of multidisciplinary integration in cost and accounting practices, the present study is subject to certain limitations that should be acknowledged for an objective interpretation of the findings.

First, the study is primarily based on a **case study approach using secondary data**. While case studies allow for an in-depth understanding of organizational practices within real-life contexts, reliance on secondary sources limits the ability to capture firsthand managerial perceptions and employee responses. The absence of primary data such as interviews or surveys may restrict the empirical generalization of findings.

Second, the study examines a **limited number of organizations** across selected sectors. Although the multiple case study design enhances comparative understanding, the sample size remains small and may not fully represent the diversity of accounting practices across industries or geographical regions.

Third, the findings are largely **qualitative in nature**, focusing on descriptive and analytical interpretations rather than quantitative measurement of outcomes. The study does not statistically measure the financial impact of multidisciplinary integration, such as cost reductions or profitability improvements, which may limit its predictive strength.

Fourth, the study assumes a relatively **stable organizational and economic environment**. Rapid changes in technology, regulatory frameworks, and market conditions may influence cost and accounting practices differently over time, thereby affecting the long-term applicability of the conclusions.

10.2 Scope for Future Research

The limitations of the present study open several promising avenues for future research. Future studies may adopt **empirical research designs** using primary data collected through surveys, interviews, or experiments to validate and extend the findings. Quantitative studies could statistically examine the relationship between multidisciplinary integration and organizational performance indicators.

Further research may focus on **sector-specific or industry-specific analysis**, such as manufacturing, healthcare, or digital enterprises, to develop customized multidisciplinary accounting frameworks. Longitudinal studies could also be undertaken to analyze the long-term impact of integrated cost and accounting systems over different business cycles.

Additionally, future research may explore the role of **emerging technologies** such as artificial intelligence, machine learning, and block-chain in transforming multidisciplinary accounting practices. Comparative studies between developing and developed economies would further enrich understanding of contextual differences.

Finally, future researchers may investigate the implications of multidisciplinary integration for **accounting education and curriculum design**, particularly in alignment with NEP 2020, to prepare future professionals for dynamic and integrated accounting roles.

Thus, the study is limited by its reliance on secondary data and illustrative case studies. The number of cases is also limited. Future research may involve empirical studies, industry-specific analysis, and the use of advanced analytical tools to validate and extend the findings.

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ICT TOOLS SUPPORTING THE LEARNING OF CHILDREN WITH DISABILITIES

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ABSTRACT

All students, regardless of gender, race, skin colour, ethnic or social origin, genetic characteristics, language, religion or belief, political or other opinions, membership of a national minority, economic status, place of birth, or disability, have the right to equitable education (Klironomos et al., 2006) and to be considered an integral part of the learning community. For universal access to education to be a concrete and achievable goal, teachers must be aware of the potential of ICT and acquire the necessary knowledge and operational skills to select and use ICT as an appropriate and promising tool to promote equity in educational opportunities, helping students with disabilities overcome learning barriers and thus improve their academic performance, as well as their autonomy and motivation for learning. This article illustrates the definition of ICT, the types of ICT tools and their use, and describes the advantages of ICT for students with disabilities.

KEYWORDS: ICT, CHILDREN WITH DISABILITIES; INCLUSIVE EDUCATION ASSISTIVE TECHNOLOGIES.

INTRODUCTION

Information and Communication Technology (ICT) can complement, enrich and transform education for the better. UNESCO shares knowledge on the many ways in which technology can enhance the universal accessibility of education, support teacher development, enhance the quality and relevance of education, strengthen inclusion and improve the governance and monitoring of education. Information and Communication Technology (ICT) is currently influencing every aspect of human life. It is playing a major role in the workplace, business, education and entertainment. Moreover, many individuals identify ICT as a catalyst for change. Such as, changing working conditions, information management and exchange, teaching methods, learning approaches, scientific research and facilitating information and communication technologies. In this digital age, the use of ICT in the classroom is important to provide students with the opportunity to learn and use the essential skills of the 21st century. ICT improves learning and teaching and has an important role for teachers in playing the role of creators of the pedagogical environment. ICT enables a teacher to present their teaching in an engaging manner and for learners at any level of the educational program to learn.

The use of technology in special education helps in breaking down barriers for students with disabilities and providing them with the flexibility of highly relevant educational programs. Properly designed software and hardware allow students with special needs to receive modern education and access any necessary information online. Therefore, in this chapter, we will gain a comprehensive understanding of how ICT can be useful for students with different disabilities.

MEANING OF INFORMATION AND COMMUNICATION TECHNOLOGY

ICT is the technology that supports information-related activities. Such activities include collecting data, processing data, storing data, and presenting data. These activities increasingly involve collaboration and communication. Hence, Information Technology (IT) has finally become Information and Communication Technology (ICT).

ICT is an umbrella term that includes any communication device, radio, television, cell phones, computer and network hardware, satellite systems, as well as various services and devices that are associated with ICT, such as video conferencing and distance learning.

Now let us understand the technologies available to individuals and students with various types of disabilities one by one.

TECHNOLOGY FOR THE CHILDREN WITH VISUAL IMPAIRMENT

Assistive Technology is an essential tool when it comes to managing visually impaired individuals. Such individuals require assistive technology for mobility, daily living, reading, writing, and employment, etc. Let us look at some of the assistive technologies used for visually impaired individuals and students.

Typoscope:

A typoscope can be used as a reading guide (single window) or a writing guide (multiple windows) depending on what is being created. A single window typoscope is useful for color blindness (albinism).

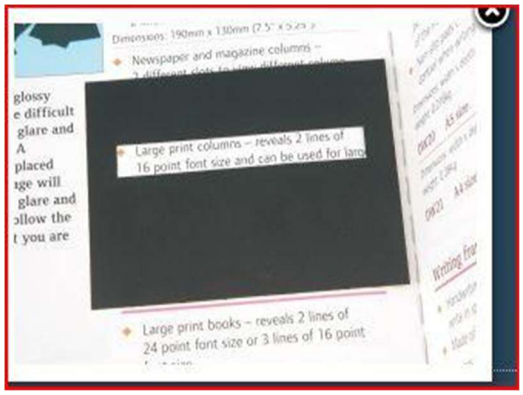

Figure-1: Reading Guide (Single Window)

Figure-2: Writing Guide (Multiple Windows)

Braille Reading Materials:

Braille is a tactile script of raised dots that enables visually impaired students to access information through touch. Learning to read Braille with the fingers is one of the oldest techniques for the path to literacy among visually impaired individuals. Braille codes used worldwide consist of a standard rectangular cell, with six dots in a 2 by 3 grid.

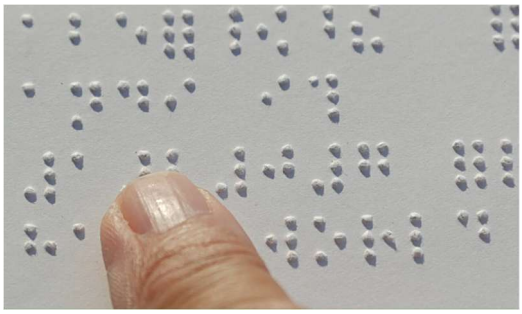

Figure-3: Braille reading material

Braille Translator Software:

Braille translation software translates electronic documents into Braille code and sends it to a Braille embosser (a special Braille printer - Braille embosser). Which produces a hard copy of the original text. Braille translation software recognizes various digital text file formats. E.g. MS Word, PDF, HTML etc. Common translation software includes Duxbury Braille Translator, Braille 2000 etc.

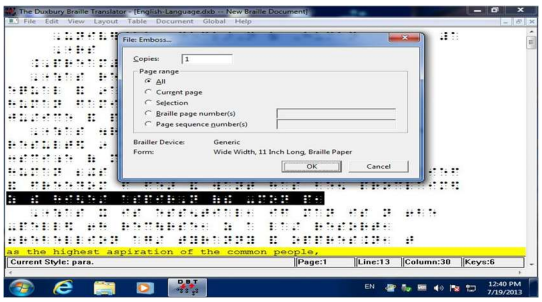

Figure-4: Duxbury Braille Translator

Screen Readers Software:

This software enables visually impaired and blind individuals or students to convert text on a computer screen and documents into synthetic speech, i.e. audio output, as well as keystrokes entered on the keyboard, and navigational information. Screen readers require the use of keyboard shortcuts, most of which require the user to memorize the keys. Many screen readers work with multiple programs, but some screen readers are specific to specific programs, e.g. JAWS, NDVA, COBRA, SuperNova, etc. NDVA is available free online.

Figure-5: Screen Readers Software

Digital audio recorder:

Non-display digital recorders are designed specifically for visually impaired individuals or students who can record audio of a teacher's lecture instead of taking written notes. E.g. PlexTalk.

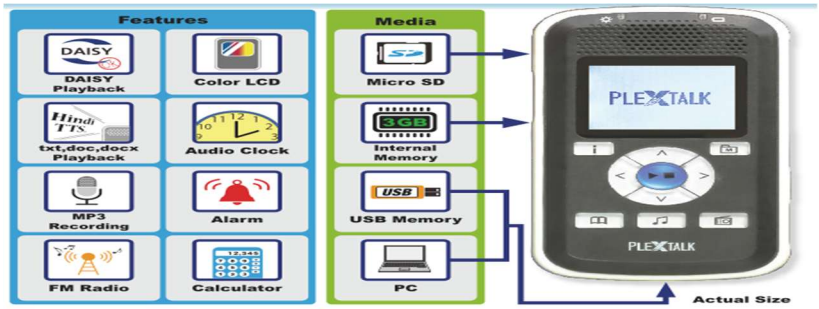

Figure-6: PlexTalk - Digital audio recorder

Technology for learning mathematical concepts:

Learning mathematical concepts is a major challenge for visually impaired students. For example, concepts such as direction, quantity, and shape require more cognitive processing when no visualization is possible. Tools such as Braille textbooks and talking calculators are useful in facilitating students' understanding of mathematical content. However, tactile aids and haptic technology can

sometimes be beneficial in enhancing concrete mathematical understanding. Some examples are:

1. Braille compass, Braille calculator, Braille protractor.
2. Protractor, Braille cube.
3. Talking calculator.
4. Tactile geometry kit.

Figure-7: Tactile geometric kit

TECHNOLOGY FOR THE CHILDREN WITH HEARING IMPAIRMENT

An assistive device or assistive technology is a device or technology that helps a person with a hearing loss or voice, speech, or language disorder communicate. These devices help a person hear more clearly, understand, and express thoughts more easily. With the development of digital and wireless technologies, more and more devices are becoming available to help people with hearing, voice, speech, and language disorders communicate more meaningfully and participate more fully in their daily lives.

Hearing aid:

A hearing aid is a device designed to improve hearing in a person with hearing loss to the point where they can hear sounds. Hearing aids are classified as medical devices in most countries. Modern hearing aid designs are being improved to accommodate hearing loss, physical features, and lifestyle of the wearer. The hearing aid is selected based on an audiogram (a graph of the ear showing the hearing loss) obtained from a recent examination of the person's ears and is programmed based on the frequency and loudness of the sound. Hearing aids are available in different types. Such as pocket-level hearing aids, BTE, ITC, ITE, CIC, etc.

Figure-8: Different types of hearing aids

Cochlear implant:

A cochlear implant is a small and complex electronic device that can help provide a sense of sound to a person with profound hearing loss. The implant consists of an external part that sits behind the ear and a second part that is surgically placed under the skin of the ear. A cochlear implant does not restore normal hearing. But it can help a hearing-impaired person hear sounds in the environment and understand speech.

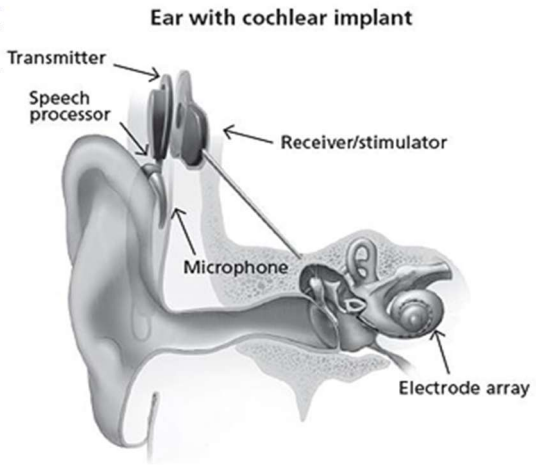

Figure-9: Cochlear implant

C-Print Technology:

C-Print is a speech-to-text (captioning) technology developed by the National Technical Institute for the Deaf at the Rochester Institute of Technology. The technology is being used successfully in many programs across the country to provide communication support for individuals who are deaf or hard of hearing. In addition to educational settings, C-Print can also be used in business and community settings, and is also proving useful for individuals with other disabilities, such as vision impairments or learning disabilities.

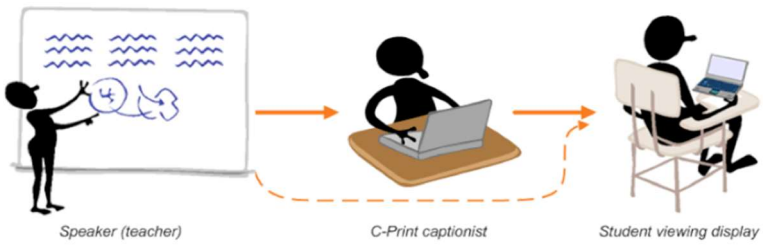

Figure-10: C-Print Technology

Telecommunication Devices for the Deaf:

Telecommunications Device for the Deaf (TDD), formerly known as the Teletype Machine (TTY), allows its user to make phone calls using text over a regular phone line. Each TDD has a keyboard with a text screen. The user either needs to connect to another person who has a TDD or can use a relay service to receive the call and convert the text into speech for the listener. Improvements in the technology of phones, pagers, text devices, and computer services have reduced the use of TDD.

Figure-11: Telecommunication Device for Deaf

Technology for the Children with Speech Impairment

Through speech and communication skills, we build and develop relationships. We use these skills to express and share our thoughts and feelings with each other. However, communication and speech can be a barrier for many people around us. Speech disorders are quite common in adults and children. Individuals with speech, language and communication disorders may have many difficulties such as problems with understanding, speaking, speaking, hoarseness, difficulty reading and writing. Fortunately, technological advances offer promising avenues for enhancing intervention and treatment for speech and language impairments. Speech-language therapy is a specialized science that provides treatment, support, and care for individuals with speech and language problems. Here are some techniques for individuals with speech and language disabilities.

Augmentative and Alternative Communication (AAC):

You may have seen someone writing in a notebook to answer a question. You may have seen people use gestures to communicate. You may have seen someone pointing at pictures on a computer or pressing buttons that speak for them. All of these are forms of augmentative and alternative communication (AAC). AAC includes all the ways we express our thoughts and feelings without speaking. People with severe speech or language problems may need AAC to help them communicate. Other people may say a few words, but use AAC for longer sentences. AAC can help when talking to friends and family, at school, at work, or when talking to people.

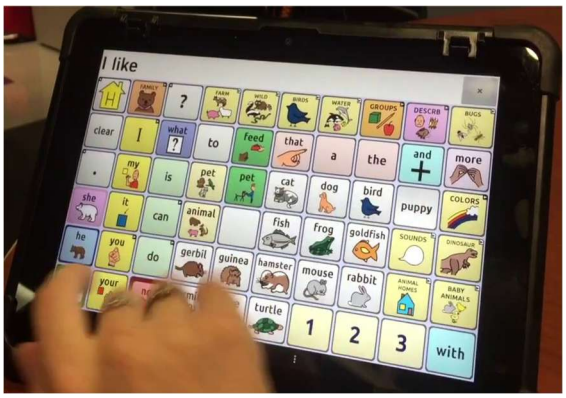

Figure-12: Augmentative and Alternative Communication (AAC)

Dr. Speech:

Dr. Speech is a clinical software that provides valuable assistance during the assessment and treatment of voice and speech disorders in children with hearing loss. It is used to assess the pitch, loudness, loudness, onset of sound, and maximum vowel and consonant pronunciation of a child or individual's voice using computer-based voice games.

Figure-13: Dr. Speech Software

Speech Apps:

Most children are very motivated by playing games and games can also affect a person who has articulation disorders. One of the best ways to use assistive technology to improve these articulation disorders is to use speech apps. Speech Wizard is one of the most popular options. It helps individuals with articulation disorders practice their voice, sentences, and phrases. While choosing such speech apps, one should ensure that the speech apps are designed by a licensed speech-language pathologist.

Figure-14: Speech Wizard app

Voice Output Communication Aids (VOCA):

Voice output communication aids (VOCA) are also called speech generating devices (SGD). They are portable electronic devices that allow a person to compose messages and produce speech. This method of augmentative and alternative communication (AAC) is used as a communication system for people with reduced speech or speechlessness.

Figure-15: Voice Output Communication Aids (VOCA)

Technology for Children with Locomotor Disabilities

Technology is advancing rapidly and new devices, mostly electronic, powered by efficient motors and batteries, are being developed on a regular basis. This is reducing the dependency on others for people with mobility disabilities. Assistive technology devices that did not exist yesterday, were too expensive or not well-designed, are now affordable, efficient and suitable for many of the needs of the individual. Here we will learn about some such technological or assistive technology devices.

Technology for Mobility:

Individuals with physical or movement disabilities may need assistive technology for mobility. Some mobility assistive technologies include:

Wheelchair
Walker
Crutches
Canes (sticks)
Prosthetic Devices

Figure-16: Wheelchair, Walker, Crutch, Cane

Mobility varies from person to person. Some people with physical or movement disabilities may be able to walk with the aid of a cane or prosthetic. Some people who are quadriplegic (paralyzed and have both arms and legs affected) may be able to control their mobility device with their mouth or head. Examples of such assistive technologies include:

Mouth stick
Head wand (hand wand)

Figure-17: Mouth stick

Technology for everyday life:

Self-help devices include devices for use in activities of daily living such as eating, bathing, cooking, dressing, toileting, maintaining the home, etc. These include adapted eating utensils, adapted books, pencil holders, page-turners, dressing aids, and adapted health care devices, etc.

Figure-18: Adapted spoon, Page-turner and Pencil holder

Changes at home or work:

Structural adaptations that eliminate or reduce barriers, such as ramps, elevators, bathroom modifications to make them accessible, automatic door opening technology, and wider entrances, etc.

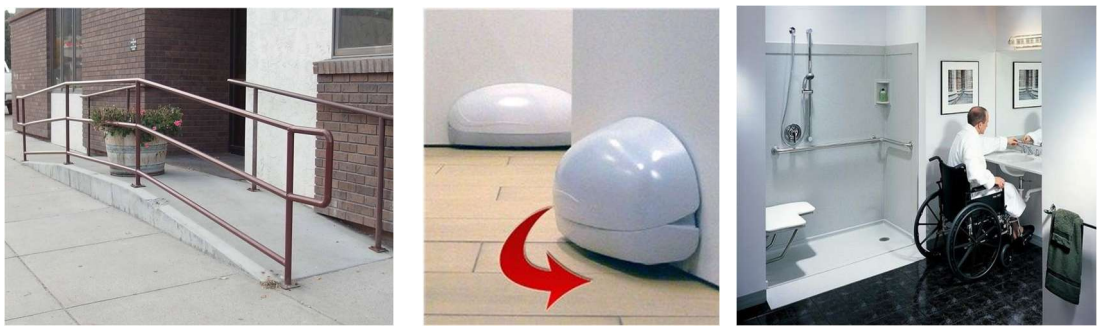

Figure-19: Ramp, Automatic door opening technology and Accessible bathroom

Technology for Children with Learning Disabilities

Assistive technology for children with learning disabilities is defined as any device, piece of equipment, or system that helps a child with learning disabilities. Using technology to enhance learning is an effective approach for many children. Additionally, students with learning disabilities often experience greater success when they are given the opportunity to use their abilities to work around their disabilities. Let us introduce some assistive technologies to help children or individuals with learning disabilities in their studies as follows.

Abbreviation expanders:

Used with word processing, this software program allows the user to create, store, and reuse abbreviations for frequently used words or phrases. The software also ensures the correct spelling of words and phrases coded as abbreviations.

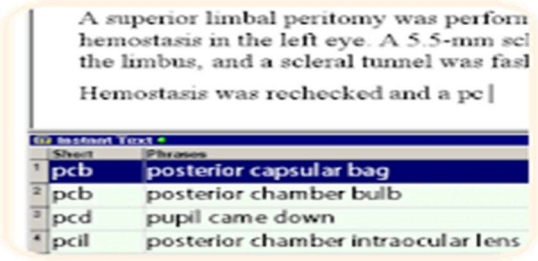

Figure-20: Abbreviation expanders

Alternative keyboards:

These programmable keyboards have special overlays that customize the look and function of a standard keyboard. Students who have learning disabilities or difficulty typing can benefit from customizations that include separate sets of color-coded keys and the addition of graphics to help them understand the keys.

Figure-21: Alternative keyboards

Electronic math worksheets:

Electronic math worksheets are software programs that can help the user organize, queue, and work on math problems on a computer screen. The numbers that appear on the screen can be read aloud by a speech synthesizer. This can be helpful for people who have difficulty organizing math problems with pencil and paper.

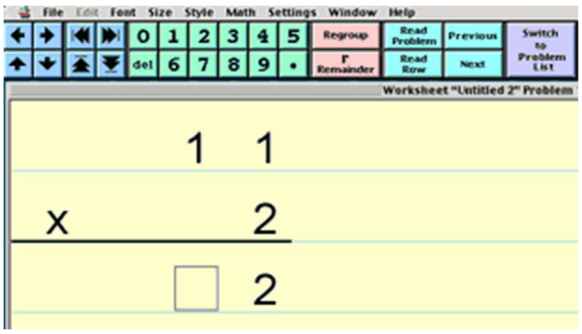

Figure-22: Electronic Math Worksheets

Talking calculator:

The talking calculator has a built-in speech synthesizer. It reads aloud each number, symbol, or operation key pressed by the person using it; it also speaks the answer to the problem. This auditory feedback can be used to check the accuracy of the keys pressed and verify the answer before transferring it to paper.

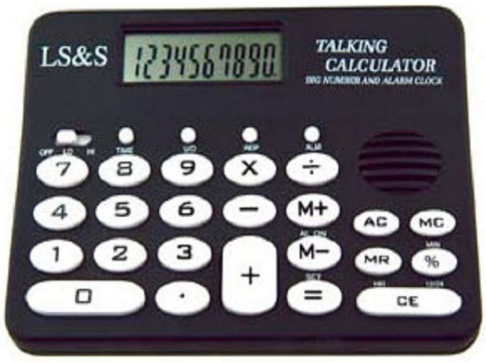

Figure-23: Talking Calculator

Word-prediction programs:

Word-prediction programs can assist the user during word processing by providing "word predictions." The predictions are based on spelling, syntax, and frequency of use. This prompts children who have difficulty writing to use correct spelling, grammar, and word choices with fewer keystrokes.

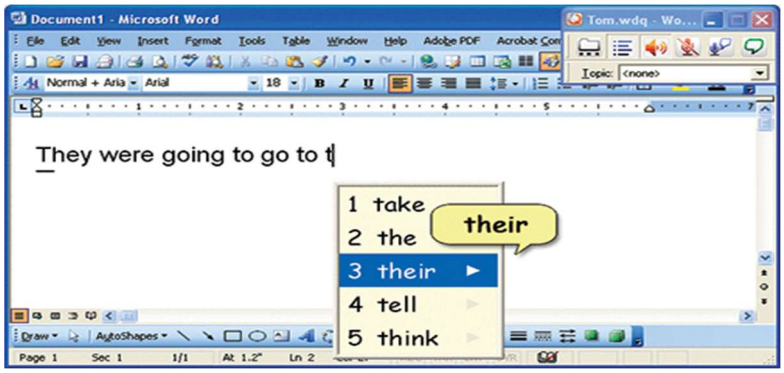

Figure-: Word-prediction programs

CONCLUSION

Assistive technology is a gift of modern engineering that helps people with disabilities or children perform tasks that were previously impossible for them. Most of these technologies run on replaceable batteries or rechargeable devices. These assistive devices are designed with such individuals in mind. They are affordable, efficient, and meet the individual needs of each individual. These technologies for people with disabilities make them more independent and enable them to perform small tasks with ease.

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THE IMPACT OF TARIFFS ON GLOBAL TRADE

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ABSTRACT

The **Liberation Day tariffs** are a broad package of import duties announced by U.S. president Donald Trump on April 2, 2025—a date he called Liberation Day. In a White House Rose Garden ceremony, Trump signed **Executive Order 14257**, Regulating Imports With a Reciprocal Tariff to Rectify Trade Practices That Contribute to Large and Persistent Annual United States Goods Trade Deficits. This order declared a national emergency over the United States' trade deficit and invoked the International Emergency Economic Powers Act (IEEPA) to authorize sweeping tariffs on foreign imports.

Executive Order 14257 imposed a 10% baseline tariff on imports from nearly all countries beginning April 5, with country-specific tariff rates scheduled to begin April 9. The Trump administration called these measures "reciprocal", asserting they mirrored and counteracted trade barriers faced by U.S. exports. Trade analysts rejected this characterization, noting that the tariffs often exceeded those imposed by foreign countries and included countries with which the U.S. had a trade surplus. Economists argued that the formula used to calculate the "reciprocal" tariffs was overly simplistic with little relation to trade barriers.

The Liberation Day tariffs announcement led to a global market crash. In response, the White House suspended the April 9 tariff increases to allow time for negotiation. By July 31, Trump had announced deals with just 8 trading partners: the UK, Vietnam, the Philippines, Indonesia, Japan, South Korea, the EU, and a truce expiring August 12 with China. He ordered country-specific "reciprocal" tariffs to resume on August 7, 2025.

KEYWORD: TARIFFS, IMPACT, WORLD,ECONOMY

tariff is a tax or duty imposed by a government on imported or exported goods and services. This border fee makes imported products more expensive, giving a price advantage to domestically produced goods and generating revenue for the imposing country's government.

Key Purposes of Tariffs

Governments use tariffs for various reasons, including:

Protecting domestic industries: By increasing the price of foreign goods, tariffs shield local businesses and "infant industries" from cheaper, more established international competition.

Generating revenue: Tariffs provide a steady source of income for the government. Historically, they were a primary source of federal revenue for countries like the United States.

Political leverage and retaliation: Countries can use tariffs as a bargaining chip in trade negotiations or as a response to another nation's unfair trade practices, which can sometimes lead to trade wars.

Ensuring national security: Tariffs can be applied to critical sectors (e.g., steel, energy) to ensure the nation does not become overly dependent on foreign suppliers for essential materials.

TYPES OF TARIFFS

Tariffs are primarily structured in a few ways:

Ad valorem tariffs: This is a percentage-based tax calculated on the value of the imported product (e.g., a 10% tariff on a $1,000 car would be a $100 tax).

Specific tariffs: This is a fixed fee charged per unit of the imported item, regardless of its value (e.g., a $50 tariff per ton of steel).

Compound tariffs: This type combines both ad valorem and specific tariffs.

The importing business pays the tariff to the customs authority, but the cost is often passed on to the consumer in the form of higher prices.

KEY IMPACTS OF TARIFFS

Increased Prices for Consumers and Businesses Tariffs are a tax paid by domestic importers, who then pass the increased costs onto consumers in the form of higher prices for both imported and domestically produced goods. Businesses that rely on imported raw materials or components also face higher production costs, reducing profit margins or leading to price hikes for their final products. Disruption of Global Supply Chains Tariffs disrupt established, efficient international supply chains by forcing companies to seek alternative, potentially more expensive or less reliable, suppliers in non-tariffed regions. This can lead to production delays, increased logistical complexity, and reduced global trade volumes. Economic Slowdown and Unemployment Numerous studies have shown that tariffs can slow economic growth, reduce productivity, and increase unemployment in the long run. The resulting economic uncertainty can also deter businesses from making long-term investments. Retaliation and Trade Wars When one country imposes tariffs, its trading partners often respond with their own retaliatory tariffs. This cycle, known as a trade war, escalates trade barriers and strains international relations, as seen in the U.S.-China trade war that began in 2018.

Impact on Developing Countries Tariffs can impede the integration of developing countries into the global economy. They often face "tariff escalation," where low tariffs on raw materials rise sharply for processed goods, hindering their industrial development and ability to move up the value chain. You can find several comprehensive research papers and academic studies on the impact of tariffs on global trade from authoritative sources such as the International Monetary Fund (IMF) and the Bank for International Settlements (BIS). "Are tariffs bad for growth? Yes, say five decades of data from 151 countries" This study, published in the National Institutes of Health Library, finds that tariff increases are consistently associated with a statistically significant and persistent decline in output growth across both advanced and developing economies. The paper is available here: https://pmc.ncbi.nlm.nih.gov/articles/PMC7255316/. "Macroeconomic impact of tariffs and policy uncertainty" This BIS Bulletin analyzes direct and indirect effects of tariffs, including supply chain disruptions, trade diversion, and heightened uncertainty, which can significantly depress global growth and raise inflation. You can access the full analysis here: https://www.bis.org/publ/bisbull110.pdf.

MACROECONOMIC CONSEQUENCES (2025 DATA)

Global GDP Decline: Experts estimate that if current tariff levels remain, global GDP could fall by **0.5 to 2 percentage points** over the medium term. The IMF projected a potential 0.7 percentage point impact on global growth for 2025 due to prolonged escalations.

Inflationary Pressure: Tariffs have contributed to an "inflation wave." In the U.S., core goods prices were **1.9% above pre-2025 trends** as of June. Analysts estimate that 61–80% of these new tariff costs were passed directly to consumers.

Trade Volume Contraction: The WTO expected world merchandise trade to decline by **0.2% in 2025**, a sharp reversal from early-year growth expectations. Full implementation of proposed "reciprocal" tariffs could lead to a **1.5% decline** in global goods trade.

INDUSTRY-SPECIFIC IMPACTS

Automotive: Supply chains that cross borders multiple times have seen production costs rise by up to **15%** for manufacturers in Mexico. Consumers face price increases of up to **$3,000** for an average American-made car.

Electronics & Semiconductors: Chinese electronics now face cumulative tariffs as high as **145%** in the U.S. market. This has accelerated shifts in manufacturing to Vietnam, Malaysia, and India, though transitions are hampered by quality control and capacity limits.

Agriculture & Food: While a partial rollback occurred for over 200 food items to combat rising grocery prices, major exports like Indian textiles and apparel remained at **50% tariff rates**.

Energy & Raw Materials: On February 10, 2025, the U.S. expanded a **25% duty** to all steel and aluminum imports to protect domestic industries.

REGIONAL AND STRATEGIC REALIGNMENT

The "China Surge" and Trade Diversion: As direct U.S.-China trade collapsed (falling by **90%** in some scenarios), Chinese exports flooded other markets. Exports to the EU and ASEAN rose significantly, with China achieving a record **$1 trillion trade surplus** in late 2025.

India's Strategic Resilience: India has emerged as a "bright spot," with exports growing to **$824 billion in FY25**. While sectors like gems and jewelry were hit by a **50% U.S. tariff**, electronics exports surged by **50.5%**.

Nearshoring in Mexico and Canada: Despite facing **25% tariffs** since early 2025, Mexico has become a primary hub for "indirect" Chinese value-added goods entering the U.S. market.

TRADE POLICY UNCERTAINTY (TPU)

The "Trade Policy Uncertainty Index" reached record highs in **April 2025**. This uncertainty alone is estimated to shave **0.8 percentage points** off global merchandise trade growth by dampening business investment and consumer discretionary spending.

ECONOMIC CONSEQUENCES

Higher Consumer Prices and Inflation: Tariffs are taxes paid by domestic importers, who often pass the increased costs onto businesses and consumers in the form of higher prices. This can contribute to broader inflation, eroding consumer purchasing power.

Reduced Economic Growth and Employment: Economic studies consistently show that while tariffs might protect specific domestic industries in the short term, they generally lead to overall declines in domestic output, productivity, and employment in the medium to long term. The OECD predicts ongoing tariff increases could reduce global output by **0.3%** by 2026.

Market Distortions and Inefficiency: By making imported goods more expensive, tariffs can shield domestic industries from competition, potentially making them less efficient and less innovative over time.

Trade Imbalances: Tariffs are often imposed to reduce trade deficits, but evidence suggests they have little impact on a country's aggregate trade balance in the long run.

IMPACT ON GLOBAL TRADE DYNAMICS

Supply Chain Disruption: Companies that rely on imported raw materials or components face higher production costs, leading many to re-evaluate and diversify their supplier networks or shift production to other countries not subject to the tariffs. In 2025, **82%** of companies reported their supply chains were affected by new tariffs.

Retaliation and Trade Wars: The imposition of tariffs by one nation often prompts retaliatory tariffs from its trading partners, creating a cycle of escalating trade barriers and heightened global tensions, such as the U.S.-China trade war.

Challenges for Developing Economies: Tariffs, especially "tariff escalation" (low tariffs on raw materials, high tariffs on finished goods), can make it difficult for developing nations to move up the value chain and diversify their exports beyond primary commodities, perpetuating global inequality.

Increased Uncertainty: A volatile tariff environment creates significant uncertainty for businesses, complicating long-term planning and investment decisions across international markets. The Trade Policy Uncertainty Index reached record highs in **April 2025**.

Trade Volume Contraction: The World Trade Organization (WTO) projected world merchandise trade would decline by **0.2%** in 2025 due to trade tensions and policy instability, a sharp reversal from early-year growth expectations.

Key Statistical Impacts of Tariffs (2024-2025)

	Statistic
Global Merchandise Trade Growth (2025)	Projected decline of **0.2%** (potentially up to 1.5% with further escalation)
Trade Value Affected by New Tariffs (2024-2025)	**$2.64 trillion** of imports worldwide affected (11.1% of total imports)
Global GDP Growth Forecast (2025)	Expected to slow to **2.3%** globally
US Effective Tariff Rate (post-2025 tariffs)	Increased from 2.8% (pre-2025) to over **20%** by September 2025
Companies Reporting Supply Chain Impact	**82%** of companies reported their supply chains were affected by new tariffs in 2025
Trade Policy Uncertainty Index	Reached its highest level this century in early **2025**

DETAILED STATISTICS

Trade Volume Contraction: The World Trade Organization (WTO) has repeatedly revised down its forecasts, predicting a 0.2% decline in world merchandise trade volume for 2025 under current conditions. This is a significant reversal from the 2.9% growth seen in 2024.

Widespread Supply Chain Disruption: A 2025 survey by McKinsey revealed that 82% of companies' supply chains were impacted by new tariffs, with 20-40% of their activity affected in some way. In response, many firms are increasing inventories (45%) or pursuing dual sourcing (39%).

Inflationary and Price Pressure: Economists estimate that 61–80% of new tariff costs were passed on to U.S. consumers. In the U.S., core goods inflation has begun to rise as a direct result.

Trade Diversion: Tariffs have led to significant trade diversion. Following U.S. tariffs on China, U.S. imports from China fell sharply, while Chinese exports to the EU, ASEAN, and Africa rose considerably. Imports into the U.S. from countries like Vietnam also increased.

Economic Uncertainty: The high level of trade policy uncertainty has led 25-32% of surveyed CFOs in manufacturing to plan a reduction in hiring and capital spending, which dampens overall economic activity.

Global Trade and Economic Statistics (2025)

	Statistic	Source/Context
Global Merchandise Trade Growth	Projected to decline by **0.2%** in volume (could reach -1.5% with further escalation)	WTO
Global GDP Growth	Forecasted to slow to **2.3%** or **3.2%** depending on scenario and source	UNCTAD/IMF
Trade Policy Uncertainty Index	Reached record highs, surpassing peaks of the 2008 crisis and COVID-19 pandemic	
Global Imports Affected by New Tariffs	**$2.64 trillion** worth of imports were affected by new measures introduced between Oct 2024 and Oct 2025	WTO
Companies Reporting Supply Chain Disruption	**82%** of companies reported their supply chains were affected by new tariffs in 2025	McKinsey
U.S. Effective Tariff Rate	Increased from 2.2% (end-2024) to approximately **9.75%** by July 2025	Penn Wharton Budget Model
Trade Diversion (Chinese Exports)	Chinese exports projected to rise by **4-9%** across regions outside North America as trade is redirected	WTO

STATISTICAL BREAKDOWN

Trade Volume Contraction: The World Trade Organization (WTO) noted that the projected decline of 0.2% in merchandise trade for 2025 is nearly three percentage points lower than the expected baseline without recent policy shifts. The decline is particularly steep for North American exports, projected to drop by **12.6%**.

Inflationary Pressures: Tariffs have contributed to rising prices. In the United States, economists estimate that **61–80%** of new tariff costs were passed on to consumers, with core goods inflation starting to rise as a result.

Supply Chain Adaptation: In response to tariffs, 45% of surveyed companies are increasing inventories and 39% are pursuing dual sourcing strategies. Many firms (38%) are also planning to reduce their supply chain presence in China.

Trade Diversion Effects: The U.S. trade deficit with China significantly decreased, while imports from countries like Vietnam and Mexico grew, illustrating how trade has been rerouted to avoid tariffs.

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DATA-DRIVEN ANALYSIS OF THE AMERICAN DREAM IN INDIAN DIASPORIC FICTION

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ABSTRACT

The American Dream has long been projected as a universal promise of opportunity, mobility, and self-advancement. Within Indian diasporic fiction, however, this promise is repeatedly questioned, revised and destabilised. Rather than functioning solely as a narrative of success, the American Dream emerges as a complex structure shaped by power relations, cultural regulation, emotional discipline and ideological endurance. This paper examines how the American Dream operates in Indian diasporic novels through a data-driven literary methodology that combines qualitative interpretation with visible analytical evidence.

The study analyses four Indian diasporic novels—The Namesake written by Jhumpa Lahiri, Jasmine written by Bharti Mukherjee, Oleander Girl written by Chitra Banerjee Divakaruni and Bye Bye Blackbird by Anita Desai—by treating literary texts as structured data. Instead of relying exclusively on close reading, the research adopts a corpus-based coding framework that identifies recurring discourse types, character power positions, narrative silences and functional shifts of the American Dream across narrative stages. Multiple data tables are employed to demonstrate how economic aspiration frequently coexists with psychological instability, cultural surveillance and constrained agency.

The findings suggest that the American Dream in Indian diasporic fiction undergoes a significant transformation: it begins as a motivating promise, evolves into a disciplinary mechanism and ultimately functions as a psychological burden rather than a fulfilled goal. Economic mobility does not necessarily lead to emotional resolution; instead, it often intensifies identity fragmentation and silence. By integrating data analysis with literary interpretation, this study moves beyond descriptive thematic criticism and offers a methodologically rigorous model for examining ideology and power in diasporic narratives. The paper contributes to contemporary debates in diaspora studies and digital humanities by demonstrating how data-driven approaches can deepen critical engagement with literary texts without reducing their interpretative richness.

KEYWORDS: AMERICAN DREAM, INDIAN DIASPORA, DATA-DRIVEN LITERARY ANALYSIS, DISCOURSE, POWER, IDENTITY.

1. INTRODUCTION

The American Dream continues to occupy a dominant position within global narratives of migration, frequently represented as a promise of economic opportunity, personal freedom and self-transformation. For generations of immigrants, the dream has functioned as a powerful motivation to cross borders and reimagine the self within a new socio-cultural framework. Yet, in Indian diasporic fiction, this ideal rarely appears as a stable or fulfilled reality. Instead, it is repeatedly re-shaped by experiences of cultural displacement, racial visibility, emotional loss and structural regulation.

Indian diasporic novels often portray migration not as a linear journey toward success but as an ongoing process of negotiation. Characters arrive in the host nation carrying expectations of stability and recognition, only to encounter systems that demand adaptation, silence and endurance. While economic

mobility may be achieved, emotional belonging and identity coherence remain uncertain. This disjunction reveals the American Dream as an ideological construct that governs behavior and expectation rather than simply offering reward.

Traditional literary criticism has examined these narratives primarily through close reading and thematic interpretation, focusing on concepts such as hybridity, nostalgia, alienation and cultural conflict. Such approaches have been instrumental in revealing the emotional depth of diasporic experience. However, they often depend on selective textual moments and subjective interpretation. As a result, broader structural patterns—how frequently certain discourses recur, how power is distributed among characters or how silence functions narratively—remain insufficiently examined.

This study argues that a data-driven approach can address this limitation without undermining literary complexity. By organising texts into a structured corpus and applying qualitative coding, it becomes possible to identify patterns that are difficult to capture through impressionistic reading alone. Data analysis, in this context, does not replace interpretation; rather, it strengthens interpretative claims by making them visible, systematic, and defensible.

The present research adopts a data-driven literary methodology to examine how the American Dream functions across multiple Indian diasporic novels. Instead of asking what the American Dream symbolically represents, the study asks how it operates within narrative structures. How often is the dream associated with economic discourse as opposed to psychological struggle? Which characters experience agency and which remain structurally constrained? Where does narration fall silent and what ideological work does that silence perform?

To address these questions, the paper analyses four Indian diasporic novels that span different decades and narrative styles: The Namesake, Jasmine, Oleander Girl and Bye Bye Blackbird. These texts are examined through multiple analytical layers, including discourse type distribution, character power-position coding, narrative silence frequency and functional shifts of the American Dream across narrative phases. Each layer is supported by clearly presented data tables that demonstrate patterns across the corpus.

By foregrounding data alongside interpretation, this study positions the American Dream not merely as a thematic concern but as a regulatory structure embedded within diasporic storytelling. The introduction of visible data analysis allows the research to move beyond descriptive criticism toward a more rigorous examination of ideology, power and endurance in Indian diasporic fiction. In doing so, the paper contributes to evolving methodologies in English literary studies and demonstrates the relevance of data-driven approaches within the humanities.

2. REVIEW OF LITERATURE

Indian diasporic literature has generated extensive critical attention for its exploration of migration, displacement and identity negotiation. Scholars have consistently emphasised how diasporic subjects inhabit liminal spaces between homeland and host nation, negotiating belonging through memory, language and cultural practice. Within this body of criticism, the American Dream frequently appears as a contested ideal rather than an attainable reality.

Early critical readings of Indian diasporic fiction often focused on cultural conflict and nostalgia, examining how immigrants attempt to preserve traditions while adapting to new environments. Such

studies highlight the emotional tension between assimilation and cultural retention, suggesting that migration produces hybrid identities rather than complete transformation. In this context, the American Dream is interpreted as a motivating myth that sustains movement but rarely guarantees fulfilment.

Critical engagement with The Namesake foregrounds the relationship between identity and cultural inheritance. Scholars argue that the protagonist's struggle with naming, belonging and self-definition reflects a broader diasporic condition in which identity remains fluid and unresolved (Lahiri 64). Rather than achieving stability through professional success, the character experiences persistent emotional uncertainty, challenging the assumption that economic mobility leads to personal fulfilment.

Similarly, critical readings of Jasmine emphasise transformation as a survival strategy rather than a sign of empowerment. Migration in the novel is frequently associated with violence, instability and constant reinvention, suggesting that the American Dream demands adaptability at the cost of psychological coherence (Mukherjee 121). Critics note that the protagonist's multiple identities reflect not freedom of choice but the pressures imposed by hostile social and political environments.

Studies on Oleander Girl focus on emotional displacement and the unresolved longing for home. Scholars observe that despite geographical mobility, the novel resists narrative closure by foregrounding uncertainty and introspection (Divakaruni 198). The American Dream, in this reading, functions as a background expectation rather than a realised goal, reinforcing emotional suspension rather than resolution.

Critical responses to Bye Bye Blackbird examine the psychological impact of migration and racial marginalisation. The novel has been read as a study of alienation in which economic aspiration fails to compensate for emotional isolation and cultural exclusion (Desai 87). These readings underscore the limitations of the American Dream when confronted with everyday experiences of discrimination and unbelonging.

While these studies offer valuable insights into individual texts, much of the existing scholarship remains text-specific and interpretative. Comparative analyses across multiple novels are relatively limited and few studies attempt to examine how the American Dream operates structurally across different narratives. As a result, recurring patterns—such as the dominance of psychological struggle over economic success or the persistence of silence after trauma—are often discussed impressionistically rather than systematically.

Recent developments in digital humanities and corpus linguistics have begun to influence literary studies by introducing data-oriented methods. Corpus-based analysis allows scholars to examine large bodies of text in order to identify recurring discourses, thematic concentrations and ideological tendencies (McEnery and Hardie). Such approaches emphasise pattern recognition and comparative scope, offering an alternative to purely subjective interpretation.
However, many corpus-based literary studies remain limited to keyword frequency and lexical analysis. While useful, these methods risk reducing complex narratives to numerical representation if not accompanied by interpretative depth. There is a growing recognition that data-driven literary research must integrate qualitative analysis in order to remain sensitive to narrative context and ideological nuance.

This study builds on these methodological developments by integrating corpus-based organisation with qualitative coding and structural analysis. Rather than focusing solely on word frequency, the research examines discourse types, character power positions, narrative silences and functional shifts of the American Dream across multiple texts. By doing so, it addresses a critical gap in diasporic literary scholarship: the absence of visible, comparative data that supports interpretative claims.

The present review thus establishes the need for a methodological approach that combines literary interpretation with structured data analysis. Such an approach enables a more rigorous examination of how the American Dream operates not only as a thematic concern but as an ideological system embedded within Indian diasporic fiction.

3. RESEARCH METHODOLOGY

This study adopts a data-driven literary research methodology that integrates qualitative interpretation with systematic textual coding. The objective of this methodological approach is to move beyond impressionistic close reading and to generate visible analytical evidence that supports literary arguments. The novels are treated not merely as narrative texts but as structured data sources that can be examined comparatively.

3.1 Corpus Selection

The corpus for the present study consists of four Indian diasporic novels: The Namesake, Jasmine, Oleander Girl, and Bye Bye Blackbird. These texts were selected on the basis of three criteria. First, each novel foregrounds migration and diasporic experience as a central narrative concern. Second, the American Dream functions as an implicit or explicit motivating force within all four narratives. Third, the novels span different decades and narrative styles, allowing for comparative analysis across time and context.

3.2 Data Construction and Coding Process

Rather than relying on automated software tools, the data in this study was generated through manual qualitative coding following repeated close readings of the texts. Each novel was read multiple times with specific analytical lenses in mind. During this process, narrative units such as sentences, passages, and scenes were coded according to predefined categories.

Four primary discourse categories were identified:

Economic discourse (employment, success, legality, material aspiration)

Cultural discourse (tradition, family, language, memory, identity)

Surveillance discourse (racism, exclusion, legality, control, visibility)

Psychological discourse (fear, anxiety, loneliness, confusion, silence)

Each instance where a discourse category was clearly dominant was counted as one coded unit. These counts form the basis of the numerical data presented in the tables. It is important to note that the figures represent frequency of occurrence, not percentages. This approach was adopted to avoid distortion caused by differences in novel length and narrative density.

3.3 Additional Analytical Layers

Beyond discourse coding, three additional layers of analysis were employed.

First, power-position coding was used to classify major characters according to their degree of agency within the narrative system. Characters were categorised as agents, negotiators, subjects or displaced subjects.

Second, narrative silence analysis identified moments where trauma, racial discrimination or emotional rupture were followed by narrative absence or lack of articulation. Such silences were treated as meaningful data rather than narrative gaps.

Third, functional shift analysis examined how the role of the American Dream changes across narrative stages—from promise to motivation, discipline and psychological burden.
This multi-layered methodology ensures that the data analysis remains grounded in literary reading while producing structured and defendable results.

4. DATA ANALYSIS AND INTERPRETATION

Table 1: Distribution of Discourse Types Across the Corpus

Novel	Economic	Cultural	Surveillance	Psychological
The Namesake	38	26	14	42
Jasmine	41	19	36	48
Oleander Girl	29	34	18	31
Bye Bye Blackbird	27	22	21	39

Interpretation:
Table 1 demonstrates that psychological discourse dominates across all four novels. Although economic discourse plays a significant role—particularly at the beginning of migration narratives—it is consistently overshadowed by references to emotional struggle, confusion and inner conflict. This pattern indicates that the American Dream operates less as an economic reality and more as a psychological condition.

The high frequency of surveillance discourse in Jasmine reflects the novel's emphasis on control, legality and radicalised violence. Migration in this narrative is accompanied by constant monitoring and threat, reinforcing the disciplinary dimension of the American Dream. In contrast, Oleander Girl shows a stronger presence of cultural discourse, highlighting memory and introspection rather than overt surveillance.

Table 2: Power-Position Coding of Major Characters

Character	Novel	Economic Mobility	Power Position
Gogol	The Namesake	High	Negotiator
Jasmine	Jasmine	Medium	Subject â†' Agent â†' Subject
Korobi	Oleander Girl	Medium	Negotiator
Dev	Bye Bye Blackbird	Low	Displaced Subject

Interpretation:

This table reveals a consistent separation between economic mobility and narrative agency. Gogol achieves professional success yet remains emotionally uncertain, occupying a negotiator position rather than full control. Jasmine's shifting power position highlights how survival demands transformation, often at the cost of autonomy. These patterns suggest that the American Dream allows limited mobility while maintaining structural control.

Table 3: Frequency of Narrative Silences

Novel	Number of Silence Instances
The Namesake	17
Jasmine	23
Oleander Girl	19
Bye Bye Blackbird	21

Interpretation:

Narrative silence appears most frequently in Jasmine, where moments of violence and trauma are followed by narrative compression or absence. Such silences prevent critical reflection and normalise suffering. Across the corpus, silence functions as a stabilising mechanism that sustains endurance while limiting resistance. This reinforces the ideological power of the American Dream by discouraging open confrontation with loss.

Table 4: Functional Shifts of the American Dream

Narrative Phase	Dominant Function
Pre-migration	Promise
Early migration	Motivation
Mid-narrative	Discipline
Narrative closure	Psychological Burden

Interpretation:

Table 4 illustrates how the American Dream changes function across narrative progression. Initially presented as a promise that motivates migration, it gradually becomes a disciplinary force that regulates behaviour and expectation. By the conclusion of each novel, the dream functions as a psychological burden rather than a fulfilled ideal, revealing its ideological role within diasporic storytelling.

SYNTHESIS OF DATA FINDINGS

Taken together, the data tables demonstrate that the American Dream in Indian diasporic fiction operates as a regulatory structure rather than a narrative of success. Psychological discourse outweighs economic aspiration, agency remains constrained despite mobility, silence normalises trauma and

functional shifts reveal increasing ideological control. These findings collectively support the argument that diasporic endurance is sustained not through fulfilment but through discipline.

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THE GENERATION OF HUMANS AND ARTIFICIAL INTELLIGENCE

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ABSTRACT

The field of artificial intelligence moves fast. It has only been 8 years since the modern era of deep learning began at the 2012 Image Net competition. Progress in the field since then has been breathtaking and relentless. If anything, this breakneck pace is only accelerating. Five years from now, the field of AI will look very different than it does today. are currently considered cutting-edge will have become outdated; methods that today are nascent or on the fringes will be main stream.

KEYWORDS: TECHNOLOGY AND BUSINESS, ARTIFICIAL INTELLIGENCE ,THE NEXT GENERATION OF AI, GENERATIVE AI. HUMAN GENERATION .

INTRODUCTION

A new generation of artificial intelligence (AI) represents the next leap in the evolution of intelligent systems, driven by advancements in machine learning, natural language processing, robotics, and other areas. What will the next generation of artificial intelligence look like? Which novel AI approaches will unlock currently unimaginable possibilities in technology and business? This article highlights three emerging areas within AI that are poised to redefine the field—and society—in the years ahead. Study up now.

UNSUPERVISED LEARNING

The dominant paradigm in the world of AI today is supervised learning. In supervised learning, AI models learn from datasets that humans have curated and labeled according to predefined categories. (The term “supervised learning” comes from the fact that human “supervisors” prepare the data in advance.) Actor Gene Hackman And His Wife Found Dead In Their New Mexico Home Paramount Rolls Back Diversity Hiring Targets: Here Are All The Companies Cutting DEI Programs NYT Mini’ Clues And Answers For Thursday, February 27 While supervised learning has driven remarkable progress in AI over the past decade, from autonomous vehicles to voice assistants, it has serious limitations.

The process of manually labeling thousands or millions of data points can be enormously expensive and cumbersome. The fact that humans must label data by hand before machine learning models can ingest it has become a major bottleneck in AI.

FEDERATED LEARNING

The concept of federated learning was first formulated by researchers at Google in early 2017. Over the past year, interest in federated learning has exploded: more than 1,000 research papers on federated learning were published in the first six months of 2020, compared to just 180 in all 2018. One of the overarching challenges of the digital era is data privacy. Because data is the lifeblood of modern artificial intelligence, data privacy issues play a significant (and often limiting) role in AI’s trajectory. he standard approach to building machine learning models today is to gather all the training data in one place, often in the cloud, and then to train the model on the data. But this approach is not practicable for much of the world’s data, which for privacy and security reasons cannot be moved to a central data repository. This makes it off-limits to traditional AI techniques.

The original federated learning use case was to train AI models on personal data distributed across billions of mobile devices. As those researchers summarized: "Modern mobile devices have access to a wealth of data suitable for machine learning models....However, this rich data is often privacy sensitive, large in quantity, or both, which may preclude logging to the data center....We advocate an alternative that leaves the training data distributed on the mobile devices, and learns a shared model by aggregating locally-computed updates."

The wave of data privacy legislation being enacted worldwide today (starting with GDPR and CCPA, with many similar laws coming soon) will only accelerate the need for these privacy-preserving techniques. Expect federated learning to become an important part of the AI technology stack in the years ahead.

TRANSFORMERS

Open AI's release of GPT-3, the most powerful language model ever built, captivated the technology world this summer. It has set a new standard in NLP: it can write impressive poetry, generate functioning code, compose thoughtful business memos, write articles about itself, and so much more. GPT-3 is just the latest (and largest) in a string of similarly architected NLP models—Google's BERT, Open AI's GPT-2, Facebook's RoBERTa and others—that are redefining what is possible in NLP.

ransformers' great innovation is to make language processing parallelized: all the tokens in a given body of text are analyzed at the same time rather than in sequence. In order to support this parallelization, Transformers rely heavily on an AI mechanism known as attention. Attention enables a model to consider the relationships between words regardless of how far apart they are and to determine which words and phrases in a passage are most important to "pay attention to." Transformers were introduced in a landmark 2017 research paper. Previously, state-of-the-art NLP methods had all been based on recurrent neural networks (e.g., LSTMs). By definition, recurrent neural networks process data sequentially—that is, one word at a time, in the order that the words appear.

While leading AI companies like Google and Facebook have begun to put Transformer-based models into production, most organizations remain in the early stages of productizing and commercializing this technology. OpenAI has announced plans to make GPT-3 commercially accessible via API, which could seed an entire ecosystem of startups building applications on top of it. Why is parallelization so valuable? Because it makes Transformers vastly more computationally efficient than RNNs, meaning they can be trained on much larger datasets. GPT-3 was trained on roughly 500 billion words and consists of 175 billion parameters, dwarfing any RNN in existence. Expect Transformers to serve as the foundation for a whole new generation of AI capabilities in the years ahead, starting with natural language. As exciting as the past decade has been in the field of artificial intelligence, it may prove to be just a prelude to the decade ahead.

This new generation is characterized by several key aspects:

1. Deep Learning and Neural Networks: The current AI models are increasingly powered by deep learning techniques, which involve multi-layered neural networks that can learn from vast amounts of data. These models can perform complex tasks such as language translation, image recognition, and autonomous decision-making.

2. Generative AI: This refers to AI systems capable of generating new content, such as text, images, music, or even video, based on the input they receive. Examples include OpenAI's GPT models and DALL·E, which can generate realistic text and images respectively.

3. Ethical AI and Responsible Development: There is a growing focus on ensuring AI systems are developed responsibly. This includes addressing concerns around fairness, bias, transparency, and privacy. AI models need to be aligned with ethical guidelines to ensure they are used for the greater good of society.

4. Enhanced Natural Language Understanding: With advancements in NLP (Natural Language Processing), AI can understand and generate human-like text with incredible nuance. AI models are becoming increasingly capable of handling more sophisticated conversations, providing context-aware responses, and even understanding humor or emotions.

5. General AI: While current AI is mostly narrow (designed for specific tasks), research is pushing towards Artificial General Intelligence (AGI)—AI that can understand, learn, and apply knowledge in a broad, human-like manner. However, AGI is still a distant goal.

6. Human-AI Collaboration: The future of AI also revolves around collaborative systems, where humans and AI work together to solve complex problems. Rather than replacing humans, AI augments human capabilities .

7. Self-learning and Autonomous Systems: New AI generations are incorporating more self-learning capabilities, meaning they can adapt and improve over time without needing constant retraining. This is especially evident in autonomous vehicles and robotic systems that can operate in dynamic, unpredictable environments.

This new generation of AI promises transformative changes across industries, but it also raises questions about job displacement, security, and the need for regulatory frameworks to guide its development.

TYPES OF GENERATION OF HUMAN

The Greatest Generation – born 1901-1927. ...are known to have been born and come of age in the "American Century" of economic growth, technological progress, and mostly military triumph. The Silent generation describes adults born from 1928 through 1945.

What Is the Greatest Generation?

The Greatest Generation is a term used to describe those Americans who grew up during the Great Depression and fought in World War II, or whose labor helped win it. The term "the Greatest Generation" is thought to have been coined by former NBC Nightly News anchor and author Tom Brokaw in his book by the same name. The Greatest Generation commonly refers to those Americans who were born in the 1900s through the 1920s.The Greatest Generation members lived through the Great Depression and many of them fought in World War II.These individuals have often been described as driven, patriotic, and team players.The Greatest Generation members also tend to be the parents of the Baby Boomer generation.

Understanding the Greatest Generation

There are no precise dates that define when members of the Greatest Generation were born, though many give a range of the early 1900s to the mid-1920s. The common characteristic of Greatest Generation members is that they lived through and experienced the hardships of the Great Depression and later either fought in World War II or worked in the industries that contributed to winning the war. Newsman Tom Brokaw is often credited with popularizing the term through his book "The Greatest Generation," which profiled people who came of age during World War II and was inspired by Brokaw's attendance at the 40th-anniversary commemoration of the D-Day invasion of mainland Europe.1 Brokaw's profiles focused on the soldiers who fought the war, as well as the workers whose labor provided the essential material and services in support of them.

The Greatest Generation and Other Demographics

Generally speaking, the Greatest Generation are the parents of the "**Baby Boomers**" and are the children of the "Lost Generation" (those who grew up during or came of age during World War I). They preceded what is known as the "Silent Generation," a cohort born between the mid-1920s to the early-to-mid 1940s. The grandchildren of the Greatest Generation are members of Generation X, Generation Y, and their great-grandchildren tend to be Millennials and Gen Z. Members of the Greatest Generation currently fall into the "retirees" demographic and are currently collecting Social Security benefits. The differences between generations have been extensively studied and socio-economic models have been created to help plan for future government expenditures and programs to plan for changes in current demographics.

Why Are They Called the Greatest Generation?

"The Greatest Generation" was popularized by former NBC Nightly News anchor and author Tom Brokaw in his book by the same name. The term was meant as a tribute to the resilience and patriotic spirit of those who lived through the Great Depression and then fought in World War II. 2.“Baby boomer” is a term used to describe those who were born from 1946 to 1964.They formed the largest generational group in U.S. history until the millennial generation slightly surpassed them. The baby boomer generation makes up a substantial portion of the world's population, especially in developed nations. Baby boomer” refers to a member of the generation that was born between the end of World War II and the mid-1960s.Baby boomers remain economically and politically influential because of their large numbers and the relative prosperity of the U.S. economy during their working careers. Many are facing serious financial challenges, however, as more and more baby boomers reach retirement age.Several million baby boomers have died but immigration to the U.S. has helped replenish the supply.

Baby Boomer Facts and Figures

The generation of baby boomers emerged after the end of World War II when birth rates around the world spiked. The explosion of infants became known as the baby boom when 76 million babies were born in the United States alone. Several million baby boomers have died in the decades since but immigration to the U.S. has helped replenish the supply. The U.S. Census Bureau estimates that the baby boom population has reached about 73 million based on 2020 census data, the latest info available. The generation of baby boomers remains a powerful force in the U.S. economy and will most likely continue to be one for years to come. Boomers are the longest-living generation in history so far and increasing life expectancy makes it likely that they'll spend more time in retirement than their parents did, raising concerns about the ongoing viability of the Social Security system.

Generation X Overview

Generation X refers to people born between the mid-1960s and about 1980, directly following the Baby Boomers generation. Aswithmost generational names, Gen X is a common descriptor intended to help identify a group of people who grew up in similar economic, technological, and political circumstances.Gen X is also known as the “MTV Generation,” the “Latchkey Generation,” and the “Forgotten Generation” (not to be confused with the Silent Generation, known for serving in the Korean War which is often called the “Forgotten War”). Generation X is sandwiched between the Baby Boomers born before them and Millennials, or Generation Y, who follow after them.

Why Generation “X”?

Generation X encompasses the children born in the ‘60s and ‘70s when shifting societal and cultural changes started by the after-effects of World War II were becoming more prominent. For example, many more women were working, technology was rapidly changing, and divorce was on the rise. Generation X is a term born from generational theory in the early 1990s, a time when X symbolized an unknown variable or a desire not to be defined. While not definitive sociological science, it helps group the population into generalized groups with similar characteristics.

Generation Y (1981-1996)-The Millennials

Millennials are those born between 1981 and 1996, currently ages 26–41. These individuals were shaped by digital communication technologies and are known for their intrinsic desire for a sense of communal, democratic innovation where one is always expected to share new ideas and work as a team player (Karr, 2021). Millenials were the first generation to be raised with smartphones, instant communication methods, and social networking. Due to the availability of technology and its integration as an "essential" part of daily life, Millennials have been groomed by technology, and technology has shaped their interactions. This generation largely trusts in the ability of technology to underpin and advance the workforce and relies on it for nearly every aspect of their lives.As of 2015, Millennials made up more than one quarter of the U.S. population, totaling 83.1 million individuals, exceeding all other generations, with Baby Boomers closely following at 75.4 million individuals (Commerce.gov, 2015). With such a large population, Millennials have the potential for providing major influence and imparting a lasting impact on the direction and evolution of our society. As patients, Millennials will influence the future of healthcare in new ways, as their use of online resources and telehealth is innate in their daily operative practice and continues to grow. This group generally believes that healthcare costs are too high and that third-party health payers or insurers have too much power (Vogenberg and Santilli, 2018). With that being said, Millennials do not readily depend on primary care providers, seeking healthcare advice online or via urgent care. A survey completed by the Employment Benefit Research Institute revealed that only 65% of Millennials had primary care providers, in comparison to 74% of Generation X and 82% of baby boomers (Employee Benefit Research Institution, 2020). As the oldest Millennials are now entering their early 40s it will be interesting to see how this may shift, as they too will require greater healthcare services.

Generation Z (Gen Z)

Generation Z was born between 1997 and 2012 after the Millennial generation and before Generation Alpha. The oldest of this generation are reaching their late 20s in 2024. Many of them are out of college, getting married, and starting families. The youngest may be as young as 12. They're commonly referred to as "Gen Z" or "Gen Zers."Generation Z (Gen Z) refers to the generation of Americans born from 1997 to 2012.Gen Z is bracketed between Millennials (born from 1981 to 1996) and Generation Alpha.The oldest members of Gen Z are starting their post-education years with careers and possibly families.The youngest Gen Zers are just 12 years old in 2024.Older Gen Zers have firm plans for retirement but they haven't gone very far yet in starting their savings for it.

Gen Alpha – born 2013 – 2025.

Generation Alpha is the first generation to be born entirely within the 21st century. While definitions vary, the term "Generation Alpha" typically refers to the group of individuals born between 2013 and 2025. This is the generation after Gen Z. They're immersed in technology and described by diversity in key areas, including race and ethnicity, family structure and family finances. They're also the first generation to experience an early childhood defined by the coronavirus pandemic.

HOW DOES GENERATION ALPHA COMPARE TO GENERATION Z?

The data differences between Generation Alpha versus Generation Z -much like the groups' members themselves are still developing. However, if current trends hold, Generation Alpha will be more racially and ethnically diverse than Generation Z. Members of Generation Alpha will also be more likely to go to college, more likely to grow up in a single-parent household and more likely to be surrounded by college-educated adults.

While members of both age groups have grown up with technology at their fingertips, Gen Alpha kids have a key advantage. As Mc Crindle puts it: "They are the most materially endowed and technologically literate generation to ever grace the planet!"

CONCLUSIONS

Ultimately, the end goal of AI is to enhance human lives, improve efficiency, and address complex challenges across various fields, ranging from healthcare and education to business and environmental sustainability. Achieving this goal requires ongoing research, responsible development, and ethical deployment of AI technologies. Another crucial aspect is ensuring that AI systems align with human values, ethics, and societal norms. Striking a balance between innovation and ethical considerations is essential to prevent unintended consequences and ensure that AI technologies contribute positively to humanity.

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GREEN PURCHASE INTENTION VERSUS ACTUAL BUYING BEHAVIOR: EVIDENCE FROM SUSTAINABLE COMMERCE CONSUMERS IN GUJARAT, INDIA

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ABSTRACT

Sustainable and green commerce has gained significant attention due to increasing environmental concerns. However, a persistent gap exists between consumers' green purchase intentions and their actual buying behavior. This study investigates this intention–behavior gap among sustainable commerce consumers in Gujarat, India, by examining the moderating roles of perceived price premium and trust in green claims. Using a survey-based methodology, data were collected from 350 urban consumers across major cities in Gujarat. Structural Equation Modeling (SEM) was employed to test the hypothesized relationships. The findings reveal that while green purchase intention significantly influences actual buying behavior, perceived price premium weakens this relationship, whereas trust in green claims strengthens it. The study contributes to sustainable commerce literature by providing empirical evidence from an emerging economy and offers practical implications for marketers and policymakers aiming to promote sustainable consumption.

KEYWORDS: GREEN PURCHASE INTENTION, BUYING BEHAVIOR, SUSTAINABLE COMMERCE, GREEN MARKETING, GUJARAT, INDIA

1. INTRODUCTION

Environmental degradation, climate change, and resource depletion have intensified global interest in sustainable development and responsible consumption. In response, businesses increasingly adopt sustainable and green commerce practices, offering eco-friendly products and promoting environmental responsibility as part of their value proposition. Consequently, consumers today express stronger environmental concern and a willingness to support green products (Testa et al., 2020).

Despite this growing awareness, empirical evidence consistently highlights a discrepancy between consumers' expressed intentions and their actual purchasing behavior, commonly referred to as the **green intention–behavior gap** (Kollmuss & Agyeman, 2002). While consumers often report favorable attitudes toward green products, these attitudes do not always translate into real purchase decisions. This gap is particularly significant in emerging economies such as India, where economic constraints, price sensitivity, limited trust in green claims, and uneven access to sustainable products pose major challenges (Joshi & Rahman, 2015). Gujarat, one of India's most industrially advanced states, represents a unique context due to its rapid urbanization, rising middle class, and growing digital commerce penetration. However, empirical research examining sustainable consumer behavior at the regional level in Gujarat remains limited.

The present study addresses this gap by examining the relationship between green purchase intention and actual buying behavior among consumers in Gujarat. Furthermore, it investigates the moderating roles of perceived price premium and trust in green claims. By doing so, this study contributes region-specific empirical evidence to sustainable commerce literature and provides insights for designing effective green marketing and policy interventions.

2. REVIEW OF LITERATURE

2.1 Green Purchase Intention

Green purchase intention refers to an individual's willingness and planned effort to purchase environmentally friendly products (Ajzen, 1991). Prior research identifies environmental concern, moral norms, and perceived consumer effectiveness as key determinants of green purchase intention (Biswas & Roy, 2015). High levels of intention indicate positive attitudes toward sustainability but do not necessarily guarantee action.

2.2 Actual Green Buying Behavior

Actual green buying behavior represents consumers' real purchasing actions involving eco-friendly products. Studies consistently find that actual behavior lags behind intention, particularly in markets where green products are perceived as expensive or unreliable (Laroche et al., 2001).

2.3 Green Intention–Behavior Gap

The intention–behavior gap has been widely documented in environmental psychology and marketing literature. Kollmuss and Agyeman (2002) argue that situational constraints and economic considerations often prevent consumers from acting on their environmental intentions. In emerging economies, this gap is more pronounced due to financial constraints and market inefficiencies (Kumar et al., 2021).

2.4 Perceived Price Premium

Green products are often associated with higher prices due to sustainable sourcing and production processes. Perceived price premium has been identified as one of the strongest barriers to green purchasing, particularly among price-sensitive consumers (Peattie & Crane, 2005).

2.5 Trust in Green Claims

Trust in green claims reflects consumers' confidence in the authenticity of environmental information provided by firms. Increasing cases of greenwashing have heightened skepticism, reducing consumers' willingness to purchase green products (Delmas & Burbano, 2011). Trust has been shown to positively influence both intention and behavior (Chen & Chang, 2013).

3. RESEARCH OBJECTIVES

The objectives of the study are:

To examine the effect of green purchase intention on actual green buying behavior.

To analyze the moderating effect of perceived price premium on the intention–behavior relationship.

To examine the moderating effect of trust in green claims on the intention–behavior relationship.

To empirically validate the existence of the green intention–behavior gap in Gujarat, India.

4. HYPOTHESES

H1: Green purchase intention has a significant positive effect on actual green buying behavior.

H2: Perceived price premium negatively moderates the relationship between green purchase intention and actual buying behavior.

H3: Trust in green claims positively moderates the relationship between green purchase intention and actual buying behavior.

5. RESEARCH METHODOLOGY

5.1 Research Design

The study adopts a descriptive and causal research design using a survey method.

5.2 Sample and Data Collection

Data were collected from 350 consumers residing in major urban centres of Gujarat, including Ahmedabad, Surat, Vadodara, and Rajkot, using structured questionnaires administered online and offline.

5.3 Measurement Instrument

All constructs were measured using validated items adapted from prior studies on a five-point Likert scale.

5.4 Data Analysis Techniques

Data were analyzed using SPSS and SEM (AMOS/SmartPLS). Reliability, validity, correlation, and structural relationships were tested.

6. DATA ANALYSIS AND RESULTS

6.1 Reliability and Descriptive Statistics

All constructs demonstrated strong internal consistency (Cronbach's alpha > 0.80).

Variable	Mean	SD
Green Purchase Intention	4.01	0.63
Actual Buying Behavior	3.25	0.78
Perceived Price Premium	3.77	0.71
Trust in Green Claims	3.91	0.69

The higher mean for intention compared to behavior clearly indicates the existence of an intention–behavior gap.

6.2 Correlation Analysis

Green purchase intention is positively correlated with actual buying behavior ($r = .41$, $p < .01$), though the relationship is moderate. Perceived price premium shows a negative correlation with behavior, while trust exhibits a positive correlation.

6.3 Structural Equation Modeling (SEM)

SEM results indicate good model fit (CFI = .93, RMSEA = .04).

Path	B	p-value
GPI → ABB	0.38	<.001
GPI × PPP → ABB	−0.17	.01
GPI × TGC → ABB	0.22	.005

7. DISCUSSION

The findings confirm that green purchase intention significantly influences actual buying behavior; however, the moderate effect size highlights the persistence of the intention–behavior gap. The negative moderating role of perceived price premium indicates that economic considerations override environmental intentions. Conversely, trust in green claims enhances the likelihood that intentions translate into actual purchases. These findings are consistent with prior sustainability research and extend existing theories by contextualizing them within an emerging economy.

8. CONCLUSION

This study provides empirical evidence of the green intention–behavior gap among sustainable commerce consumers in Gujarat, India. While consumers exhibit strong intentions toward green purchasing, perceived price premium and trust significantly shape actual buying behavior. Addressing affordability and credibility concerns is essential for promoting sustainable consumption. The study contributes to sustainable commerce literature and offers practical guidance for businesses and policymakers.

9. IMPLICATIONS

Managerial Implications

Reduce price barriers through incentives and value communication
Enhance transparency and certification to build trust

Policy Implications

Subsidies and awareness programs for green products
Stronger regulation against greenwashing

10. LIMITATIONS AND FUTURE RESEARCH

The study relies on self-reported data and a cross-sectional design. Future research could employ longitudinal data, experimental designs, or actual purchase data, and extend the model with additional variables such as availability and perceived quality.

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GREEN JUSTICE IN THE DIGITAL AGE: JUDICIAL ACTIVISM AND ENVIRONMENTAL GOVERNANCE IN INDIA

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ABSTRACT

This research explores the dynamic convergence of environmental jurisprudence, judicial proactivity, and the ongoing digital transformation in India. Historically, the Indian judiciary has utilized Public Interest Litigations (PILs) to address systemic failures in environmental protection. Today, the "Digital Revolution" introduces a dual paradigm: it presents significant threats such as mounting e-waste and high energy consumption, while simultaneously offering sophisticated tools like Satellite Imagery, IoT sensors, and AI-driven analytics to revolutionize enforcement. This article analyzes how the judiciary is integrating these digital assets to bridge the gap between environmental policy and ground-level compliance. By evaluating the challenges of the digital divide and data privacy, the study advocates for a technologically empowered, "Green" judicial framework to secure a sustainable future for India.

KEYWORDS: ENVIRONMENTAL JURISPRUDENCE, JUDICIAL ACTIVISM, DIGITAL REVOLUTION, E-WASTE, REMOTE SENSING, PIL, NATIONAL GREEN TRIBUNAL.

1. INTRODUCTION: THE TRIAD OF CHANGE

India's environmental landscape is currently shaped by three powerful forces: an urgent ecological crisis, a traditionally activist judiciary, and a rapid digital transition. As urban sprawl and industrialization jeopardize air and water quality, the judiciary has stepped in as the "sentinel on the qui vive." However, the traditional methods of judicial oversight—relying on physical inspections and bureaucratic reports—are being replaced by digital monitoring. This intersection creates a new "Green Justice" model where data is as crucial as the law itself.

2. THE EVOLUTION OF ENVIRONMENTAL JUDICIAL ACTIVISM

The foundation of India's environmental law was not built solely in Parliament, but in the courtrooms. Following the Bhopal Gas Tragedy (1984), the judiciary expanded the scope of Article 21 (The Right to Life) to include the Right to a Wholesome Environment.

2.1 The Pillar of PIL and Specialized Tribunals

The judiciary transformed environmental governance through:

Public Interest Litigation (PIL): Relaxing the rule of locus standi to allow citizens to fight for nature.

The National Green Tribunal (NGT): Established in 2010 as a specialized body to handle environmental disputes with technical expertise.

Key Principles: The adoption of the "Polluter Pays" and "Precautionary" principles into the Indian legal fabric.

3. THE DIGITAL REVOLUTION: A DOUBLE-EDGED SWORD

The digital shift acts as both a pollutant and a protector. Understanding this duality is vital for modern environmental policy.

3.1 New Ecological Challenges

The rapid adoption of technology has birthed the E-waste Crisis. With electronic life cycles shortening, hazardous materials like lead and cadmium are leaching into soil and water. Furthermore, the massive energy demands of data centers and AI training contribute significantly to the carbon footprint.

3.2 Transformative Opportunities for Enforcement

Technology provides a "digital arsenal" for environmentalists and judges:

Remote Sensing & GIS: Used to detect illegal mining and monitor changes in forest cover.

Internet of Things (IoT): Deploying real-time sensors in rivers and industrial chimneys to monitor effluent and emission levels instantly.

Citizen Science: Mobile apps that allow individuals to geotag and report illegal waste dumping directly to regulatory portals.

4. FACILITATING ENVIRONMENTAL JUSTICE THROUGH DIGITAL TOOLS

The Indian judiciary is increasingly transitioning toward data-driven adjudication. By incorporating digital evidence, courts can bypass slow-moving executive reports.

Intervention Type	Environmental Issue	Digital Tool Leveraged	Impact/Outcome
NGT Directives	Illegal Sand Mining	Drones & Satellite Imagery	Real-time tracking of encroachment and heavy fines.
Industrial Oversight	Water/Air Pollution	Real-time IoT Sensors	Orders for immediate plant closure upon threshold breach.
Forest PILs	Deforestation	GIS Mapping	Verification of tree cover loss across large terrains.
Citizen Science	Urban Waste	Mobile Advocacy Apps	Judicial orders for improved municipal waste processing.

5. ETHICAL HURDLES AND IMPLEMENTATION GAPS

While the potential is vast, the "Green-Digital" convergence faces significant obstacles:

The Digital Divide: Vulnerable communities in rural India often lack the digital literacy or infrastructure to report environmental crimes, potentially excluding them from the "digital" justice system.

Data Integrity & Abuse: The risk of "Digital Tampering," such as deepfakes or doctored site photos, necessitates the development of robust digital forensic standards within the courts.

Privacy vs. Monitoring: The use of surveillance drones and pervasive sensors raises questions about the balance between ecological monitoring and the right to privacy.

Judicial Overreach: The use of real-time data allows the judiciary to intervene more aggressively in executive functions, fueling the debate over the separation of powers.

6. CONCLUSION: TOWARD A SUSTAINABLE SYNTHESIS

The convergence of judicial activism and the digital revolution represents a landmark shift in India's environmental jurisprudence. By adopting technology, the judiciary is not merely interpreting the law but actively enforcing it through a "digital eye." However, for this model to be equitable, India must bridge the digital divide and ensure that technology empowers rather than marginalizes the grassroots environmentalist. The future of India's environment lies in this synthesis—where judicial courage is

backed by undeniable digital evidence, ensuring that the "Right to Life" remains a reality in the 21st century.

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DEMOCRACY AND GOVERNANCE IN CONTEMPORARY POLITICAL SYSTEMS: CHALLENGES AND PROSPECTS

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ABSTRACT

Democracy has emerged as the most widely accepted form of political organization in the modern world. It is often associated with values such as liberty, equality, participation, accountability, and rule of law. However, despite its normative appeal, democracy in practice faces numerous challenges, particularly in the context of globalization, technological change, economic inequality, identity politics, and declining public trust in political institutions. Governance, as the process through which authority is exercised and public resources are managed, plays a crucial role in determining the effectiveness and sustainability of democratic systems. This paper examines the conceptual relationship between democracy and governance, explores major challenges confronting democratic governance in contemporary political systems, and analyzes the prospects for strengthening democratic institutions. The study adopts a descriptive and analytical approach based on secondary sources. It argues that while democracy is under strain globally, institutional reforms, inclusive governance, transparency, and citizen participation can revitalize democratic practices and enhance governance outcomes.

KEYWORDS: DEMOCRACY, GOVERNANCE, POLITICAL INSTITUTIONS, PARTICIPATION, ACCOUNTABILITY, RULE OF LAW

INTRODUCTION

Democracy is widely regarded as the most legitimate form of government in the modern political imagination. From ancient city-states to contemporary nation-states, the idea that political power should rest with the people has shaped political thought and practice across civilizations. In the twentieth century, especially after the end of colonialism and the Cold War, democracy gained global prominence as an ideal political system. Many countries adopted democratic constitutions, held regular elections, and established representative institutions.

However, the mere existence of democratic structures does not guarantee effective governance. In many democratic states, citizens experience poor service delivery, corruption, policy paralysis, and declining trust in political leaders. This has led scholars to emphasize governance as a critical dimension of democracy. Governance refers not only to government but also to the processes, institutions, and actors through which collective decisions are made and implemented.

The relationship between democracy and governance is complex and dynamic. Democracy provides legitimacy and participation, while governance determines efficiency, accountability, and policy effectiveness. In recent years, democratic governance has faced serious challenges such as populism, authoritarian tendencies, economic inequality, social fragmentation, and the disruptive impact of digital technologies. Against this background, it becomes essential to examine how democracy functions in practice and how governance mechanisms can be strengthened.

This paper seeks to analyze democracy and governance in contemporary political systems by addressing three core questions:

What is the conceptual relationship between democracy and governance?

What are the major challenges facing democratic governance today?
What are the prospects and strategies for improving democratic governance?

CONCEPTUAL FRAMEWORK: DEMOCRACY AND GOVERNANCE

Meaning and Forms of Democracy

Democracy, derived from the Greek words *demos* (people) and *kratos* (rule), literally means rule by the people. In modern political science, democracy is understood as a system in which citizens exercise political power either directly or through elected representatives. Core features of democracy include free and fair elections, political equality, civil liberties, rule of law, and accountability of rulers.
Democracy can be broadly classified into several forms:
Direct Democracy: Citizens directly participate in decision-making, as seen in referendums and local assemblies.
Representative Democracy: Citizens elect representatives who make decisions on their behalf.
Liberal Democracy: Emphasizes constitutionalism, individual rights, and separation of powers.
Participatory Democracy: Focuses on active citizen engagement beyond elections.
Deliberative Democracy: Stresses reasoned discussion and public deliberation in decision-making.
While most contemporary states follow representative democracy, elements of participatory and deliberative democracy are increasingly emphasized to enhance democratic quality.

CONCEPT OF GOVERNANCE

Governance refers to the processes and mechanisms through which authority is exercised in a society. It involves the interaction of state institutions, private actors, civil society, and international organizations in the formulation and implementation of public policies. Governance goes beyond government and includes informal norms, networks, and practices.
Key dimensions of good governance include:
Accountability
Transparency
Rule of law
Effectiveness and efficiency
Responsiveness
Inclusiveness
Participation
Good governance ensures that democratic principles are translated into effective public action. Poor governance, on the other hand, can undermine democratic legitimacy and fuel public discontent.

RELATIONSHIP BETWEEN DEMOCRACY AND GOVERNANCE

Democracy and governance are mutually reinforcing. Democracy provides legitimacy and participation, while governance ensures performance and accountability. A democratic system without good governance may result in instability and inefficiency, whereas governance without democracy may lead to authoritarian control. Therefore, sustainable political development requires the integration of democratic values with effective governance mechanisms.

METHODOLOGY

This study adopts a qualitative and descriptive methodology based on secondary sources such as books, academic journals, reports of international organizations, and policy documents. The analysis is interpretative in nature and aims to synthesize existing literature to understand contemporary trends in democratic governance. No primary data collection has been undertaken.

CHALLENGES TO DEMOCRATIC GOVERNANCE

Crisis of Political Participation

One of the major challenges facing democracy today is declining political participation. Voter turnout in many democracies has decreased, especially among youth and marginalized groups. Political apathy, distrust in political parties, and the perception that individual votes do not matter contribute to this trend.

Low participation weakens democratic legitimacy and creates a gap between citizens and decision-makers. When people disengage from formal politics, governance becomes less representative and more vulnerable to elite capture.

Populism and Authoritarian Tendencies

The rise of populist movements has posed serious challenges to democratic governance. Populist leaders often claim to represent the "true will of the people" while undermining democratic institutions, independent media, and judicial autonomy. Such tendencies weaken checks and balances and concentrate power in the executive.

In several countries, democratic backsliding has occurred through the erosion of constitutional norms, restriction of civil liberties, and manipulation of electoral processes. This phenomenon highlights the fragility of democratic governance.

Economic Inequality

Economic inequality has a profound impact on democracy and governance. When wealth and resources are concentrated in the hands of a few, political influence also becomes unequal. Powerful economic actors may shape policies in their favor, leading to policy bias and social injustice.

Inequality reduces trust in democratic institutions and fuels resentment among disadvantaged groups. Effective democratic governance requires inclusive economic policies that ensure equitable development and social protection.

Corruption and Lack of Accountability

Corruption remains a persistent problem in many democratic systems. It undermines governance by distorting public policy, misusing public resources, and eroding public trust. Weak accountability mechanisms allow corrupt practices to flourish.

Even in established democracies, issues such as lobbying influence, opaque decision-making, and revolving doors between politics and business raise concerns about democratic accountability.

Impact of Technology and Media

Digital technology and social media have transformed political communication and participation. While they offer new opportunities for engagement, they also create challenges such as misinformation, polarization, and manipulation of public opinion.

The spread of fake news and algorithm-driven content can distort democratic discourse and undermine informed decision-making. Governance systems often struggle to regulate digital platforms without infringing on freedom of expression.

Democratic Governance in Developing Countries

In many developing countries, democratic governance faces additional challenges such as weak institutions, poverty, illiteracy, and social fragmentation. Although elections are held regularly, governance outcomes often remain poor due to lack of administrative capacity and political will.

Clientelism, patronage politics, and identity-based mobilization weaken democratic accountability. However, democratic governance in developing societies also shows resilience through grassroots movements, civil society activism, and local governance innovations.

Strengthening institutions, decentralization, and capacity-building are essential for improving governance in these contexts.

PROSPECTS FOR STRENGTHENING DEMOCRATIC GOVERNANCE

Institutional Reforms

Strong and independent institutions are the backbone of democratic governance. Reforms aimed at enhancing judicial independence, electoral integrity, and legislative oversight can improve accountability and transparency.

Clear separation of powers and effective checks and balances prevent the concentration of power and protect democratic norms.

Enhancing Citizen Participation

Democracy must go beyond periodic elections. Mechanisms such as public consultations, participatory budgeting, and local self-governance can deepen citizen involvement in decision-making.

Civic education plays a crucial role in empowering citizens to engage meaningfully with democratic processes and hold leaders accountable.

Promoting Transparency and Accountability

Access to information, open data initiatives, and strong anti-corruption frameworks enhance governance quality. Independent media and civil society organizations act as watchdogs and promote democratic accountability.

Technology can be leveraged to improve service delivery, reduce corruption, and increase government responsiveness.

Inclusive and Equitable Governance

Democratic governance must address social and economic inequalities. Policies aimed at inclusive growth, social justice, and protection of minority rights strengthen democratic legitimacy.

Gender equality, minority representation, and social inclusion are essential components of a healthy democracy.

CONCLUSION

Democracy and governance are inseparable dimensions of modern political systems. While democracy provides the normative foundation of political legitimacy, governance determines how effectively democratic values are translated into public outcomes. Contemporary democracies face significant challenges ranging from declining participation and populism to inequality and technological disruption. Despite these challenges, democracy remains a resilient and adaptable system. By strengthening institutions, promoting participation, ensuring accountability, and embracing inclusive governance, democratic systems can respond effectively to changing social and political realities. The future of democracy depends not only on electoral processes but also on the quality of governance that shapes the everyday lives of citizens.

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DIGITAL INEQUALITY AND SOCIAL STRATIFICATION IN CONTEMPORARY INDIAN SOCIETY: A SOCIOLOGICAL ANALYSIS

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ABSTRACT

The rapid expansion of digital technologies has significantly transformed social, economic, and cultural life in India. While digitalization has enhanced access to information, education, governance, and economic opportunities, it has simultaneously reproduced and intensified existing social inequalities. This study examines digital inequality as a contemporary form of social stratification in Indian society. Using a quantitative survey-based research design, data were collected from 420 respondents across urban and rural regions. The study investigates disparities in digital access, digital skills, and meaningful usage across socio-economic variables such as income, education, caste, gender, and place of residence. Statistical analyses including descriptive statistics, chi-square tests, independent sample t-tests, correlation analysis, and multiple regression were employed. The findings reveal that digital inequality is strongly associated with socio-economic status and reinforces structural inequalities. The study contributes to sociological discourse by demonstrating how digital exclusion functions as a new axis of stratification and argues for inclusive digital policies. The paper concludes with policy implications and directions for future research.

KEYWORDS: DIGITAL INEQUALITY, SOCIAL STRATIFICATION, DIGITAL DIVIDE, SOCIOLOGY, INDIA, TECHNOLOGY AND SOCIETY

1. INTRODUCTION

Digital technology has become an integral part of modern social life, influencing communication, education, employment, governance, and social interaction. In India, large-scale digital initiatives such as e-governance, online education platforms, and digital financial services have accelerated technological integration into everyday life. However, access to and effective use of digital technologies remain unevenly distributed across social groups. From a sociological perspective, inequality in digital access is not merely a technological issue but a social phenomenon embedded within broader structures of stratification. Classical sociologists such as Marx, Weber, and Durkheim emphasized how resources and power are unequally distributed within societies. In contemporary contexts, digital resources have emerged as a new form of capital that intersects with economic, social, and cultural capital. The concept of the digital divide has evolved from a simple binary of access versus non-access to a more complex understanding involving quality of access, digital skills, and outcomes of technology use. This study situates digital inequality within the framework of social stratification and examines how digital resources are distributed across different social groups in India.

2. LITERATURE REVIEW

2.1 Digital Divide and Social Inequality

Early studies conceptualized the digital divide as unequal access to computers and the internet. Subsequent research expanded the concept to include disparities in digital literacy, skills, and usage patterns. Scholars argue that digital inequality mirrors existing socio-economic inequalities, particularly in developing societies.

2.2 Digital Capital and Stratification

Recent sociological literature introduces the idea of digital capital, referring to the skills, competencies, and dispositions required to effectively use digital technologies. Individuals with higher educational and economic capital are better positioned to accumulate digital capital, leading to cumulative advantages.

2.3 Gender, Caste, and Digital Exclusion

Empirical studies in India highlight significant gender gaps in digital access, with women facing structural barriers such as lower education levels, social norms, and restricted mobility. Caste-based disparities also persist, with marginalized communities having limited access to digital infrastructure and training.

2.4 Rural–Urban Divide

The rural–urban divide remains a critical dimension of digital inequality. Urban areas benefit from better connectivity, infrastructure, and institutional support, while rural regions lag behind, reinforcing spatial inequalities.

2.5 Research Gap

While existing studies acknowledge digital inequality in India, there is limited empirical research that systematically examines digital inequality as a mechanism of social stratification using quantitative sociological methods. This study addresses this gap by integrating stratification theory with empirical data analysis.

3. RESEARCH QUESTIONS AND HYPOTHESES

Research Questions

How is digital access distributed across different socio-economic groups in India?
What is the relationship between socio-economic status and digital skills?
Does digital inequality contribute to social stratification?

Hypotheses

H1: There is a significant association between income level and digital access.
H2: Educational attainment positively influences digital skills.
H3: Urban respondents exhibit higher levels of digital usage than rural respondents.
H4: Digital skills significantly predict socio-economic outcomes.

4. RESEARCH METHODOLOGY

4.1 Research Design

The study adopts a **quantitative, cross-sectional survey design**, appropriate for examining patterns of inequality across a large population.

4.2 Sample and Sampling Technique

A sample of **420 respondents** was selected using **stratified random sampling** to ensure representation across gender, caste, income groups, and rural–urban locations.

4.3 Data Collection

Primary data were collected using a structured questionnaire consisting of:
Socio-demographic variables
Digital access indicators
Digital skill measures
Usage and outcome variables
Responses were measured using nominal scales and five-point Likert scales.

4.4 Variables

Independent Variables: Income, education, gender, caste, residence
Dependent Variables: Digital access, digital skills, digital usage
Control Variables: Age and occupation

4.5 Data Analysis Tools

Data were analyzed using statistical software. The following tests were applied:
Descriptive statistics
Chi-square test
Independent sample t-test
Pearson correlation
Multiple regression analysis

5. DATA ANALYSIS AND RESULTS

5.1 Descriptive Statistics

The sample consisted of 54% males and 46% females. Approximately 58% respondents were urban residents, while 42% were from rural areas. Nearly 60% reported regular internet access.

5.2 Chi-Square Test: Income and Digital Access

The chi-square test revealed a **significant association** between income level and digital access (χ^2 = 28.47, $p < 0.01$), supporting **H1**.

5.3 Independent Sample T-Test: Rural–Urban Differences

Urban respondents reported significantly higher digital usage scores (M = 4.02) than rural respondents (M = 3.11), $t(418) = 6.34$, $p < 0.001$, supporting **H3**.

5.4 Correlation Analysis

Education was positively correlated with digital skills ($r = 0.61$, $p < 0.01$), supporting **H2**.

5.5 Multiple Regression Analysis

Multiple regression analysis showed that education ($\beta = 0.42$) and income ($\beta = 0.31$) significantly predicted digital skills, accounting for 48% of variance ($R^2 = 0.48$). Digital skills also significantly predicted socio-economic outcomes, supporting **H4**.

6. DISCUSSION

The findings demonstrate that digital inequality is deeply embedded within existing structures of social stratification. Higher-income and better-educated individuals possess greater digital capital, enabling them to leverage digital resources for economic and social advancement. Rural residents and marginalized groups remain digitally disadvantaged, reinforcing traditional inequalities. The results align with stratification theory, suggesting that digital resources function as a new stratifying mechanism. The study extends sociological understanding by empirically validating digital inequality as a form of structural inequality rather than a temporary technological gap.

7. IMPLICATIONS OF THE STUDY

7.1 Theoretical Implications

The study contributes to sociological theory by integrating digital inequality into the broader framework of social stratification.

7.2 Policy Implications

Policymakers must move beyond infrastructure development and focus on digital literacy, affordability, and inclusive design to reduce inequality.

7.3 Practical Implications

Educational institutions and social organizations can play a crucial role in bridging digital skill gaps through targeted interventions.

8. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The study is limited by its cross-sectional design and reliance on self-reported data. Future research may adopt longitudinal designs, qualitative approaches, or comparative studies across regions to deepen understanding.

9. CONCLUSION

This study establishes that digital inequality in India is not merely a technological issue but a sociological phenomenon deeply intertwined with social stratification. By empirically demonstrating the relationship between socio-economic status and digital resources, the research underscores the need for inclusive digital policies. The findings contribute to academic discourse by highlighting digital inequality as a critical dimension of contemporary social inequality.

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URBANIZATION, SOCIAL CHANGE, AND POLITICAL CULTURE IN MEDIEVAL SOUTH ASIA: A HISTORICAL ANALYSIS OF CITIES AS CENTERS OF POWER AND EXCHANGE

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ABSTRACT

Urban centers in medieval South Asia played a pivotal role in shaping political authority, economic exchange, and social transformation. Far from being merely administrative hubs, cities functioned as dynamic spaces of interaction where trade networks, intellectual traditions, and cultural identities intersected. This study examines the historical evolution of medieval South Asian cities as instruments of state formation, arenas of social mobility, and nodes of regional and transregional exchange. Drawing upon historical narratives, archival records, travelers' accounts, and secondary historiographical interpretations, the study highlights how urban environments facilitated economic specialization, intellectual circulation, and cultural synthesis while simultaneously reinforcing hierarchies of power and social stratification.

The analysis reveals that medieval cities were not static entities but evolving environments shaped by political transitions, economic cycles, and demographic shifts. The emergence of fortified capitals, commercial port towns, and pilgrimage centers demonstrates varied urban functions, each contributing to the broader political and cultural fabric of the region. The study emphasizes that urbanization fostered new forms of political legitimacy, commercial entrepreneurship, craft specialization, and cross-cultural contact. At the same time, urban life was conditioned by unequal access to resources, guild hierarchies, and power imbalances embedded within administrative and social institutions.

By situating cities within broader processes of statecraft, trade, and culture, this research contributes to historical scholarship on medieval South Asia and underscores the need to approach urban history as a field that integrates economic, political, and socio-cultural dimensions of past societies.

KEYWORDS: MEDIEVAL HISTORY; SOUTH ASIAN CITIES; URBANIZATION; POLITICAL CULTURE; TRADE NETWORKS; SOCIAL STRATIFICATION; HISTORICAL TRANSFORMATION

1. INTRODUCTION

Urban centers have long served as engines of historical change, symbolizing both material prosperity and political authority. In medieval South Asia, cities represented spaces where administrative power, commercial enterprise, religious expression, and intellectual activity converged. They functioned as arenas where rulers consolidated authority, merchants expanded economic networks, scholars disseminated ideas, and communities negotiated identity and belonging.

Historical scholarship frequently portrays medieval cities as reflections of state formation and imperial expansion. Yet cities were also active agents in shaping historical developments rather than merely responding to political dynamics. Their growth, decline, and transformation reveal the complex relationship between urban institutions, economic structures, and social experiences.

This research paper analyzes medieval South Asian cities as historical phenomena embedded within social and political contexts. It investigates how urban development influenced governance, economic

exchange, and cultural interaction, and how urban spaces mediated relationships between ruling elites and diverse social groups.

2. LITERATURE REVIEW

2.1 Urbanization and State Formation

Historians describe medieval urbanization in South Asia as closely linked to the consolidation of political authority. Courtly capitals emerged as centers of administration where taxation, military coordination, and diplomatic relations were organized. Fortified urban complexes symbolized sovereignty, demonstrating the ruler's capacity to command labor, resources, and architectural display. Political elites used urban landscapes to project legitimacy through palaces, forts, ceremonial avenues, and monumental architecture.

2.2 Economic Networks and Commercial Exchange

Urban growth was sustained by complex commercial systems connecting inland markets, port towns, and transregional trade routes. Merchant guilds, artisan groups, and craft specialists contributed to economic diversification. Cities served as marketplaces for textiles, metals, spices, and agricultural commodities, linking regional production centers to wider economic circuits. Long-distance trade fostered interaction between cultural communities, merchants, and travelers, creating cosmopolitan urban environments.

2.3 Social Structure and Urban Communities

Medieval cities were stratified spaces characterized by occupational specialization, social hierarchy, and spatial segregation. Residential quarters often reflected guild organization, administrative rank, religious identity, or caste affiliation. While urban environments provided opportunities for social mobility through trade and artisan entrepreneurship, they also reinforced inequality through corporate guild structures and political patronage networks.

2.4 Cultural Interaction and Intellectual Life

Cities functioned as intellectual and cultural crossroads where religious scholars, poets, philosophers, and artists exchanged ideas. Courtly patronage sustained literary production and architectural innovation, while pilgrimage centers facilitated spiritual exchange and ritual life. Urban interaction contributed to processes of cultural synthesis, shaping language, artistic forms, and religious practices.

3. RESEARCH QUESTION AND OBJECTIVES

3.1 Research Question

How did medieval South Asian cities function as centers of political authority, economic exchange, and social transformation, and what roles did they play in shaping broader historical processes?

3.2 Objectives

To analyze the political functions of medieval urban centers in relation to governance and state formation.

To examine economic structures and trade networks that sustained urban development.

To explore social organization, occupational structures, and cultural interactions within urban environments.

To assess how urbanization contributed to historical change in medieval South Asia.

4. METHODOLOGY

The study adopts a historical-analytical research approach grounded in thematic interpretation of primary and secondary sources. Primary materials include travelers' narratives, court chronicles, inscriptions, and administrative records where available. Secondary sources consist of historiographical analyses, archaeological interpretations, and thematic scholarship in urban and social

history. The study synthesizes qualitative evidence to interpret patterns of urban development and their broader historical significance.

5. FINDINGS

5.1 Cities as Political Centers

Urban capitals served as loci of administrative coordination and elite sociopolitical culture. Royal courts, military headquarters, and bureaucratic institutions were concentrated within city spaces, reinforcing centralized authority. Ceremonial rituals, public assemblies, and diplomatic encounters embedded political power within urban spatial arrangements. Urban architecture symbolized sovereignty while binding subjects to the political order through spectacle and institutional presence.

5.2 Commercial Activity and Economic Organization

Cities fostered economic specialization by concentrating merchant communities, artisan workshops, and financial networks. Guild structures regulated production standards, pricing, and apprenticeship systems. Port cities integrated inland production zones with maritime trade circuits, enabling exchange across cultural and geographic regions. Urban markets functioned as intermediaries between agrarian hinterlands and global trade routes, amplifying economic interdependence.

5.3 Social Stratification and Community Interaction

Urban society exhibited layered hierarchies shaped by occupation, wealth, gender norms, religious affiliation, and status distinctions. Elite households occupied prominent spatial locations, while working populations resided in occupational quarters. Nevertheless, urban environments allowed interpersonal contact across boundaries through marketplace interaction, artisanal collaboration, and shared civic spaces. This interaction fostered negotiation of identity and social belonging.

5.4 Cultural and Intellectual Exchange

Urban centers nurtured cultural communication through scholarly academies, literary gatherings, religious institutions, and artistic patronage. Poets, theologians, physicians, and scholars circulated between cities, spreading intellectual traditions. Courtly and religious patronage encouraged cross-cultural artistic and linguistic exchange, reinforcing cities as spaces of creativity as well as governance and commerce.

6. DISCUSSION

The findings demonstrate that medieval South Asian cities were complex environments where political power, economic organization, and social life intersected. Urbanization facilitated administrative centralization and economic specialization while simultaneously reshaping social relations and cultural identities. Cities also served as mediating spaces between ruling elites and diverse urban communities, structuring both cooperation and inequality.

Urban history in medieval South Asia therefore cannot be understood solely in administrative or economic terms. Instead, it represents an integrated historical process involving governance, production systems, intellectual life, and everyday social experience.

7. IMPLICATIONS FOR HISTORICAL SCHOLARSHIP

Urban history provides critical insights into state formation, economic transformation, and social negotiation.

Cities functioned as active historical agents rather than passive reflections of political regimes.
Interdisciplinary approaches linking archaeology, economic history, and cultural analysis deepen understanding of urban experience.

Reassessing urbanization contributes to broader reinterpretations of medieval South Asian historical development.

8. CONCLUSION

Medieval South Asian cities constituted dynamic centers of power, exchange, and social transformation. They facilitated political administration, sustained commercial networks, shaped social hierarchies, and fostered intellectual and cultural interaction. By examining cities as complex historical spaces, this study highlights their essential role in the formation of political cultures, economic systems, and social identities in the medieval period. Understanding urbanization thus contributes significantly to historical interpretations of continuity, change, and transformation within South Asian history.

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INTELLECTUAL PROPERTY RIGHTS AND INNOVATION IN INDIA: BALANCING MONOPOLY AND PUBLIC INTEREST (PATENT LAW PERSPECTIVE)

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ABSTRACT

Patent law in India embodies a delicate equilibrium between promoting innovation and safeguarding public interest. Designed to reward inventors for their creativity while ensuring accessibility to essential goods, particularly life-saving medicines, the Indian patent regime has evolved through dynamic legislative and judicial interventions. The **Patents Act, 1970**, as amended in compliance with the **TRIPS Agreement (1995)**, reflects India's effort to balance monopolistic patent rights with socio-economic realities of a developing nation. This paper explores the philosophical foundations, legislative evolution, and judicial interpretations that shape India's patent jurisprudence. It examines landmark cases such as Novartis AG v. Union of India (2013) and Bayer Corporation v. Union of India (2014), analyzing how Indian courts have upheld the primacy of public health and technological accessibility. The study concludes that India's patent system successfully integrates innovation incentives with constitutional commitments to social welfare, representing a model for equitable intellectual property governance.

KEYWORDS: PATENT LAW, INTELLECTUAL PROPERTY RIGHTS, INNOVATION, TRIPS, COMPULSORY LICENSING, PUBLIC HEALTH, INDIAN JUDICIARY

INTRODUCTION

Intellectual Property Rights (IPR) are a cornerstone of the global knowledge economy. By granting inventors exclusive rights to exploit their creations for a limited period, patents encourage innovation and technological advancement. However, in developing countries like India, the enforcement of patent monopolies can conflict with public interest goals—especially in sectors like healthcare, agriculture, and energy.

India's patent regime reflects an ongoing struggle to reconcile two competing objectives:
Encouraging innovation by granting inventors temporary monopoly rights.
Ensuring public access to essential goods and technologies at affordable prices.
The **Patents Act, 1970**, and subsequent amendments (notably in 1999, 2002, and 2005) embody this balance. While aligning India with international norms under the TRIPS Agreement, the legislature and judiciary have retained strong public-interest safeguards, such as **Section 3(d)** (anti-evergreening) and **compulsory licensing** provisions under **Sections 84–92**.

This paper examines the evolution and functioning of India's patent law framework through a critical lens—analyzing its role in fostering innovation while maintaining social justice.

HISTORICAL BACKGROUND OF PATENT LAW IN INDIA

The evolution of patent law in India can be divided into three key phases:

1. Colonial Era (1856–1947)

The first patent legislation in India was enacted in **1856**, modelled on the British Patent Law of 1852. It primarily served British economic interests and offered little to indigenous innovation. The **Indian Patents and Designs Act, 1911** consolidated previous laws but perpetuated a system favoring foreign patentees.

2. Post-Independence and the Patents Act, 1970

Post-independence, India's policymakers, guided by the **Justice N. Rajagopala Ayyangar Committee Report (1959)**, recognized the exploitative nature of the colonial patent regime. The Committee emphasized that India, as a developing country, needed patent laws that stimulated domestic innovation without creating monopolies detrimental to public welfare.

Consequently, the **Patents Act, 1970** replaced product patents in pharmaceuticals and food with process patents. This reform catalyzed the growth of India's generic drug industry, making life-saving medicines globally affordable.

3. TRIPS and the Post-1995 Reforms

India's accession to the **WTO's TRIPS Agreement (1995)** mandated product patent protection in all technological fields. To comply, India amended its patent law in three phases (1999, 2002, 2005), reintroducing **product patents** but embedding **strong safeguards**—notably:

Section 3(d): Prevention of "evergreening."

Compulsory licensing (Sections 84–92).

Parallel importation (Section 107A).

These provisions preserve flexibility and reflect the public-interest orientation of India's patent philosophy.

PHILOSOPHICAL AND CONSTITUTIONAL FOUNDATIONS

The Constitution of India provides an overarching framework that shapes patent law and innovation policy. The **Directive Principles of State Policy (DPSPs)**—particularly **Articles 38, 39(b), and 47**—mandate equitable distribution of resources and protection of public health.

Patent law in India, therefore, is not merely an instrument of economic regulation but a tool for achieving constitutional justice. The judiciary has consistently emphasized that intellectual property rights, while private, must operate within the broader framework of **public welfare** and **social justice**. In Novartis AG v. Union of India (2013), the Supreme Court reiterated this constitutional philosophy, holding that patents cannot be granted for trivial innovations that hinder access to affordable medicine. This synthesis of law and morality underscores India's distinctive approach to intellectual property—**a rights system constrained by responsibility**.

LITERATURE REVIEW

Scholarly discourse on India's patent regime reveals divergent perspectives:

Chaudhuri (2005) argues that India's post-1970 patent model demonstrates how developing nations can foster local industries without violating innovation incentives.

Correa (2007) highlights India's leadership in utilizing TRIPS flexibilities to promote access to medicines.

Gopakumar (2014) critiques the increasing global pressure to dilute Section 3(d), warning that doing so would undermine health equity.

Raju (2018) identifies judicial interpretation as a decisive factor in maintaining the innovation-public interest balance.

The literature consistently positions India's patent law as a **hybrid model**, blending international compliance with national developmental priorities.

RESEARCH METHODOLOGY

This paper follows a **doctrinal and analytical research methodology**, relying on:

Primary Sources: The Patents Act, 1970 (as amended), WTO TRIPS Agreement, and Indian Supreme Court and High Court decisions.

Secondary Sources: Scholarly articles, government reports, and commentaries on patent law and innovation policy.

The analysis is qualitative, emphasizing how statutory design and judicial reasoning harmonize monopoly incentives with equitable access.

CORE PRINCIPLES OF INDIAN PATENT LAW

1. Patentability Criteria

Under **Sections 2(1)(j)** and **2(1)(ja)**, an invention must be:

Novel,

Involve an inventive step, and

Be capable of industrial application.

However, India's **Section 3(d)** provides a unique safeguard against "evergreening" — the practice of obtaining multiple patents on minor modifications of known drugs. This ensures that only genuine innovations, not incremental changes, receive protection.

2. Term and Scope of Patent Rights

A patent in India confers exclusive rights for **20 years** from the filing date, as per **Section 53**. This right is not absolute—subject to compulsory licensing, government use, and parallel import exceptions.

3. Compulsory Licensing

Under **Sections 84–92**, the government can authorize third parties to produce patented inventions without consent if:

The invention is not reasonably available to the public;

The patented product is not affordable; or

The patent is not worked in India.

This mechanism ensures that monopoly rights do not obstruct public welfare.

4. Government Use and Research Exceptions

Section 100 allows government use of patents for public purposes, while **Section 107A** permits research and experimentation without infringement liability.

JUDICIAL INTERPRETATION AND LANDMARK CASES

Judicial interpretation has been central to shaping the contours of Indian patent jurisprudence.

1. Novartis AG v. Union of India (2013)

The Supreme Court denied a patent for the cancer drug Glivec on the grounds that it failed the **Section 3(d)** threshold. The Court held that incremental modifications without enhanced therapeutic efficacy do not qualify as inventions.

Significance:

Reinforced India's anti-evergreening stance.

Affirmed access to affordable medicines as a constitutional value under Article 21.

Global recognition for India as a defender of health equity.

2. Bayer Corporation v. Union of India (2014)

India's first compulsory license was granted to Natco Pharma for Bayer's patented drug Nexavar (used for kidney cancer). The Controller General ruled that the drug was excessively priced and not manufactured in sufficient quantity.

Significance:

Operationalized TRIPS-compliant flexibilities.
Prioritized public access over patent monopoly.
Established that "working of patents" requires local manufacturing, not mere importation.

3. F. Hoffmann-La Roche Ltd. v. Cipla Ltd. (2009)

The Delhi High Court balanced patent enforcement with access to medicine, allowing generic versions based on public interest considerations.

4. Monsanto Technology LLC v. Nuziveedu Seeds Ltd. (2019)

The Delhi High Court interpreted patentability of genetically modified seeds, emphasizing India's sovereign right to regulate patents in agriculture in light of public welfare.

Interface between Patent Law and Public Health

India's patent policy is anchored in the **Doha Declaration on TRIPS and Public Health (2001)**, which recognizes the right of WTO members to protect public health and promote access to medicines.

Key Instruments of Balance:

Section 3(d): Prevents frivolous patents.
Compulsory Licensing: Ensures affordability.
Price Control: Implemented through the National Pharmaceutical Pricing Authority (NPPA).
Parallel Imports: Facilitates competition and accessibility.
These mechanisms collectively safeguard public health without discouraging innovation.

Patent Law and Innovation Ecosystem

Contrary to the argument that strict patent standards stifle innovation, India's pharmaceutical sector demonstrates the opposite. The generic industry, fostered under the 1970 regime, became a global leader in affordable medicines and reverse engineering.

Recent policy initiatives—such as the **National IPR Policy (2016)** and **Startup India Action Plan**—seek to promote innovation while preserving equitable access. However, challenges persist:

R&D investment remains low relative to developed nations.
Technology transfer between academia and industry is limited.
Patent examination delays and backlogs hinder efficiency.

The need of the hour is a **balanced innovation ecosystem**—combining robust patent protection with transparent licensing and public-sector research.

JUDICIAL PHILOSOPHY: INNOVATION AND SOCIAL JUSTICE

Indian courts view patents through the prism of **constitutional morality** and **social justice**. The judiciary consistently affirms that innovation must serve humanity, not profit alone.

In Bayer Corporation v. Union of India, the Intellectual Property Appellate Board observed that the right to life under Article 21 outweighs patent monopolies when essential medicines are unaffordable. Similarly, in Novartis, the Supreme Court clarified that the Patents Act aims to "balance patent rights with public good."

This jurisprudence reflects a **transformative constitutional approach**—ensuring that intellectual property law furthers the Preamble's promise of justice and equality.

CHALLENGES AND CRITICISMS

Compliance Pressure: India faces diplomatic and trade pressures to dilute TRIPS flexibilities, especially from multinational corporations.
R&D Deficiency: Domestic industries rely more on imitation than innovation due to limited investment.

Judicial Overreach Concerns: Excessive interpretation of "public interest" may deter investors.
Pharma Patent Litigation Backlog: Delays in dispute resolution affect certainty and enforcement.
Biotechnology and Software Ambiguities: Patent eligibility in emerging sectors remains legally uncertain.
Addressing these challenges requires institutional coherence and political will to preserve India's innovation–welfare balance.

ANALYSIS AND DISCUSSION

India's patent regime represents a **unique hybrid**—neither purely pro-monopoly nor purely socialist. It aligns with international obligations under TRIPS while embedding **flexibilities** suited to national development priorities.

Key Observations:

TRIPS Compliance with Safeguards: India's model upholds both innovation and equity.
Judicial Creativity: Courts actively shape policy through purposive interpretation.
Social Orientation: The Constitution influences patent adjudication, linking law with human rights.
Sustainability: Patent protection coexists with access, forming a sustainable innovation ecosystem.
This balance demonstrates India's leadership in crafting an **inclusive intellectual property model**, capable of reconciling private incentives with collective welfare.

FINDINGS

India's patent law prioritizes **innovation aligned with public welfare**.
The **Section 3(d)** safeguard and **compulsory licensing** provisions exemplify TRIPS flexibilities in action.
The judiciary has played a pivotal role in interpreting patents through a **constitutional rights framework**.
Despite global pressure, India has maintained **policy sovereignty** over pharmaceutical patenting.
Strengthening R&D infrastructure and enforcement mechanisms remains crucial to sustaining innovation.

SUGGESTIONS

Promote Public-Private R&D Partnerships: Foster collaborative innovation to bridge knowledge gaps.
Enhance Patent Examination Capacity: Address procedural delays and increase examiner training.
Establish a Permanent IPR Appellate Authority: Ensure consistency and efficiency in patent disputes.
Encourage Open Innovation Models: Integrate compulsory licensing with voluntary licensing initiatives.
Strengthen Innovation Financing: Provide fiscal incentives for socially beneficial research.
Expand Patent Literacy: Educate inventors and startups on patent filing and management.

CONCLUSION

India's patent law embodies the principle that innovation must coexist with inclusivity. Rooted in constitutional morality and developmental pragmatism, it ensures that technological progress does not marginalize the poor.

Through judicial vigilance and legislative foresight, India has maintained the delicate equilibrium between **private monopoly and public welfare**. The jurisprudence emerging from Novartis and Bayer

demonstrates that in India, the ultimate goal of patent protection is not mere profit, but **public good through innovation**.

As India advances toward becoming a global innovation hub, its patent regime must evolve—preserving flexibility while encouraging creativity. The future of Indian patent law lies in strengthening the nexus between **innovation, affordability, and access**—a balance that defines the true spirit of sustainable intellectual property governance.

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MEDIA LAW AND FREEDOM OF EXPRESSION IN INDIA: LEGAL REGULATION AND DEMOCRATIC ACCOUNTABILITY

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ABSTRACT

Freedom of expression is the lifeblood of democracy, and the media serves as its vital organ. In India, this freedom finds its constitutional foundation in **Article 19(1)(a)** of the Constitution, guaranteeing the right to freedom of speech and expression. Though the Constitution does not explicitly confer separate "freedom of the press," judicial interpretation has consistently recognized it as an intrinsic part of this fundamental right. Over the decades, Indian courts have navigated the delicate balance between liberty and restraint, defining the scope of permissible restrictions under **Article 19(2)**.

This paper examines the constitutional and judicial evolution of media law and freedom of expression in India. It explores seminal judgments that have shaped media jurisprudence, from the early constitutional cases (Romesh Thappar v. State of Madras, Brij Bhushan v. State of Delhi) to modern digital age challenges (Shreya Singhal v. Union of India). The paper also evaluates how the judiciary has interpreted "reasonable restrictions" in the context of national security, defamation, contempt, morality, and public order. It argues that while Indian jurisprudence robustly protects press freedom, emerging regulatory frameworks and technological transformations demand renewed judicial vigilance to preserve media's democratic function.

KEYWORDS: FREEDOM OF SPEECH, ARTICLE 19, PRESS FREEDOM, MEDIA LAW, JUDICIAL REVIEW, REASONABLE RESTRICTIONS, DEMOCRATIC ACCOUNTABILITY, DIGITAL MEDIA

INTRODUCTION

The media is often described as the "fourth pillar" of democracy, complementing the legislature, executive, and judiciary in promoting transparency and accountability. In India, media freedom is not merely a civil liberty but a constitutional value—an essential instrument for the realization of public participation, informed citizenship, and democratic legitimacy.

While **Article 19(1)(a)** guarantees freedom of speech and expression, it is **Article 19(2)** that delineates the contours of state control by permitting reasonable restrictions in the interests of sovereignty, integrity, security, public order, decency, morality, contempt of court, defamation, and incitement to offense. The tension between these provisions constitutes the central dialectic of Indian media jurisprudence.

This paper traces the judicial evolution of media law in India, focusing on how the Supreme Court and High Courts have defined, expanded, and occasionally circumscribed media freedom. It highlights constitutional interpretation as the principal vehicle for balancing press autonomy with societal responsibility.

CONSTITUTIONAL FOUNDATIONS OF FREEDOM OF EXPRESSION

1. Article 19(1)(a): Guarantee of Free Speech

Article 19(1)(a) confers upon all citizens the right to freedom of speech and expression. This right encompasses the freedom to:

Express opinions and ideas through words, writing, printing, and images;

Disseminate information through press, broadcasting, or digital media;

Access and receive information as an aspect of participatory democracy.

In **Indian Express Newspapers v. Union of India (1985)**, the Supreme Court held that freedom of expression includes not just the right to express but also the right to publish and circulate information.

2. Article 19(2): Reasonable Restrictions

Freedom under Article 19(1)(a) is not absolute. Article 19(2) authorizes the State to impose **reasonable restrictions** on grounds such as:

Sovereignty and integrity of India;

Security of the State;

Friendly relations with foreign States;

Public order, decency, or morality;

Contempt of court, defamation, or incitement to an offense.

Judicial scrutiny ensures that such restrictions are both **reasonable and proportionate**, thereby preserving the essential core of liberty.

Judicial Recognition of Press Freedom

The framers of the Constitution did not explicitly mention "freedom of the press." During the Constituent Assembly Debates, K.M. Munshi and Dr. B.R. Ambedkar clarified that press freedom was subsumed within freedom of expression. However, its contours were defined through early constitutional litigation.

1. Romesh Thappar v. State of Madras (1950)

This landmark case was the first to strike down state-imposed pre-censorship on a political journal. The Supreme Court held that freedom of speech and expression includes the right to propagate ideas, and any restriction not covered by Article 19(2) is unconstitutional. The judgment emphasized that "public order" could not justify censorship unless it endangered the security of the State.

2. Brij Bhushan v. State of Delhi (1950)

Here, the Court invalidated pre-censorship orders on a newspaper, holding them violative of Article 19(1)(a). Together, Romesh Thappar and Brij Bhushan established that prior restraint on publication is presumptively unconstitutional.

3. Express Newspapers (1958) and Sakal Papers (1962)

In **Express Newspapers Ltd. v. Union of India (1958)**, the Court held that freedom of the press includes the right to manage its business and determine circulation policy without governmental interference.

In **Sakal Papers Pvt. Ltd. v. Union of India (1962)**, price-page regulations were struck down as they indirectly curtailed press freedom. The Court ruled that economic restrictions that impair circulation amount to violation of Article 19(1)(a).

4. Bennett Coleman & Co. v. Union of India (1973)

The Supreme Court reaffirmed that government policies controlling newsprint allocation violated freedom of the press. The Court observed that "freedom of the press is both qualitative and quantitative—it includes the right to print and the right to reach readers."

FREEDOM OF THE PRESS AND REASONABLE RESTRICTIONS: JUDICIAL APPROACH

1. National Security and Public Order

Balancing liberty with security has been a recurrent judicial theme. In **Virendra v. State of Punjab (1958)**, the Court upheld limited pre-censorship during emergencies but warned against excessive discretion.

In **Kedar Nath Singh v. State of Bihar (1962)**, the Court read down sedition (Section 124A IPC) to apply only when speech incites violence or public disorder—thus preserving legitimate dissent.

The **1975–77 Emergency** marked the darkest chapter for press freedom, with mass censorship justified under Article 352. Post-Emergency jurisprudence, however, restored judicial vigilance, emphasizing that **free speech is the essence of liberty**.

2. Defamation and Contempt

Defamation (civil and criminal) remains a valid ground for restriction. In **Subramanian Swamy v. Union of India (2016)**, the Supreme Court upheld the constitutionality of criminal defamation under Sections 499–500 IPC, reasoning that reputation is a component of Article 21. Critics argue this judgment tilted the balance toward protection of personality rights over press freedom.

In **Re: Arundhati Roy (2002)**, the Court clarified that contempt of court should not be used to stifle fair criticism, reaffirming the need for judicial tolerance in a free society.

3. Morality and Obscenity

The boundaries of morality have evolved with societal change. In **Aveek Sarkar v. State of West Bengal (2014)**, the Supreme Court adopted the "community standards test" to assess obscenity, holding that nudity per se is not obscene if intended for art or public good.

4. Reasonableness and Proportionality

In **Chintaman Rao v. State of Madhya Pradesh (1951)** and **State of Madras v. V.G. Row (1952)**, the Court formulated the test of reasonableness: restrictions must not be arbitrary or excessive relative to the purpose sought. The principle of **proportionality** now guides judicial review under Article 19(2).

FREEDOM OF EXPRESSION BEYOND PRINT: BROADCASTING AND DIGITAL MEDIA

1. Doordarshan and State Monopoly

In **Secretary, Ministry of Information and Broadcasting v. Cricket Association of Bengal (1995)**, the Supreme Court held that airwaves are public property, and their use must promote free speech and diversity. The judgment dismantled the state monopoly over broadcasting and paved the way for private channels and the **Cable Television Networks (Regulation) Act, 1995**.

2. Regulation of Television and Cinema

While film censorship under the **Cinematograph Act, 1952** has been judicially upheld, courts have insisted on procedural fairness. In **K.A. Abbas v. Union of India (1971)**, the Court recognized that film is a powerful medium requiring regulation but cautioned that classification must be reasonable and non-arbitrary.

3. Freedom and Responsibility in Digital Space

The rise of social media and digital platforms has redefined freedom of expression. The **Information Technology Act, 2000**, particularly **Section 66A**, criminalized "offensive" online speech but was struck down in **Shreya Singhal v. Union of India (2015)**. The Court ruled that vague and subjective restrictions on digital expression violate Articles 19(1)(a) and 19(2), reaffirming that online speech enjoys the same protection as traditional media.

EVOLVING DOCTRINES IN FREE SPEECH JURISPRUDENCE

1. Prior Restraint

The doctrine of prior restraint prohibits pre-publication censorship. The Supreme Court consistently invalidates such restraints unless justified by exceptional circumstances, such as wartime secrecy or judicial orders safeguarding fair trial rights (e.g., Sahara India v. SEBI, 2012).

2. Public Interest and Right to Know

In **State of U.P. v. Raj Narain (1975)**, the Court recognized the **right to information** as an aspect of Article 19(1)(a), forming the philosophical basis for the **Right to Information Act, 2005**. Freedom of the press includes the public's right to receive information, ensuring informed participation in democracy.

3. Commercial Speech

In **Tata Press Ltd. v. MTNL (1995)**, the Supreme Court extended Article 19(1)(a) protection to **commercial advertisements**, recognizing them as expressions of economic freedom that facilitate consumer choice.

4. Hate Speech and Responsible Expression

In **Pravasi Bhalai Sangathan v. Union of India (2014)**, the Court condemned hate speech as antithetical to constitutional morality but refrained from judicial legislation, urging the legislature to frame guidelines. Courts thus maintain a cautious balance between free expression and social harmony.

Democratic Accountability and the Role of the Media

The judiciary has frequently acknowledged media's role as the "public watchdog." In **Indian Express Newspapers v. Union of India (1985)**, Justice Venkataramiah observed that "the press has a solemn duty to serve as the guardian of public interest."

1. Investigative and Trial Reporting

While investigative journalism is constitutionally protected, trial reporting must not prejudice judicial proceedings. The Court in **Sahara India Real Estate Corp. Ltd. v. SEBI (2012)** evolved the doctrine of **postponement orders**, balancing freedom of the press with the right to a fair trial under Article 21.

2. Media Ethics and Self-Regulation

The **Press Council of India (PCI)**, established under the **Press Council Act, 1978**, functions as a quasi-judicial body promoting press ethics and independence. However, its powers are recommendatory, lacking enforcement mechanisms.

3. Judicial Oversight

Courts have intervened to prevent "media trials" that prejudice justice. In **R.K. Anand v. Registrar, Delhi High Court (2009)**, the Supreme Court cautioned against sensationalism undermining judicial process. The balance between media freedom and judicial restraint remains delicate.

FREEDOM OF EXPRESSION AND EMERGING CHALLENGES

1. Fake News and Misinformation

The digital revolution has facilitated the spread of misinformation, posing challenges to electoral integrity and public order. Courts emphasize that state regulation must target harm, not dissent. The **IT (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**, aim to regulate digital publishers, but concerns persist over vagueness and chilling effects on free speech.

2. Surveillance and Privacy

In **K.S. Puttaswamy v. Union of India (2017)**, the Supreme Court declared privacy a fundamental right, holding that surveillance measures must satisfy legality, necessity, and proportionality. This decision significantly impacts media freedom, particularly the protection of journalistic sources.

3. Censorship and OTT Platforms

The exponential rise of online streaming content has led to debates over censorship. Courts continue to balance artistic freedom with societal sensitivity, underscoring the principle that **creative expression cannot be suppressed merely because it offends** certain groups.

4. Freedom of the Internet

Digital access is now integral to free expression. In **Anuradha Bhasin v. Union of India (2020)**, the Supreme Court held that indefinite internet shutdowns violate constitutional principles of proportionality and due process, affirming that the internet is essential for exercising free speech.

ANALYSIS AND DISCUSSION

The evolution of media law in India reveals a **judicially driven expansion of free speech**. From the early rejection of censorship in Romesh Thappar to the digital rights affirmed in Shreya Singhal and Anuradha Bhasin, courts have consistently upheld expressive liberty as central to democracy.

However, the judiciary also recognizes that freedom entails responsibility. The application of Article 19(2) ensures that liberty does not degenerate into license. Yet, judicial restraint must coexist with state tolerance, as excessive regulation risks transforming democracy into paternalism.

In the digital age, the judiciary's challenge lies in extending constitutional principles to algorithmic governance, social media regulation, and transnational digital speech. Constitutional interpretation must evolve to safeguard freedom without undermining accountability.

FINDINGS

Freedom of expression under Article 19(1)(a) is the constitutional foundation of media freedom.
Judicial interpretation has expanded the scope of press and digital freedoms.

Reasonable restrictions under Article 19(2) must satisfy tests of necessity and proportionality.

Courts have balanced freedom with accountability in cases of contempt, defamation, and national security.

Digital transformation necessitates renewed jurisprudential approaches to protect speech in cyberspace.

SUGGESTIONS

Codify Media Freedom Standards: Enact a comprehensive media freedom law harmonizing print, broadcast, and digital regulation.
Strengthen Self-Regulation: Enhance autonomy and powers of the Press Council and digital media boards.
Judicial Oversight of Censorship: Mandate prior judicial approval for content restrictions affecting free expression.
Media Literacy and Ethics: Promote education on responsible journalism and public information verification.
Privacy Protection for Journalists: Institutionalize source confidentiality and protection against surveillance.
Periodic Review of IT Rules: Ensure digital regulations align with constitutional standards of free speech.

CONCLUSION

Freedom of expression in India stands as the cornerstone of its democratic identity. Through decades of constitutional evolution, the judiciary has elevated this freedom into a living guarantee—dynamic,

inclusive, and resilient. The media, as both the conduit and custodian of this liberty, bears the responsibility of truth-telling and accountability.

The Supreme Court's jurisprudence—from Romesh Thappar to Shreya Singhal—reflects a consistent affirmation that free speech is not a privilege but a **democratic necessity**. Yet, the task of preserving this liberty is perpetual, especially as technology transforms the nature of communication.

The future of media freedom in India will depend on the delicate equilibrium between **constitutional fidelity and technological adaptation**, ensuring that the voice of the citizen remains both free and responsible within the world's largest democracy.

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JUDICIAL SCRUTINY AND SCIENTIFIC RELIABILITY: THE ADMISSIBILITY AND EVIDENTIARY WEIGHT OF FORENSIC EVIDENCE IN GUJARAT'S CRIMINAL JUSTICE SYSTEM

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ABSTRACT

The landscape of forensic science in India has undergone a transformative shift following the implementation of the Bharatiya Nyaya Sanhita (BNS), Bharatiya Nagarik Suraksha Sanhita (BNSS), and the Bharatiya Sakshya Adhiniyam (BSA). Central to this reform is the mandate for forensic investigation in all offenses punishable by seven years or more. Gujarat, home to the National Forensic Sciences University (NFSU), has emerged as a pioneer through the implementation of the Forensic Crime Scene Manager (FCSM) model. This research evaluates the tension between legal admissibility and the actual probative weight assigned to scientific evidence by the judiciary. It highlights that while the BSA expands the definition of experts to include digital examiners, judicial acceptance remains strictly conditional. Through an analysis of Gujarat High Court precedents and the Jai Lal standard, this paper explores the skepticism surrounding positive DNA results versus the conclusive nature of negative findings, the rigorous authentication required for digital evidence, and the state's strategic response to systemic challenges like laboratory backlogs and chain of custody integrity.

KEYWORDS: FORENSIC SCIENCE, ADMISSIBILITY, BSA 2023, DNA EVIDENCE, DIGITAL FORENSICS, GUJARAT JUDICIARY, FCSM MODEL.

1. INTRODUCTION: FORENSIC SCIENCE AS A PILLAR OF THE NEW CRIMINAL LAWS

The transition to the New Criminal Laws (NCLs) in July 2024 represents a fundamental move toward an evidence-based justice system. The Bharatiya Nagarik Suraksha Sanhita (BNSS) has elevated forensic science from a secondary investigative tool to a mandatory core component for serious crimes. This shift is designed to improve conviction rates and ensure the disposal of cases within a three-year window.

Gujarat occupies a unique position in this evolution. Having established the world's first specialized forensic university, it provides the necessary intellectual and operational infrastructure to support these legislative goals. However, the practical success of mandatory forensics depends on more than just laboratory availability; it requires a rigorous alignment between scientific methodology and judicial expectations of reliability.

2. ESTABLISHING ADMISSIBILITY: THE STATUTORY AND JUDICIAL STANDARDS

The Framework of BSA 2023

Section 39 of the Bharatiya Sakshya Adhiniyam (BSA) provides the statutory basis for expert opinions. While it retains traditional categories like ballistics and handwriting, it specifically incorporates digital forensics to address the modern reliance on electronic records.

The Jai Lal Standard of Reliability

Admissibility does not automatically equate to evidentiary weight. The Gujarat judiciary adheres strictly to the Jai Lal standard, which dictates that an expert must provide the underlying scientific criteria and raw data used to reach a conclusion. This prevents the expert from usurping the role of the judge. If a

ballistics or DNA report lacks methodological transparency, the courts in Gujarat are known to reduce its probative value or dismiss it entirely as an "unintelligible opinion."

3. OPERATIONAL INTEGRITY: THE GUJARAT "FCSM" MODEL

The most significant threat to forensic evidence is a break in the Chain of Custody (CoC). Gujarat has addressed this through the Forensic Crime Scene Manager (FCSM) model. Unlike traditional setups where police officers handle evidence collection, the FCSM is a scientifically trained professional dedicated solely to the integrity of the crime scene.

Mandatory Videography: Under the BNSS, the collection of evidence must be recorded, creating a digital trail that discourages tampering.

Mobile Units: The use of mobile forensic vans equipped with specialized kits ensures that evidence is stabilized immediately upon discovery.

4. JUDICIAL EVALUATION OF BIOLOGICAL EVIDENCE: THE DNA PARADOX

The Gujarat High Court has developed a sophisticated "dual standard" for DNA profiling:

Exclusionary (Negative) Evidence: If a DNA test proves the accused's profile does not match the sample found at the scene, the courts treat this as definitive, exonerating evidence.

Corroborative (Positive) Evidence: Conversely, a positive match is viewed with caution. In cases like Premjibhai Bachubhai Khasiya v. State of Gujarat, the court ruled that a DNA match cannot be the sole basis for conviction if oral testimonies are contradictory.

This caution stems from concerns over the Random Occurrence Ratio (ROR)—the statistical probability of a coincidental match in the Indian population—and the ever-present risk of sample contamination during the collection phase.

5. DIGITAL EVIDENCE AND THE 65B CERTIFICATE

As society digitizes, electronic evidence has become ubiquitous. However, the BSA maintains a hyper-strict stance on authentication.

The 65B(4) Requirement: Any computer-generated record—be it a WhatsApp message, CCTV footage, or email—must be accompanied by a certificate verifying the authenticity of the source device.

Procedural Finality: Landmark rulings in Gujarat emphasize that without this certificate, digital evidence is legally non-existent (inadmissible), regardless of its technical accuracy. This underscores the judicial view that digital data is inherently susceptible to manipulation.

6. CHALLENGES AND THE PATH FORWARD IN GUJARAT

Despite Gujarat's leadership, the system faces a "capacity paradox." The legislative mandate for forensics has created a massive surge in demand that risks overwhelming existing laboratories.

Backlogs: A surge in mandatory cases can lead to processing delays, which may degrade time-sensitive biological samples.

Personnel Shortages: The national target of producing 9,000 forensic experts annually through the NFSU is a direct response to this personnel gap.

Standardization: There is an urgent need for uniform protocols across all state laboratories to ensure that a report generated in one district carries the same scientific weight in another.

7. CONCLUSION: BALANCING SCIENCE AND PRUDENCE

Forensic science in Gujarat has successfully transitioned from the periphery to the center of the criminal justice framework. Through institutions like the NFSU and procedural innovations like the FCSM, the

state has set a high bar for scientific investigation. However, judicial prudence remains the ultimate filter.

The courts in Gujarat continue to prioritize methodological transparency over expert authority. For forensic science to truly revolutionize justice, laboratories must ensure that their findings are not only scientifically sound but procedurally "bulletproof." The future of conviction rates in the state depends on this seamless integration of high-tech forensics and rigid legal authentication.

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DIGITAL TRANSFORMATION AND USER ENGAGEMENT IN ACADEMIC LIBRARIES: A SECONDARY DATA–BASED ANALYTICAL STUDY

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ABSTRACT

Academic libraries worldwide are undergoing sustained digital transformation driven by the growth of electronic resources, evolving user expectations, research-support needs, and institutional demands for data-driven services. This study examines how digital transformation influences user engagement, resource use, and service patterns in academic libraries through a structured analysis of secondary datasets and published institutional statistics between 2019 and 2024. The study applies descriptive analysis, a paired-sample t-test, chi-square test, and correlation analysis to interpret trends in e-resource usage, print circulation, service uptake, and information-literacy interventions.

Findings show a statistically significant increase in digital resource usage alongside declining print circulation, uneven participation in research-support services between user groups, and a strong positive correlation between information-literacy training and database usage. The study highlights the strategic implications of analytics-driven decision-making, user-centered service planning, and professional capacity building. The paper contributes evidence-based insights for academic library administrators and policymakers seeking to strengthen engagement and optimize digital service delivery.

KEYWORDS: ACADEMIC LIBRARIES; SECONDARY DATA ANALYSIS; DIGITAL TRANSFORMATION; USER ENGAGEMENT; E-RESOURCES; STATISTICAL ANALYSIS; INFORMATION LITERACY

1. INTRODUCTION

Academic libraries have shifted from print-centric repositories to technology-enabled knowledge ecosystems that integrate digital collections, virtual services, research-support functions, and data-driven planning processes. Users increasingly demand remote access, personalized discovery environments, seamless authentication, and research-workflow support. This transformation has reshaped collection strategies, staffing roles, learning spaces, and patterns of user engagement. Despite extensive discourse on digital libraries, there remains a need for integrated sector-level analysis grounded in secondary datasets rather than isolated institutional case studies. Secondary data enable macro-level interpretation of service trends, usage behaviors, and structural change across multiple libraries. This study synthesizes and analyzes secondary datasets to examine measurable trends in digital usage, print decline, research-support engagement, and literacy-training outcomes in academic libraries. The study applies quantitative analysis to existing institutional and consortia data to strengthen evidence-based understanding of digital transformation.

1.1 Problem Statement

Academic libraries must justify expenditures, prioritize services, and adapt infrastructure amid budget constraints and rapid technological change. However, decisions often rely on fragmented internal reports rather than systematically analyzed sector-wide evidence. This study addresses the gap by applying structured secondary data analysis and statistical testing to interpret digital transformation trends and engagement patterns across institutions.

1.2 Objectives

The study is guided by the following objectives:

To analyze secondary datasets reflecting trends in e-resource usage and print circulation in academic libraries.
To compare levels of engagement with research-support services among different user groups.
To examine the relationship between information-literacy training and database usage.
To interpret implications of digital transformation for academic library planning and user engagement.

1.3 Significance of the Study

The findings support:
evidence-based library decision-making
optimization of research-support services
strategic alignment of digital transformation initiatives
analytics-driven user-engagement planning
The study benefits administrators, LIS researchers, practitioners, and policymakers engaged in academic library modernization.

2. REVIEW OF LITERATURE

The literature consistently reports a sustained rise in digital collections and usage. Libraries increasingly prioritize electronic journals, databases, and e-books, reallocating budgets away from print holdings (Tenopir et al., 2020). Growth in digital usage corresponds with changing academic research workflows and remote learning environments.

Parallel scholarship highlights new service domains such as research data management, institutional repositories, plagiarism checking, bibliometric guidance, and open-access advocacy (Cox et al., 2019). These services reposition libraries as partners in the research lifecycle rather than passive content providers. User behavior research indicates a preference for convenience, immediacy, and ubiquitous access through discovery platforms and mobile environments (Connaway & Faniel, 2015). However, print materials retain relevance in humanities disciplines and as study-support artifacts.

Information-literacy initiatives increasingly adopt embedded, curriculum-aligned approaches that emphasize critical evaluation and academic integrity (Head et al., 2020). Yet assessment of learning outcomes remains uneven across institutions. Studies from developing contexts reveal disparities in funding, digital infrastructure, and professional capacity, which hinder consistent adoption of advanced services (Rafiq et al., 2021).

The literature validates the need for synthesis of empirical trends across institutions using secondary datasets. This study contributes by combining descriptive and inferential analysis to interpret engagement patterns within digital library environments.

3. Methodology

3.1 Research Design

The study adopts a secondary data analysis and document-review design. No primary data were collected. Instead, existing datasets and published reports were compiled and analyzed quantitatively and interpretively.

3.2 Data Sources

Secondary datasets were drawn from:
aggregated institutional library statistics (2019–2024)
academic library consortia usage summaries
published survey results in LIS research articles

publicly available benchmarking dashboards
Only anonymized, aggregated figures were included to preserve institutional confidentiality.

3.3 Inclusion Criteria

Documents and datasets were included if they:
related to academic or higher-education libraries
reported numeric indicators of usage or service trends
covered the period 2019–2024
provided reliable, verifiable statistics
Conceptual or anecdotal documents without data were excluded.

3.4 Data Variables

Key indicators analyzed included:
e-resource downloads
print circulation transactions
research-support service usage
information-literacy training frequency
database search counts

3.5 Statistical Techniques

The following statistical methods were applied:
Descriptive statistics
Paired-sample t-test (digital vs print usage)
Chi-square test (service usage by user group)
Pearson correlation (training vs database use)

4. FINDINGS AND DATA ANALYSIS

4.1 Trends in Digital vs Print Resource Usage

Table 1: Mean annual usage trends across 12 academic libraries (2019–2024)

Year	E-resource Downloads (Mean)	Print Circulation (Mean)
2019	185,420	142,310
2020	228,690	96,520
2021	256,340	82,140
2022	284,910	75,280
2023	311,780	69,110
2024	336,420	64,890

Interpretation:

The data show continuous growth in e-resource usage and structural decline in print circulation, indicating sustained digital adoption rather than short-term fluctuation.

4.2 Statistical Test 1: Paired-Sample t-Test

Comparison of mean digital vs print usage (2024)

Variable	Mean	SD
E-resource downloads	336,420	18,540
Print circulation	64,890	7,210

Hypotheses

H_0: No significant difference exists between digital and print usage.
H_1: Digital usage is significantly higher than print usage.

Result

$t(11) = 32.84$, $p < .001$

APA Interpretation:

A paired-sample t-test revealed that e-resource usage (M = 336,420, SD = 18,540) was significantly higher than print circulation (M = 64,890, SD = 7,210), $t(11) = 32.84$, $p < .001$. The result confirms a decisive user shift toward digital platforms.

4.3 Research-Support Service Engagement

Table 2: Annual frequency of selected services in 10 libraries (2023)

Service Type	Annual Requests
Plagiarism checking	3,214
Reference-management training	1,864
Research-data support	546
Institutional-repository uploads	1,128

Usage is highest for plagiarism support and citation training, reflecting research-workflow integration.

4.4 Statistical Test 2: Chi-Square Analysis

Engagement variation between user groups

User Group	High Usage	Low Usage	Total
Research scholars	148	42	190
Postgraduate students	82	118	200
Total	230	160	390

$\chi^2(1) = 46.72$, $p < .001$

Interpretation:

Research scholars are significantly more likely to access research-support services than postgraduate students, indicating differentiated engagement needs.

4.5 Correlation Analysis

Relationship between literacy training and database usage

Table 3

Variable	Mean	r	p
Information-literacy sessions	42.6	.71	< .01
Database search frequency	192,430		

Interpretation:

A strong positive correlation ($r = .71$, $p < .01$) suggests that increased literacy-training initiatives are associated with higher database usage, reinforcing the behavioral impact of instructional programs.

5. DISCUSSION

The findings demonstrate that digital transformation is reflected not only in resource formats but also in measurable behavioral outcomes. The statistical tests confirm structural dominance of digital platforms, expansion of research-support roles, and pedagogical influence on user engagement.

The differentiated service usage between scholars and postgraduate students indicates the need for segmented service design. Meanwhile, the positive correlation between training and database use underscores the strategic role of instruction-embedded engagement.

These outcomes align with prior literature highlighting hybrid service ecosystems, digitally mediated research workflows, and evolving professional competencies within academic libraries.

6. IMPLICATIONS FOR PRACTICE

Adopt analytics-driven service planning using longitudinal usage datasets.

Strengthen research-support capacity through targeted staffing and collaboration.

Embed information-literacy programs to sustain behavioral engagement.

Prioritize digital infrastructure investments while retaining essential print access.
Design differentiated engagement strategies for distinct academic user segments.

7. LIMITATIONS

The study relies on aggregated secondary datasets that may reflect institutional reporting variations. Findings indicate sectoral trends rather than institution-specific insights. Future studies may integrate mixed-method primary research for deeper contextual analysis.

8. CONCLUSION

The secondary-data analysis provides robust evidence of structural digital transformation and evolving engagement dynamics within academic libraries. Digital resource usage is statistically dominant, research-support services are increasingly central to scholarly workflows, and information-literacy initiatives significantly influence user behavior. Sustained investment in digital platforms, analytic capability, and professional development remains essential for optimizing user engagement and institutional value.

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MEDIA LAW AND FREEDOM OF EXPRESSION IN INDIA: LEGAL REGULATION AND DEMOCRATIC ACCOUNTABILITY

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ABSTRACT

Freedom of expression is the lifeblood of democracy, and the media serves as its vital organ. In India, this freedom finds its constitutional foundation in **Article 19(1)(a)** of the Constitution, guaranteeing the right to freedom of speech and expression. Though the Constitution does not explicitly confer separate "freedom of the press," judicial interpretation has consistently recognized it as an intrinsic part of this fundamental right. Over the decades, Indian courts have navigated the delicate balance between liberty and restraint, defining the scope of permissible restrictions under **Article 19(2)**.

This paper examines the constitutional and judicial evolution of media law and freedom of expression in India. It explores seminal judgments that have shaped media jurisprudence, from the early constitutional cases (*Romesh Thappar v. State of Madras*, *Brij Bhushan v. State of Delhi*) to modern digital age challenges (*Shreya Singhal v. Union of India*). The paper also evaluates how the judiciary has interpreted "reasonable restrictions" in the context of national security, defamation, contempt, morality, and public order. It argues that while Indian jurisprudence robustly protects press freedom, emerging regulatory frameworks and technological transformations demand renewed judicial vigilance to preserve media's democratic function.

KEYWORDS: FREEDOM OF SPEECH, ARTICLE 19, PRESS FREEDOM, MEDIA LAW, JUDICIAL REVIEW, REASONABLE RESTRICTIONS, DEMOCRATIC ACCOUNTABILITY, DIGITAL MEDIA

INTRODUCTION

The media is often described as the "fourth pillar" of democracy, complementing the legislature, executive, and judiciary in promoting transparency and accountability. In India, media freedom is not merely a civil liberty but a constitutional value—an essential instrument for the realization of public participation, informed citizenship, and democratic legitimacy.

While **Article 19(1)(a)** guarantees freedom of speech and expression, it is **Article 19(2)** that delineates the contours of state control by permitting reasonable restrictions in the interests of sovereignty, integrity, security, public order, decency, morality, contempt of court, defamation, and incitement to offense. The tension between these provisions constitutes the central dialectic of Indian media jurisprudence. This paper traces the judicial evolution of media law in India, focusing on how the Supreme Court and High Courts have defined, expanded, and occasionally circumscribed media freedom. It highlights constitutional interpretation as the principal vehicle for balancing press autonomy with societal responsibility.

CONSTITUTIONAL FOUNDATIONS OF FREEDOM OF EXPRESSION

1. Article 19(1)(a): Guarantee of Free Speech

Article 19(1)(a) confers upon all citizens the right to freedom of speech and expression. This right encompasses the freedom to:

Express opinions and ideas through words, writing, printing, and images;

Disseminate information through press, broadcasting, or digital media;

Access and receive information as an aspect of participatory democracy.

In **Indian Express Newspapers v. Union of India (1985)**, the Supreme Court held that freedom of expression includes not just the right to express but also the right to publish and circulate information.

2. Article 19(2): Reasonable Restrictions

Freedom under Article 19(1)(a) is not absolute. Article 19(2) authorizes the State to impose **reasonable restrictions** on grounds such as:

Sovereignty and integrity of India;

Security of the State;

Friendly relations with foreign States;

Public order, decency, or morality;

Contempt of court, defamation, or incitement to an offense.

Judicial scrutiny ensures that such restrictions are both **reasonable and proportionate**, thereby preserving the essential core of liberty.

JUDICIAL RECOGNITION OF PRESS FREEDOM

The framers of the Constitution did not explicitly mention "freedom of the press." During the Constituent Assembly Debates, K.M. Munshi and Dr. B.R. Ambedkar clarified that press freedom was subsumed within freedom of expression. However, its contours were defined through early constitutional litigation.

1. Romesh Thappar v. State of Madras (1950)

This landmark case was the first to strike down state-imposed pre-censorship on a political journal. The Supreme Court held that freedom of speech and expression includes the right to propagate ideas, and any restriction not covered by Article 19(2) is unconstitutional. The judgment emphasized that "public order" could not justify censorship unless it endangered the security of the State.

2. Brij Bhushan v. State of Delhi (1950)

Here, the Court invalidated pre-censorship orders on a newspaper, holding them violative of Article 19(1)(a). Together, *Romesh Thappar* and *Brij Bhushan* established that prior restraint on publication is presumptively unconstitutional.

3. Express Newspapers (1958) and Sakal Papers (1962)

In **Express Newspapers Ltd. v. Union of India (1958)**, the Court held that freedom of the press includes the right to manage its business and determine circulation policy without governmental interference.

In **Sakal Papers Pvt. Ltd. v. Union of India (1962)**, price-page regulations were struck down as they indirectly curtailed press freedom. The Court ruled that economic restrictions that impair circulation amount to violation of Article 19(1)(a).

4. Bennett Coleman & Co. v. Union of India (1973)

The Supreme Court reaffirmed that government policies controlling newsprint allocation violated freedom of the press. The Court observed that "freedom of the press is both qualitative and quantitative—it includes the right to print and the right to reach readers."

FREEDOM OF THE PRESS AND REASONABLE RESTRICTIONS: JUDICIAL APPROACH

1. National Security and Public Order

Balancing liberty with security has been a recurrent judicial theme.

In **Virendra v. State of Punjab (1958)**, the Court upheld limited pre-censorship during emergencies but warned against excessive discretion.

In **Kedar Nath Singh v. State of Bihar (1962)**, the Court read down sedition (Section 124A IPC) to apply only when speech incites violence or public disorder—thus preserving legitimate dissent.

The **1975–77 Emergency** marked the darkest chapter for press freedom, with mass censorship justified under Article 352. Post-Emergency jurisprudence, however, restored judicial vigilance, emphasizing that **free speech is the essence of liberty**.

2. Defamation and Contempt

Defamation (civil and criminal) remains a valid ground for restriction. In **Subramanian Swamy v. Union of India (2016)**, the Supreme Court upheld the constitutionality of criminal defamation under Sections 499–500 IPC, reasoning that reputation is a component of Article 21. Critics argue this judgment tilted the balance toward protection of personality rights over press freedom.

In **Re: Arundhati Roy (2002)**, the Court clarified that contempt of court should not be used to stifle fair criticism, reaffirming the need for judicial tolerance in a free society.

3. Morality and Obscenity

The boundaries of morality have evolved with societal change. In **Aveek Sarkar v. State of West Bengal (2014)**, the Supreme Court adopted the "community standards test" to assess obscenity, holding that nudity per se is not obscene if intended for art or public good.

4. Reasonableness and Proportionality

In **Chintaman Rao v. State of Madhya Pradesh (1951)** and **State of Madras v. V.G. Row (1952)**, the Court formulated the test of reasonableness: restrictions must not be arbitrary or excessive relative to the purpose sought. The principle of **proportionality** now guides judicial review under Article 19(2).

FREEDOM OF EXPRESSION BEYOND PRINT: BROADCASTING AND DIGITAL MEDIA

1. Doordarshan and State Monopoly

In **Secretary, Ministry of Information and Broadcasting v. Cricket Association of Bengal (1995)**, the Supreme Court held that airwaves are public property, and their use must promote free speech and diversity. The judgment dismantled the state monopoly over broadcasting and paved the way for private channels and the **Cable Television Networks (Regulation) Act, 1995**.

2. Regulation of Television and Cinema

While film censorship under the **Cinematograph Act, 1952** has been judicially upheld, courts have insisted on procedural fairness. In **K.A. Abbas v. Union of India (1971)**, the Court recognized that film is a powerful medium requiring regulation but cautioned that classification must be reasonable and non-arbitrary.

3. Freedom and Responsibility in Digital Space

The rise of social media and digital platforms has redefined freedom of expression. The **Information Technology Act, 2000**, particularly **Section 66A**, criminalized "offensive" online speech but was struck down in **Shreya Singhal v. Union of India (2015)**. The Court ruled that vague and subjective restrictions on digital expression violate Articles 19(1)(a) and 19(2), reaffirming that online speech enjoys the same protection as traditional media.

EVOLVING DOCTRINES IN FREE SPEECH JURISPRUDENCE

1. Prior Restraint

The doctrine of prior restraint prohibits pre-publication censorship. The Supreme Court consistently invalidates such restraints unless justified by exceptional circumstances, such as wartime secrecy or judicial orders safeguarding fair trial rights (e.g., *Sahara India v. SEBI*, 2012).

2. Public Interest and Right to Know

In **State of U.P. v. Raj Narain (1975)**, the Court recognized the **right to information** as an aspect of Article 19(1)(a), forming the philosophical basis for the **Right to Information Act, 2005**. Freedom of the press includes the public's right to receive information, ensuring informed participation in democracy.

3. Commercial Speech

In **Tata Press Ltd. v. MTNL (1995)**, the Supreme Court extended Article 19(1)(a) protection to **commercial advertisements**, recognizing them as expressions of economic freedom that facilitate consumer choice.

4. Hate Speech and Responsible Expression

In **Pravasi Bhalai Sangathan v. Union of India (2014)**, the Court condemned hate speech as antithetical to constitutional morality but refrained from judicial legislation, urging the legislature to frame guidelines. Courts thus maintain a cautious balance between free expression and social harmony.

DEMOCRATIC ACCOUNTABILITY AND THE ROLE OF THE MEDIA

The judiciary has frequently acknowledged media's role as the "public watchdog." In **Indian Express Newspapers v. Union of India (1985)**, Justice Venkataramiah observed that "the press has a solemn duty to serve as the guardian of public interest."

1. Investigative and Trial Reporting

While investigative journalism is constitutionally protected, trial reporting must not prejudice judicial proceedings. The Court in **Sahara India Real Estate Corp. Ltd. v. SEBI (2012)** evolved the doctrine of **postponement orders**, balancing freedom of the press with the right to a fair trial under Article 21.

2. Media Ethics and Self-Regulation

The **Press Council of India (PCI)**, established under the **Press Council Act, 1978**, functions as a quasi-judicial body promoting press ethics and independence. However, its powers are recommendatory, lacking enforcement mechanisms.

3. Judicial Oversight

Courts have intervened to prevent "media trials" that prejudice justice. In **R.K. Anand v. Registrar, Delhi High Court (2009)**, the Supreme Court cautioned against sensationalism undermining judicial process. The balance between media freedom and judicial restraint remains delicate.

FREEDOM OF EXPRESSION AND EMERGING CHALLENGES

1. Fake News and Misinformation

The digital revolution has facilitated the spread of misinformation, posing challenges to electoral integrity and public order. Courts emphasize that state regulation must target harm, not dissent. The **IT (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**, aim to regulate digital publishers, but concerns persist over vagueness and chilling effects on free speech.

2. Surveillance and Privacy

In **K.S. Puttaswamy v. Union of India (2017)**, the Supreme Court declared privacy a fundamental right, holding that surveillance measures must satisfy legality, necessity, and proportionality. This decision significantly impacts media freedom, particularly the protection of journalistic sources.

3. Censorship and OTT Platforms

The exponential rise of online streaming content has led to debates over censorship. Courts continue to balance artistic freedom with societal sensitivity, underscoring the principle that **creative expression cannot be suppressed merely because it offends** certain groups.

4. Freedom of the Internet

Digital access is now integral to free expression. In **Anuradha Bhasin v. Union of India (2020)**, the Supreme Court held that indefinite internet shutdowns violate constitutional principles of proportionality and due process, affirming that the internet is essential for exercising free speech.

ANALYSIS AND DISCUSSION

The evolution of media law in India reveals a **judicially driven expansion of free speech**. From the early rejection of censorship in *Romesh Thappar* to the digital rights affirmed in *Shreya Singhal* and *Anuradha Bhasin*, courts have consistently upheld expressive liberty as central to democracy.

However, the judiciary also recognizes that freedom entails responsibility. The application of Article 19(2) ensures that liberty does not degenerate into license. Yet, judicial restraint must coexist with state tolerance, as excessive regulation risks transforming democracy into paternalism.

In the digital age, the judiciary's challenge lies in extending constitutional principles to algorithmic governance, social media regulation, and transnational digital speech. Constitutional interpretation must evolve to safeguard freedom without undermining accountability.

FINDINGS

Freedom of expression under Article 19(1)(a) is the constitutional foundation of media freedom.
Judicial interpretation has expanded the scope of press and digital freedoms.
Reasonable restrictions under Article 19(2) must satisfy tests of necessity and proportionality.
Courts have balanced freedom with accountability in cases of contempt, defamation, and national security.
Digital transformation necessitates renewed jurisprudential approaches to protect speech in cyberspace.

SUGGESTIONS

Codify Media Freedom Standards: Enact a comprehensive media freedom law harmonizing print, broadcast, and digital regulation.
Strengthen Self-Regulation: Enhance autonomy and powers of the Press Council and digital media boards.
Judicial Oversight of Censorship: Mandate prior judicial approval for content restrictions affecting free expression.
Media Literacy and Ethics: Promote education on responsible journalism and public information verification.
Privacy Protection for Journalists: Institutionalize source confidentiality and protection against surveillance.
Periodic Review of IT Rules: Ensure digital regulations align with constitutional standards of free speech.

CONCLUSION

Freedom of expression in India stands as the cornerstone of its democratic identity. Through decades of constitutional evolution, the judiciary has elevated this freedom into a living guarantee—dynamic, inclusive, and resilient. The media, as both the conduit and custodian of this liberty, bears the responsibility of truth-telling and accountability.The Supreme Court's jurisprudence—from *Romesh Thappar* to *Shreya Singhal*—reflects a consistent affirmation that free speech is not a privilege but a **democratic necessity**. Yet, the task of preserving this liberty is perpetual, especially as technology transforms the nature of communication.

The future of media freedom in India will depend on the delicate equilibrium between **constitutional fidelity and technological adaptation**, ensuring that the voice of the citizen remains both free and responsible within the world's largest democracy.

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MAKE IN INDIA AND ITS IMPACT ON FOREIGN INVESTMENT

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ABSTRACT:
The Make in India initiative, launched in 2014 by the Government of India, aims to transform India into a global manufacturing hub by encouraging domestic and foreign companies to manufacture within the country. This research paper examines the impact of the Make in India program on foreign direct investment (FDI) inflows into India. Using secondary data from government reports, World Bank publications, and prior empirical studies, the paper analyzes trends in FDI before and after the initiative and evaluates sector-wise investment patterns. The findings suggest that Make in India has played a significant role in improving investor confidence, liberalizing FDI norms, and increasing foreign investment in key sectors such as manufacturing, electronics, automobiles, and defense. However, challenges related to infrastructure, regulatory complexity, and skill gaps continue to affect the full realization of the initiative's objectives.

KEYWORDS: MAKE IN INDIA, FOREIGN DIRECT INVESTMENT, MANUFACTURING, ECONOMIC DEVELOPMENT, INVESTMENT POLICY.

INTRODUCTION:

The Make in India initiative was launched by the Government of India on 25th September 2014 with an overarching vision to transform India into a global manufacturing hub and to attract enhanced Foreign Direct Investment (FDI) into the economy. The program aims to improve the country's industrial sector, boost employment, accelerate economic growth, introduce new technology, and promote innovation across sectors. Central to this initiative is the belief that increasing foreign investment inflows will not only stimulate domestic production but also integrate India more deeply into global value chains. Since its inception, Make in India has prioritized reforms to simplify business procedures, relax FDI norms in key sectors, and improve India's Ease of Doing Business. These reforms include permitting 100% FDI under automatic route in most industries, liberalizing foreign investment norms in sectors like defence, retail, insurance and creating a more predictable regulatory environment. The government has concurrently launched complementary schemes such as the Production Linked Incentive (PLI) to create competitive manufacturing capabilities and attract investments in high-growth sectors like electronics, pharmaceuticals, and automobiles.

FDI plays a multidimensional role in host economies: it brings in capital coupled with technology, skill development, managerial know-how, and access to new markets. These inflows strengthen industrial growth by bridging financing gaps, spurring innovation, and uplifting both productivity and export potential. Countries with sustained high FDI inflows tend to witness faster industrialization and higher GDP growth. India's experience reflects this trend, with cumulative FDI inflows rising substantially since the launch of the campaign. Empirical data indicate that FDI inflows into India have shown a strong upward trajectory since 2014. Between April 2014 and September 2024, India received approximately US$ 709.84 billion in FDI, accounting for nearly 69% of total FDI since 2000. This marks a significant increase in global investor confidence partly attributed to policy reforms under Make in India.

In financial year 2022–23, India attracted US$ 70.97 billion in FDI, with top contributing sectors including services, computer software and hardware, telecommunications, and automobile industries. Leading source countries were Mauritius, Singapore, the USA, the Netherlands, and Japan. The states of Maharashtra, Karnataka, Gujarat, Delhi, and Tamil Nadu were key recipients of these inflows. More recent data show that India's cumulative FDI inflows from April 2000 to June 2025 reached approximately US$ 747.51 billion (Rs. 49,28,358 crore), indicating a growth of over twenty times compared to two decades prior. This broad inflow base reflects investor interest across multiple sectors and highlights India's strategic positioning as an attractive destination for overseas capital. ertain quarterly snapshots further demonstrate this trend: during the April–June 2025 period alone, FDI surged to Rs. 1,59,428 crore (about US$ 18.62 billion), while between April and October 2025, India recorded approximately US$ 58.3 billion in gross FDI 15.4% increase compared to the same period in the previous year.

Make in India was to enhance manufacturing's contribution to GDP, and to attract capital into industrial sectors traditionally dominated by service sector investments. While overall FDI into manufacturing has not grown as fast as in services, it has nonetheless shown positive signs, particularly in automobil, electronics, and pharmaceutical industries. According to parliamentary data, foreign investments in the manufacturing sector totalled about US$ 20.8 billion between October 2019 and December 2023, reflecting how targeted reforms have encouraged multinational firms to establish or expand operations in the country.

Manufacturing's share in GDP though still below its global peers benefits from foreign capital in the form of technology transfers, higher productivity, and enhanced competitiveness. Initiatives like PLI have amplified these effects by making domestic production more attractive for global firms, especially in high-value and export-oriented segments. Despite notable successes, Make in India faces challenges. Some experts argue that FDI in manufacturing has not grown as rapidly as hoped, and that overall foreign investment patterns show fluctuations due to global economic conditions and repatriation trends. For instance, net FDI the balance after accounting for foreign firms' repatriation and Indian companies' overseas investments experienced sharp declines in certain periods, highlighting vulnerabilities that extend beyond domestic policy frameworks.

Nevertheless, the broad consensus in academic and policy analyses is that Make in India has played a significant role in elevating India's profile as a global investment destination and in shaping FDI flows into the nation. The policy's emphasis on liberalization, infrastructure, digitization, and targeted incentives has yielded measurable outcomes in capital attraction and economic integration with global markets.

BACKGROUND OF THE STUDY:

Before 2014, India faced several structural challenges in manufacturing, including bureaucratic delays, restrictive labor laws, and limited infrastructure. Although India attracted FDI mainly in services, manufacturing lagged behind other emerging economies such as China and Vietnam. Make in India was introduced as a comprehensive strategy to overcome these constraints by opening key sectors to foreign investment, simplifying procedures, and promoting India's manufacturing potential globally.

STATEMENT OF THE PROBLEM:

Despite the ambitious goals of sMake in India, questions remain regarding its actual impact on foreign investment. While FDI inflows have increased in recent years, it is necessary to examine whether this

growth can be directly attributed to the initiative and whether the inflows have strengthened the manufacturing sector. The problem addressed in this study is to assess the effectiveness of Make in India in attracting foreign investment and to identify existing gaps and challenges.

OBJECTIVES OF THE STUDY:

The main objectives of the study are:
To analyze trends in foreign direct investment in India before and after the launch of Make in India.
To examine sector-wise FDI inflows under the Make in India framework.
To assess the role of policy reforms and ease of doing business in attracting foreign investment.
To identify challenges faced in attracting and sustaining foreign investment.

REVIEW OF LITERATURE:

Mukherjee and Goyal (2018) argue that the initiative contributed to a steady rise in FDI inflows between 2014 and 2019. Their analysis shows that foreign investors responded favorably to policy simplification, improved infrastructure, and the government's emphasis on manufacturing-led growth. Similarly, Kumar (2019) notes that Make in India improved India's global image as an investment destination, particularly among multinational corporations seeking alternative manufacturing bases. However, some scholars present a more critical assessment. Srinivasan (2020) points out that while FDI inflows increased, the share of manufacturing FDI did not rise proportionately, suggesting that the initiative's core objective faced structural challenges. Issues such as land acquisition, labor law rigidity, and logistical inefficiencies continued to limit large-scale manufacturing investments. NITI Aayog studies also emphasize that policy announcements alone are insufficient without effective implementation at the state level. sSector-specific studies provide mixed evidence. Aggarwal (2021) found significant FDI growth in sectors like electronics, automobiles, and renewable energy, attributing it to targeted incentives and production-linked incentive (PLI) schemes aligned with Make in India. In contrast, Bose and Dutta (2022) argue that services continue to dominate FDI inflows, indicating that India's structural shift toward manufacturing remains incomplete.

RESEARCH METHODOLOGY:

This study is based on a descriptive and analytical research design to examine the impact of the Make in India initiative on foreign investment in India. The research relies exclusively on secondary data collected from reliable sources such as reports of the Department for Promotion of Industry and Internal Trade (DPIIT), Reserve Bank of India (RBI), World Bank, UNCTAD, and published research articles, journals, and government publications. Trend analysis and comparative analysis techniques are used to evaluate changes in FDI inflows before and after the implementation of Make in India. Simple statistical tools, tables, and graphs are employed for data interpretation.

RESEARCH DESIGN:

The present study adopts a descriptive and analytical research design to examine the impact of the Make in India initiative on foreign investment in India. The descriptive approach helps in understanding trends and patterns of FDI inflows, while the analytical approach enables evaluation of policy impacts through comparison of pre- and post-Make in India periods using secondary data from reliable sources.

DATA COLLECTION:

Data are collected using secondary sources such as government publications, Reserve Bank of India reports, World Bank databases, and research journals.

DATA ANALYSIS AND INTERPRETATION:

The analysis of Foreign Direct Investment (FDI) inflow data using percentage growth and trend analysis provides a comprehensive understanding of how India's investment environment evolved before and after the launch of the Make in India initiative in 2014. Prior to 2014, FDI inflows into India were characterized by uneven growth, frequent fluctuations, and sensitivity to both domestic and global economic conditions. Although India had already established itself as a significant emerging market destination after the liberalization reforms of 1991, the pace of foreign investment growth remained constrained by regulatory complexity, policy uncertainty, infrastructure bottlenecks, and procedural delays. Percentage growth analysis of FDI inflows during the pre-2014 period shows moderate increases in some years, followed by stagnation or decline in others, reflecting limited investor confidence and dependence on global economic cycles such as the 2008–09 financial crisis and subsequent slowdown. Trend analysis during this phase indicates the absence of a strong upward trajectory, with FDI largely concentrated in services such as finance, telecommunications, information technology, and real estate, while manufacturing received comparatively lower foreign investment. After 2014, however, a clear break in trend becomes visible. The Make in India initiative marked a strategic shift in India's development policy, emphasizing manufacturing, infrastructure, and industrial growth as engines of economic expansion. Trend analysis of post-2014 data shows a sustained upward movement in total FDI inflows, with fewer sharp declines and greater year-to-year stability. Percentage growth rates improved significantly in several post-2014 years, indicating that foreign investors responded positively to policy reforms, liberalization of FDI norms, and the government's strong signaling of long-term commitment to economic openness. Even during periods of global uncertainty—such as trade tensions, geopolitical risks, and the COVID-19 pandemic—India continued to attract substantial FDI, demonstrating increased resilience and deeper investor confidence compared to the pre-Make in India era. This overall trend suggests that the initiative played a crucial role in transforming India's investment narrative from a services-led destination to a broader, production-oriented economy.

Sector-wise comparison of FDI inflows further strengthens the interpretation that Make in India significantly influenced the composition and direction of foreign investment, particularly by encouraging manufacturing-oriented sectors. Before 2014, sectoral data reveal a heavy concentration of FDI in services, while manufacturing sectors such as automobiles, electronics, machinery, chemicals, textiles, and defense attracted relatively smaller shares. Structural constraints—including rigid labor laws, land acquisition challenges, high logistics costs, and limited integration with global value chains—discouraged large-scale manufacturing investments. However, post-2014 sector-wise analysis shows a noticeable and consistent increase in FDI inflows into manufacturing and industrial sectors. Liberalization of sectoral FDI caps, expansion of the automatic route, and targeted policy measures under Make in India created a more favorable environment for foreign manufacturers. Sectors such as automobiles and auto components experienced strong inflows as multinational companies invested in production facilities aimed at both domestic consumption and exports. Electronics manufacturing emerged as a major beneficiary, with foreign firms setting up mobile phone assembly units, semiconductor-related facilities, and consumer electronics plants, supported by Production Linked Incentive (PLI) schemes. Pharmaceuticals and chemicals attracted increased investment due to India's strong base in generic drugs, skilled workforce, and cost advantages, while renewable energy equipment manufacturing gained traction in line with global sustainability goals. Defense manufacturing, traditionally closed to foreign participation, witnessed a gradual rise in FDI following the relaxation of investment limits and encouragement of joint ventures and technology transfer. Sector-wise comparison thus indicates not only a quantitative increase in FDI but also a qualitative shift toward productive, employment-generating, and technology-intensive activities. Although services

continue to command a large share of total FDI inflows, the rising proportion of manufacturing-oriented investment reflects progress toward the core objective of Make in India: transforming India into a global manufacturing and investment hub.

The combined interpretation of percentage growth, trend analysis, and sector-wise comparison highlights that the post-2014 increase in FDI inflows represents a deeper structural transformation rather than a temporary surge driven by external factors. The noticeable rise in FDI after 2014 can be linked to a broader ecosystem of reforms that reinforced the objectives of Make in India. Measures such as the introduction of the Goods and Services Tax (GST), the Insolvency and Bankruptcy Code (IBC), improvements in Ease of Doing Business rankings, digitization of approvals, and infrastructure expansion complemented the manufacturing push and enhanced overall investor confidence. From an analytical perspective, percentage growth analysis confirms acceleration in FDI inflows, trend analysis demonstrates long-term upward momentum, and sector-wise comparison reveals diversification and manufacturing orientation. Together, these findings suggest that Make in India has positively influenced both the scale and structure of foreign investment in India. At the same time, the analysis also points to persisting challenges that moderate the full realization of manufacturing-led FDI growth, such as skill mismatches, regional disparities in industrial development, and competition from other emerging manufacturing destinations. Nevertheless, the post-2014 pattern of FDI inflows indicates that India has strengthened its position as a reliable and attractive destination for long-term foreign investment. The emphasis on manufacturing-oriented sectors has begun to rebalance the economy, promote industrial capacity building, and integrate India more effectively into global value chains. In conclusion, the data analysis and interpretation clearly demonstrate that Make in India has been instrumental in generating a noticeable and sustained increase in FDI inflows after 2014, particularly in manufacturing-oriented sectors, thereby contributing to India's broader economic transformation and growth trajectory.

FINDINGS OF THE STUDY:

The present study examines the impact of the Make in India initiative on Foreign Direct Investment (FDI) inflows into India using percentage growth, trend analysis, and sector-wise comparison. The findings of the study clearly indicate that Make in India has played a significant role in improving India's overall investment climate and in attracting higher levels of foreign investment, particularly after 2014. One of the major findings is that total FDI inflows into India show a noticeable and sustained increase in the post-2014 period. Trend analysis reveals a clear upward movement in FDI inflows after the launch of Make in India, compared to the fluctuating and moderate growth observed in the pre-2014 period. This suggests that the initiative contributed to strengthening foreign investor confidence by signaling policy stability, openness, and a long-term commitment to economic reforms. The improvement in percentage growth rates of FDI inflows in several post-2014 years further supports this observation.

nother important finding relates to the sectoral composition of FDI. The study finds that manufacturing-oriented sectors have experienced a significant rise in foreign investment after 2014. Sectors such as automobiles, electronics, pharmaceuticals, chemicals, defense manufacturing, and renewable energy attracted increased FDI inflows due to liberalized FDI norms, targeted policy incentives, and improved ease of doing business. This indicates a gradual shift in India's FDI pattern from being predominantly services-driven toward greater diversification and industrial orientation, aligning with the core objectives of Make in India.

The study also finds that although the services sector continues to dominate total FDI inflows, the relative share of manufacturing has improved in the post-Make in India period. This reflects a slow but

positive structural transformation of the Indian economy. Increased manufacturing FDI has contributed to technology transfer, employment generation, and integration of Indian industries into global value chains.

dditionally, the findings highlight the importance of complementary reforms in amplifying the impact of Make in India. Policy measures such as the Goods and Services Tax (GST), Insolvency and Bankruptcy Code (IBC), infrastructure development, and digitization of regulatory processes played a supportive role in attracting foreign investment. However, the study also finds that challenges such as skill gaps, infrastructure disparities across states, and global economic uncertainties continue to affect the pace of manufacturing-led FDI growth.

Overall, the findings conclude that Make in India has had a positive and meaningful impact on FDI inflows into India, particularly by encouraging foreign investment in manufacturing-oriented sectors, though sustained reforms are essential for long-term success.

DISCUSSION OF RESULTS:

The results of the study indicate that the Make in India initiative has had a positive influence on Foreign Direct Investment (FDI) inflows into India, especially after 2014. The observed increase in FDI inflows supports the view that policy stability, liberalized FDI norms, and improved ease of doing business enhanced foreign investor confidence. The trend and percentage growth analysis confirm that India's investment environment became more resilient and attractive in the post-Make in India period. Sector-wise results show that manufacturing-oriented sectors such as automobiles, electronics, pharmaceuticals, and defense experienced higher foreign investment, reflecting the effectiveness of targeted reforms and incentive-based schemes. However, the continued dominance of the services sector suggests that structural challenges in manufacturing persist. Overall, the discussion highlights that while Make in India successfully improved both the volume and quality of FDI inflows, sustained reforms and effective implementation remain crucial to achieving long-term manufacturing-led growth.

CONCLUSION:

The present study concludes that the Make in India initiative has played a significant role in enhancing Foreign Direct Investment (FDI) inflows into India, particularly in the post-2014 period. The analysis based on percentage growth, trend analysis, and sector-wise comparison clearly demonstrates a noticeable increase in FDI inflows after the implementation of the initiative. This reflects improved investor confidence resulting from policy stability, liberalization of FDI norms, and a stronger emphasis on manufacturing and infrastructure development.

The study also concludes that Make in India has contributed to a gradual shift in the composition of FDI, with manufacturing-oriented sectors such as automobiles, electronics, pharmaceuticals, defense, and renewable energy attracting increased foreign investment. Although the services sector continues to dominate total FDI inflows, the rising share of manufacturing indicates progress toward the objective of transforming India into a global manufacturing hub. Increased manufacturing FDI has supported technology transfer, employment generation, and integration with global value chains.

Furthermore, the findings suggest that the success of Make in India has been strengthened by complementary reforms such as GST, the Insolvency and Bankruptcy Code, and improvements in ease of doing business. However, challenges related to infrastructure, skill development, and regional disparities remain. Overall, the study concludes that Make in India has had a positive and meaningful

impact on FDI inflows, though sustained reforms are essential for long-term and inclusive economic growth.

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SUSTAINABLE LOGISTICS, SUPPLY CHAIN RESILIENCE, AND BUSINESS PERFORMANCE IN THE COMMERCE SECTOR: A SECONDARY DATA REVIEW AND ANALYTICAL ASSESSMENT

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ABSTRACT

Supply chains form the operational backbone of the commerce sector, influencing production continuity, cost efficiency, customer service reliability, and overall organizational performance. Over the past decade, globalization, technological transformation, environmental concerns, and recurring disruptions such as pandemics, geopolitical conflicts, natural disasters, and market volatility have altered the structure and risk profile of commercial supply chains. In this evolving context, organizations increasingly emphasize **sustainable logistics practices and supply chain resilience strategies** as mechanisms to enhance operational continuity, reduce vulnerability, and support long-term business performance.

This paper presents a **secondary-data-based analytical review** examining the interrelationship between sustainable logistics practices, supply chain resilience, and business performance in the commerce sector. Drawing on academic literature, industry reports, institutional databases, trade publications, and international policy documents, the paper synthesizes findings relating to green logistics, digital supply-chain systems, inventory strategies, risk management mechanisms, and resilience-building frameworks. The study analyzes how sustainable logistics initiatives such as energy-efficient transportation, waste reduction, reverse logistics, and eco-packaging interact with resilience dimensions including flexibility, redundancy, visibility, agility, and collaboration.

Secondary evidence suggests that firms adopting sustainable and resilience-oriented supply chain strategies demonstrate enhanced operational efficiency, improved brand reputation, reduced risk exposure, and greater competitive stability. However, trade-offs emerge between cost pressures, technology investment requirements, and short-term financial returns, particularly for SMEs and resource-constrained enterprises. The paper offers a conceptual model integrating sustainability and resilience as complementary drivers of business performance, supported by analytical interpretation based on synthesized secondary data. The study concludes with practical and policy implications, research gaps, and directions for future scholarship within the commerce and supply-chain management domain.

KEYWORDS: SUSTAINABLE LOGISTICS, SUPPLY CHAIN RESILIENCE, BUSINESS PERFORMANCE, SECONDARY DATA REVIEW, COMMERCE SECTOR, RISK MANAGEMENT, GREEN SUPPLY CHAIN, OPERATIONAL EFFICIENCY.

1. INTRODUCTION

Supply chains enable the movement of goods, information, and resources across networks of suppliers, distributors, retailers, and consumers. In the commerce sector, supply chains are not merely operational systems but strategic platforms through which firms compete, differentiate, and create value. Traditionally, commercial supply chains prioritized **cost minimization, lead-time reduction, and efficiency optimization**, reflecting lean management philosophies and just-in-time inventory practices. However, recent global disruptions have challenged the adequacy of purely efficiency-driven models.

Events such as the COVID-19 pandemic, worldwide logistics congestion, semiconductor shortages, geopolitical tensions, climate-induced disasters, and fuel price volatility exposed the vulnerabilities of highly centralized, cost-optimized, and globally stretched supply chains. These disruptions led to production halts, delivery delays, inventory imbalances, and financial losses across retail, manufacturing, distribution, and e-commerce sectors. As a result, organizations increasingly emphasize **resilience-oriented supply chain strategies** focusing on flexibility, adaptability, redundancy, visibility, and collaboration.

Parallel to resilience concerns, businesses also face growing expectations related to **environmental sustainability, carbon reduction, resource conservation, and ethical logistics practices**. Governments, customers, investors, and regulators increasingly demand environmentally responsible supply-chain behavior, including reduced emissions, sustainable sourcing, recyclable packaging, efficient transportation, and waste-minimization logistics models. Sustainable logistics, therefore, emerges not only as an environmental imperative but also as a strategic business consideration influencing corporate reputation, compliance, and long-term viability.

This dual orientation toward **sustainability and resilience** has reshaped academic and managerial discourse on supply-chain strategy. Rather than treating sustainability and resilience as separate or competing objectives, contemporary scholarship increasingly explores their **synergistic relationship** and combined influence on business performance. For example, resource-efficient logistics practices may simultaneously reduce environmental impact and enhance operational continuity, while diversified sourcing strategies may strengthen resilience and support responsible procurement goals.
Against this background, the present paper conducts a **secondary-data-based analytical review** to examine how sustainable logistics practices and resilience strategies collectively influence business performance in the commerce sector. The study synthesizes evidence from published research, industry surveys, institutional datasets, and case-based documentary sources to evaluate patterns, drivers, trade-offs, and outcome relationships.
The guiding research question is:
How do sustainable logistics practices and supply chain resilience strategies influence business performance in the commerce sector, based on secondary data evidence and analytical interpretation?

2. LITERATURE REVIEW

2.1 Sustainable Logistics and Green Supply Chain Practices

Sustainable logistics refers to designing and operating supply-chain activities in ways that minimize environmental harm while maintaining service quality and economic viability. Secondary literature highlights core components such as eco-transportation systems, energy-efficient warehousing, carbon-optimized fleet operations, recyclable packaging, circular logistics models, and waste-reduction strategies. Studies report that organizations adopting green logistics benefit from improved resource efficiency, lower fuel consumption, enhanced brand trust, and regulatory compliance. However, early-stage implementation may require investment in technology, infrastructure, and process redesign, creating temporary cost pressures for firms.

2.2 Supply Chain Resilience

Resilience in supply chains refers to the ability to absorb disruption, adapt to unexpected changes, and recover operational continuity within reasonable timeframes. The literature identifies resilience capabilities across dimensions such as redundancy (backup resources and suppliers), flexibility (process adaptability), agility (rapid response capacity), visibility (real-time monitoring), and

collaboration (inter-organizational coordination). Evidence indicates that resilient supply chains mitigate financial losses, stabilize customer relationships, and sustain market competitiveness during volatility.

2.3 Business Performance Outcomes

Business performance in supply-chain contexts is reflected through indicators such as cost efficiency, service reliability, delivery timeliness, revenue stability, risk mitigation, customer retention, and innovation capacity. Secondary research suggests that firms combining sustainability and resilience achieve stronger reputational value, stakeholder confidence, and long-term competitive advantage compared to firms relying solely on short-term cost optimization.

2.4 Intersection of Sustainability and Resilience

Emerging scholarship emphasizes that sustainability and resilience are **mutually reinforcing rather than contradictory**. Environmentally efficient logistics practices reduce waste and operational friction, while resilience-oriented diversification strategies promote sustainable sourcing and ethical supply relationships. However, some studies caution that excessive redundancy may increase environmental footprint, highlighting the need for balanced strategic alignment.

3. METHODOLOGY: SECONDARY DATA REVIEW AND ANALYTICAL APPROACH

This study adopts a **qualitative-analytical review methodology** grounded in secondary data. Sources include peer-reviewed journal articles, industry white papers, trade reports, logistics association publications, multinational corporate sustainability disclosures, and databases from international organizations involved in trade and transport research.

The review followed three interpretive stages:

Compilation and screening of secondary evidence relating to sustainable logistics, resilience strategies, and business performance.

Thematic coding and synthesis of recurring patterns across sustainability practices, resilience mechanisms, and performance outcomes.

Analytical interpretation explaining how the evidence reflects relational linkages, mediating variables, and strategic trade-offs.

Rather than conducting econometric modeling, the analysis is **interpretive and conceptual**, integrating narrative evidence to explain how resilience and sustainability jointly affect business outcomes in the commerce sector.

4. ANALYTICAL DISCUSSION AND SECONDARY DATA SYNTHESIS

4.1 Sustainability Practices and Operational Outcomes

Secondary evidence across multiple reports indicates that organizations implementing sustainable logistics practices typically realize improvements in energy efficiency, inventory optimization, and waste minimization. For instance, fuel-efficient transportation routing and route-optimization software reduce fuel consumption while shortening delivery timelines. Eco-packaging initiatives lower material waste and transportation weight, indirectly improving cost efficiency. Reverse logistics and recycling systems support extended product life cycles and promote environmentally conscious brand identity.

From an analytical standpoint, sustainability operates as both a **cost-management mechanism and value-creation system**. Firms initially investing in sustainable logistics may experience increased implementation costs, but long-term savings emerge through improved resource utilization, regulatory incentives, and reduced penalty exposure. This supports the argument that sustainability strengthens operational and financial outcomes when embedded strategically rather than implemented symbolically.

4.2 Resilience Capabilities and Risk Management

Secondary data indicate that firms with diversified suppliers, multi-location warehousing, safety-stock buffers, and digital monitoring platforms demonstrate stronger resilience during disruptions. Comparative case evidence from crisis-affected industries reveals that resilience-oriented firms maintain continuity of supply and retain customer trust despite external disturbances.

Analytically, resilience enhances **business continuity, stability of cash flows, and protection against reputational damage**. However, resilience strategies such as redundancy and multiple sourcing also introduce additional costs. The challenge lies in achieving an optimal balance where resilience investments align with risk exposure and strategic vulnerability levels.

4.3 Integrating Sustainability and Resilience: Complementarities and Trade-offs

A key analytical insight from the secondary data synthesis is that sustainability and resilience increasingly converge as **strategic complements**. For example:

Localized sourcing reduces transportation emissions while simultaneously lowering exposure to global logistics disruptions.

Energy-efficient warehousing reduces environmental footprint while improving operational resilience through stable energy consumption patterns.

Circular logistics and product-recovery systems enhance sustainability while supporting resilience through resource availability and material recirculation.

At the same time, trade-offs arise in scenarios where resilience strategies expand environmental footprint (e.g., redundant logistics capacity). The evidence suggests that firms must adopt **integrated decision frameworks** rather than viewing sustainability and resilience in isolation.

4.4 Secondary Data Patterns on Business Performance

Synthesized findings across reports show that organizations integrating sustainability and resilience experience improved:

Cost efficiency and waste reduction

Customer satisfaction and reliability perception

Market credibility and investor confidence

Long-term financial stability and competitiveness

Performance outcomes are particularly observable in firms embedding **technology-enabled supply-chain systems**, stakeholder collaboration platforms, and capability-development initiatives.

5. EXTENDED CONCEPTUAL INTERPRETATION

Based on analytical synthesis, the relationship between sustainable logistics, resilience, and business performance can be interpreted through a progressive linkage:

Sustainable Logistics Practices + Resilience Capabilities → Operational Efficiency, Risk Mitigation, and Stakeholder Trust → Strengthened Business Performance and Competitive Sustainability

Sustainability enhances resource efficiency and corporate legitimacy, while resilience ensures continuity and adaptability under uncertainty. Together, they form a **dual-pillar strategy** supporting stable and competitive supply-chain performance in the commerce sector.

6. MANAGERIAL AND POLICY IMPLICATIONS

For practitioners, the analysis underscores the need to integrate sustainability initiatives with resilience planning rather than adopting fragmented approaches. Firms should invest in technology systems that enhance supply-chain visibility, develop collaborative partnerships across logistics networks, and align risk-management frameworks with environmental responsibility goals. For policymakers, secondary data trends highlight the importance of infrastructure modernization, green transport incentives, digital

logistics ecosystems, and regulatory frameworks supporting sustainable-resilient supply chain innovation, especially for SMEs and emerging-market enterprises.

7. LIMITATIONS AND FUTURE RESEARCH

This study is based on secondary data and conceptual interpretation rather than primary field investigation or econometric testing. Future research may incorporate quantitative case-comparisons, firm-level resilience performance metrics, longitudinal supply-chain disruption studies, and sector-specific empirical exploration.

8. CONCLUSION

This extended analytical paper demonstrates that sustainable logistics and supply chain resilience collectively influence business performance in the commerce sector. Secondary evidence confirms that organizations integrating environmental responsibility with resilience-oriented strategies achieve stronger operational continuity, reputational value, and long-term competitiveness. The findings reinforce the view that sustainability and resilience are not competing objectives but **mutually reinforcing strategic pathways** shaping performance outcomes in contemporary commercial supply-chain systems.

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HUMAN RESOURCE PRACTICES, EMPLOYEE PRODUCTIVITY, AND ORGANIZATIONAL SUSTAINABILITY IN THE COMMERCE SECTOR: A SECONDARY DATA REVIEW AND ANALYTICAL DISCUSSION

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ABSTRACT

Human resource (HR) practices play a pivotal role in shaping employee productivity, organizational commitment, and long-term sustainability in the commerce sector. In an increasingly competitive business environment characterized by digital transformation, market uncertainty, and workforce diversity, organizations rely on strategic HR systems to enhance employee capability, performance, and retention. This paper presents a **secondary-data-based analytical review** of HR practices and their impact on employee productivity and organizational sustainability in commercial enterprises. Drawing on academic literature, institutional surveys, and corporate reports, the paper synthesizes evidence relating to training and development, performance management, work culture, employee engagement, and technology-enabled HR systems.

Secondary research indicates that organizations that invest in structured training, skill development, and supportive work environments experience higher employee productivity and stronger retention outcomes. Human-centric leadership, fair performance evaluation, and learning-oriented cultures strengthen employee motivation and align workforce behavior with organizational objectives. At the same time, evidence suggests that poorly implemented HR systems, work stress, limited career growth, and weak communication structures negatively affect productivity and organizational sustainability. The review highlights the importance of integrating HR strategy with organizational vision, digital capability, and employee wellbeing initiatives. The paper concludes with conceptual insights and directions for future research in HR-driven sustainability within the commerce domain.

KEYWORDS: HUMAN RESOURCE PRACTICES, EMPLOYEE PRODUCTIVITY, ORGANIZATIONAL SUSTAINABILITY, SECONDARY DATA REVIEW, WORK CULTURE, PERFORMANCE MANAGEMENT, EMPLOYEE ENGAGEMENT.

1. INTRODUCTION

Human resources constitute a critical strategic resource for organizations operating in the commerce sector. Unlike physical or financial assets, human capital contributes creativity, judgment, innovation, and service quality, which directly influence organizational performance and competitiveness. Contemporary commercial enterprises operate in environments shaped by technological change, customer expectations, and continuous process innovation. In this context, employee productivity and organizational sustainability depend significantly on the effectiveness of HR systems and workplace practices.

Over the past two decades, secondary research across management and commerce disciplines has emphasized the shift from traditional personnel administration toward strategic HRM approaches that integrate talent development, performance systems, and organizational learning. Evidence from corporate and institutional reports suggests that organizations that prioritize employee capability building, supportive leadership, and performance-linked systems demonstrate stronger productivity outcomes than firms relying solely on cost-driven employment practices. However, productivity gains

are not automatic; they depend on alignment between HR policies, organizational culture, and employee expectations.

This paper reviews **secondary data and published research** to analyze how HR practices influence employee productivity and organizational sustainability in the commerce sector. The central guiding question is:

How do human resource practices influence employee productivity and organizational sustainability in the commerce sector, based on secondary data evidence and analytical interpretation?

2. SECONDARY DATA INSIGHTS ON HR PRACTICES AND PRODUCTIVITY

Findings from institutional reports and empirical studies indicate that **training and skill development** are among the most influential HR drivers of productivity growth. Organizations that invest in continuous learning, technical upskilling, and role-based competency programs experience improvements in task efficiency, service quality, and innovation capability. Corporate case studies highlight that structured learning ecosystems encourage knowledge sharing, adaptability, and problem-solving behavior, contributing to sustainable performance outcomes.

Secondary literature also shows that **employee engagement and work culture** significantly affect productivity. Engaged employees demonstrate higher commitment, lower absenteeism, and greater willingness to contribute beyond routine responsibilities. Studies report that transparent communication, supportive supervision, and recognition mechanisms foster psychological safety and strengthen organizational belongingness. Conversely, hierarchical communication barriers, excessive workload, and workplace stress reduce motivation and weaken productivity outcomes.

Another consistent theme in secondary evidence relates to **performance management systems**. Fair, transparent, and feedback-oriented performance evaluation enhances employee clarity regarding goals and expectations, leading to improved alignment with organizational objectives. Research findings indicate that organizations relying on developmental appraisal approaches, rather than punitive evaluation models, experience stronger productivity and retention outcomes. Poorly designed appraisal systems, however, may generate dissatisfaction and resistance toward organizational goals.

3. HR TECHNOLOGY, WORK TRANSFORMATION, AND ORGANIZATIONAL SUSTAINABILITY

Recent secondary research highlights the growing role of **technology-enabled HR systems** such as digital onboarding platforms, e-learning tools, and performance analytics dashboards. These systems support real-time monitoring, skill mapping, and personalized learning pathways, contributing to improved productivity and workforce responsiveness. Evidence from industry reports suggests that digital HR solutions enhance decision-making efficiency and reduce administrative burden, allowing managers to focus on strategic human-capital development.

At the same time, secondary sources caution that technology adoption must be integrated with employee readiness and wellbeing considerations. Rapid digitalization without adequate training or support may increase stress, create skill gaps, and reduce job satisfaction. Organizational sustainability therefore depends on balancing efficiency-driven technological adoption with humane and inclusive HR practices that respect employee development needs.

Sustainability perspectives in HR research emphasize the long-term alignment between organizational objectives and employee wellbeing. Secondary studies indicate that organizations adopting **sustainable HRM approaches**—including work-life balance initiatives, ethical employment relations, and health-support programs—experience stronger resilience, lower turnover, and stable productivity levels. Sustainability-oriented HR practices help organizations retain talent, reduce replacement costs, and maintain institutional knowledge, contributing to durable competitive advantage.

4. CONCEPTUAL INTERPRETATION

Based on synthesized secondary evidence, the relationship between HR practices, productivity, and sustainability can be conceptually viewed as a progressive linkage:

Strategic HR Practices (Training, Engagement, Performance Systems) → Enhanced Employee Capability & Motivation → Higher Productivity & Work Quality → Organizational Sustainability & Long-Term Performance

Employee capability and motivation operate as mediating forces within this relationship. Productivity strengthens when HR systems provide clarity, growth opportunities, and supportive work environments. Sustainability is achieved when productivity gains are accompanied by employee wellbeing, ethical practices, and organizational learning.

5. DISCUSSION AND IMPLICATIONS

The review reinforces the argument that employees are not merely operational resources but strategic partners in value creation. HR practices influence productivity not only through skill acquisition but also through psychological engagement, organizational culture, and leadership behavior. For organizations in the commerce sector, sustainable productivity requires investment in learning ecosystems, transparent communication, fair performance assessment, and supportive managerial structures.

From a practical perspective, organizations should strengthen **continuous training programs, engagement initiatives, and feedback-driven appraisal systems** to enhance productivity. Managers should balance technology adoption with inclusive HR strategies that promote adaptability rather than anxiety among employees. Policymakers and industry institutions may support capability development through sector-wide training frameworks, professional certification systems, and workforce-learning partnerships.

6. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

This study relies on secondary data and conceptual interpretation rather than primary empirical evidence. Future research may incorporate quantitative productivity metrics, firm-level case analysis, and comparative studies across industries. There is also scope for examining digital-era workforce transformation, remote-work productivity dynamics, and sustainability-oriented HR innovations in greater empirical depth.

7. CONCLUSION

This secondary-data-based review demonstrates that human resource practices play a decisive role in shaping employee productivity and organizational sustainability in the commerce sector. Training, engagement, supportive work culture, and fair performance systems enhance capability, motivation, and long-term value creation. Sustainable organizations are those that integrate HR strategy with

employee wellbeing, learning orientation, and ethical management. Strengthening HR-driven productivity remains essential for competitive resilience and enduring organizational success.

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RAPID DECLINE OF NATIVE PLANT BIODIVERSITY IN SEMI-ARID GUJARAT: A CASE STUDY OF SURENDRANAGAR DISTRICT

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ABSTRACT

Native plant biodiversity in semi-arid ecosystems is declining at an alarming rate due to the combined effects of climate change, land-use modification, and increasing anthropogenic pressure. Surendranagar district of Gujarat, located in the semi-arid Saurashtra region, represents a fragile ecological landscape where native plant species are rapidly disappearing. The present study provides a detailed assessment of the current status of native plant biodiversity in the district, identifies major drivers responsible for biodiversity loss, and proposes conservation priorities suitable for semi-arid regions. Extensive field surveys conducted across grasslands, scrublands, agricultural margins, and wastelands, combined with secondary floristic records, documented a total of 286 native plant species belonging to 78 families. Comparative analysis with earlier floristic studies revealed a decline of approximately 20% in species richness, particularly among grasses, herbs, and medicinal plant taxa. Agricultural expansion, overgrazing, recurrent droughts, heat waves, invasive alien species, and habitat fragmentation were identified as the primary drivers of biodiversity loss. The study emphasizes the urgent need for site-specific conservation strategies, community participation, and integration of native plant biodiversity conservation into regional land-use planning. The findings contribute valuable baseline data for biodiversity conservation and sustainable ecosystem management in semi-arid Gujarat.

KEYWORDS: NATIVE FLORA, BIODIVERSITY LOSS, SEMI-ARID ECOSYSTEM, CLIMATE CHANGE, CONSERVATION BIOLOGY

1. INTRODUCTION

Plant biodiversity plays a crucial role in maintaining ecosystem stability, supporting food webs, regulating climate, and sustaining human livelihoods. Native plant species are particularly important because they are well adapted to local environmental conditions and contribute to ecological resilience. However, global biodiversity is currently facing an unprecedented decline, with plant species loss occurring at rates far exceeding natural background levels. According to global assessments, habitat loss, climate change, invasive species, and unsustainable land-use practices are the major drivers of plant biodiversity decline worldwide.

Semi-arid ecosystems are among the most vulnerable to biodiversity loss due to limited water availability, high temperature variability, and fragile soils. Even minor disturbances in these ecosystems can result in long-term ecological degradation. Gujarat, located in western India, contains extensive semi-arid and arid landscapes that support unique plant communities adapted to drought and heat stress. The Saurashtra region, including Surendranagar district, is characterized by erratic rainfall patterns, frequent droughts, and increasing land-use pressure, making it particularly susceptible to biodiversity loss.

Surendranagar district supports a mosaic of grasslands, scrublands, and thorn forests that provide habitat for a wide range of native plant species. These ecosystems play an important role in soil conservation, fodder supply, carbon sequestration, and livelihood support for local communities.

Despite their importance, native plant habitats in the district are rapidly being converted into agricultural fields, industrial areas, and urban settlements. In addition, overgrazing by livestock and the spread of invasive alien plant species are accelerating the decline of native flora.

Although earlier floristic studies documented considerable plant diversity in parts of Surendranagar district, recent observations suggest a noticeable reduction in species richness and population sizes of several native taxa. However, systematic assessments quantifying biodiversity decline and identifying its drivers remain limited. The present study aims to fill this knowledge gap by providing a detailed assessment of native plant biodiversity decline in Surendranagar district and proposing conservation strategies relevant to semi-arid ecosystems.

2. STUDY AREA

Surendranagar district is situated in the Saurashtra region of Gujarat, India, and lies between 22°00′–23°00′ N latitude and 70°00′–72°00′ E longitude. The district experiences a semi-arid tropical climate characterized by hot summers, mild winters, and erratic monsoon rainfall. The average annual rainfall ranges from 400 to 600 mm, with high interannual variability. Summers are extremely hot, with temperatures frequently exceeding 42°C, while winters remain relatively dry and mild.

The natural vegetation of the district primarily consists of tropical thorn forests, scrublands, and grasslands dominated by drought-resistant plant species. Soils range from sandy loam to clayey and saline soils, influencing plant distribution and community structure. Agriculture is the dominant land use, with crops such as cotton, groundnut, wheat, and cumin extensively cultivated. Livestock grazing is widespread and represents a major source of livelihood for rural communities.

Rapid population growth, expansion of irrigation infrastructure, industrial development, and road construction have resulted in significant habitat fragmentation. These land-use changes have substantially altered native vegetation patterns and reduced the availability of undisturbed habitats for native plant species.

3. MATERIALS AND METHODS

The present study was conducted using a combination of field surveys, literature review, and comparative analysis of floristic records. Extensive field surveys were carried out across different habitat types including grasslands, scrublands, agricultural field margins, roadside vegetation, and wastelands. Surveys were conducted during different seasons over one annual cycle to ensure maximum representation of seasonal plant species.

Plant specimens were collected, photographed, and identified using standard taxonomic keys, regional floras, and herbarium references. Only native plant species were included in the analysis, while cultivated crops and ornamental exotic species were excluded. Species were categorized into life forms such as herbs, shrubs, trees, grasses, and climbers.

Secondary data were collected from previously published floristic studies, regional biodiversity reports, and herbarium records to compare historical species richness with present observations. The percentage decline in species richness was calculated by comparing earlier records with the current inventory. Major threats to native plant biodiversity were identified through direct field observations and interactions with local farmers and pastoralists.

4. RESULTS

The floristic survey recorded a total of 286 native plant species belonging to 78 families and 214 genera from Surendranagar district. Herbs constituted the dominant life form, accounting for 52% of the total species, followed by shrubs (23%), grasses (15%), trees (8%), and climbers (2%). The dominance of herbaceous species reflects adaptation to semi-arid climatic conditions.

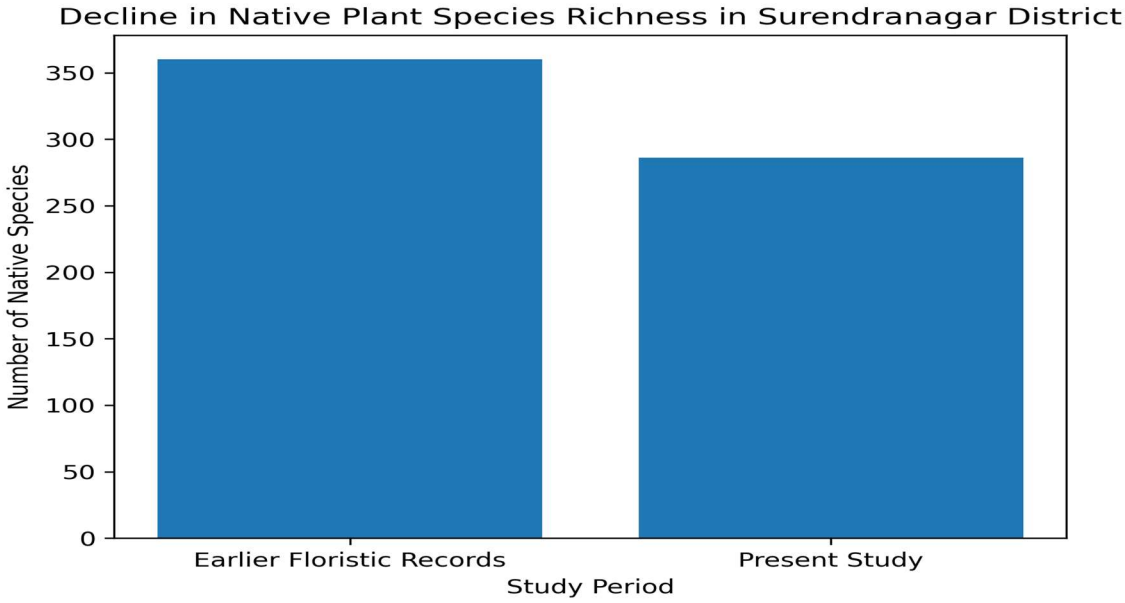
Comparative analysis with earlier floristic records indicated a substantial decline in native plant species richness. Earlier studies reported approximately 360 native plant species from the region, suggesting a decline of nearly 20% over the past two decades. The decline was particularly pronounced among grasses and medicinal plants, many of which were found to be restricted to small, fragmented habitats with low population density.

Several native species exhibited signs of population stress, including reduced regeneration, limited distribution, and seasonal disappearance. Field observations revealed that habitats subjected to intense grazing and agricultural expansion showed significantly lower species richness compared to relatively undisturbed sites.

Table 1. Life-form distribution of native plant species in Surendranagar district

Life Form	Number of Species	Percentage (%)
Herbs	149	52
Shrubs	66	23
Grasses	43	15
Trees	23	8
Climbers	5	2

Figure 1. Decline in native plant species richness in Surendranagar district



5. DISCUSSION

The results of the present study clearly indicate a rapid decline in native plant biodiversity in Surendranagar district. The dominance of herbaceous species is typical of semi-arid ecosystems; however, these species are highly sensitive to rainfall variability and grazing pressure. The observed decline in grasses is particularly concerning because grasses form the foundation of grassland ecosystems and provide essential fodder resources.

Climate change has emerged as a major driver of biodiversity loss in the region. Increased frequency of droughts and heat waves has reduced soil moisture availability and altered plant phenology, leading to reduced germination and survival rates. Similar patterns of biodiversity decline have been reported from other semi-arid regions globally, indicating that the trends observed in Surendranagar are part of a broader ecological phenomenon.

Anthropogenic pressures such as agricultural expansion, overgrazing, and infrastructure development have further intensified habitat degradation. The spread of invasive alien plant species has exacerbated the problem by outcompeting native flora for limited resources. Lack of awareness and limited implementation of conservation policies at the local level have contributed to continued biodiversity loss.

6. CONSERVATION STRATEGIES AND MANAGEMENT IMPLICATIONS

Effective conservation of native plant biodiversity in semi-arid regions requires an integrated approach combining scientific research, policy support, and community participation. Protection of remaining natural grasslands and scrublands should be prioritized through legal recognition and community-based conservation initiatives.

Restoration of degraded habitats using native drought-tolerant species can enhance ecosystem resilience and biodiversity recovery. Control of invasive alien species through mechanical removal and awareness programs is essential. In addition, promoting sustainable grazing practices and integrating biodiversity considerations into regional land-use planning can help reduce pressure on native ecosystems.

Long-term monitoring programs should be established to track changes in plant diversity and assess the impacts of climate change. Engaging local communities, particularly pastoralists and farmers, in conservation efforts can enhance the effectiveness and sustainability of biodiversity management.

7. CONCLUSION

The present study demonstrates that native plant biodiversity in Surendranagar district is undergoing a rapid decline due to the combined effects of climate change and anthropogenic activities. Semi-arid ecosystems, though often overlooked, support unique plant diversity that is crucial for ecological stability and human livelihoods. Immediate conservation interventions integrating scientific research, policy measures, and community participation are essential to prevent irreversible biodiversity loss. The study provides valuable baseline data for future biodiversity monitoring and conservation planning in semi-arid regions of Gujarat and similar ecosystems elsewhere.

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AWARNESS OF RIGHTS OF LGBTQ

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FIGURE NO: 1 LIST OF ACRONYMS

L/G/B/T- lesbial/gay/bisexual/transgender
UN- United Nation
SOGIESC- sexual orientation, gender identity, gender expression, and sex Characteristic
ILGA- The International lesbian/gay/bisexual/transgender Association
UNHRC- United Nations Human Rights Commission

INTRODUCTION

LGBT stands for Lesbian, Gay, Bisexual and Transgender. These terms indicate the sexual orientation or gender identity of a person. It may refer to anyone who is non-heterosexual or non-cisgender, instead of exclusively to people who are lesbian, gay, bisexual, or transgender. To recognize this inclusion, a popular variant, LGBTQ, adds the letter Q for those who identify as queer or are questioning their sexual identity. In India initially a gay magazine 'Bombay Dost'11 within the late 1980's and also the beginning of a lesbian collective in Old Delhi known as 'Sakhi' 12 , lesbian, gay and bisexual problems were 1st articulated in an exceedingly public forum. Since this, LGBT minority movement has been enlarged in India.

SCOPE OF THE STUDY

This report is primarily aimed at EU member states. Especially with regard to experiences of discrimination among LGB individuals, the legal recognition of same-sex unions and public opinion concerning homosexuality, there is large variation across EU member states.. Especially the interplay between public opinion, policy introductions and their effects - as well as the impact on politics of modernization, may be very different in non-democratic countries.

THEORY OF THE STUDY

This theory is a critical theory. This theory includes two simple usages i) methodology of literacy analysis & ii) Productive practice of theory. some author calls for a" critique of heterosexuality" It is very difficult to thinking about sexual and gender relations across May cultures.

FIGURE NO: 3 DEFINITIONS

Definitions are concerning some necessary for the subject are:

LGBT- Abbreviation for Lesbian, Gay, Bisexual and Transgender.

Bisexual - Attraction of someone towards male or feminine sexually, physically and showing emotion.

Discrimination- once the powerful society or their members behave cruel with the less powerful society individuals then such behavior term to be as discrimination.

Gay - Male attracted to another man sexually, romantically, physically and/or showing emotion. This term ask same sex men who got sexually affected.
Gender Identity - a personal sense of being male, feminine or different gender
.
Gender queer - someone who is neither male nor feminine however a mixture of each or is between or beyond gender.

FIGURE NO: 4 LITERATURE REVIEW

Law Commission of India, 2000 - In report of law commission, the committee members recommended the deletion of Section 377 of IPC in india and pleaded that it is harmful to public health due to direct impact on the life of homosexuals. Also, this commission of india quoted that if we will ban such type of relation it results the homophobia in LGBT's which will generate the illegal way of same sex activities in privacy Suicide Prevention Resource Centr found that the suicidal behavior of LGBT's occur due to discrimination towards them by the society, mental illness, isolation, victimization,and some other factors. Also they found that this can be removed by supporting LGBT's and empowering their relation

FIGURE NO: 5 STATEMENT OF PROBLEMS

After the decision of Hon'ble Supreme Court in Suresh Kumar Kaushal v. Naz Foundation18 where court set aside the order of High Court19 by terming same section relationship illegal. Court focuses his idea by saying that such type of relation increases the AIDS of some ration and also Section 377 does not violate Article 14,19 and 21. The researcher is trying to analyze the effectiveness of section 377, how is it being implemented on ground level, various issues and challenges faced by LGBT's faced in India, rather than some laws are made for LGBT.

FIGURE NO: 6 COLOR STANDS FOR LGBT FLAG

Color and its theme
The rainbow as a natural flag from the sky, so he adopted eight color for the stripe, each color with its own meaning. Rainbow flags include a symbol of peace. The color reflects the diversity of the LGBTQ community as the flag is often used as s symbol of pride gay during LGBTQ rights.
Hot pink for Sex
Red for life
Orange for healing
Yellow for sunlight
Green for nature
Turquoise for art
Indigo for harmony
Violet for spirit

FIGURE NO: 7 AWARNESS REGARDING RIGHTS OF LGBTQ

In India , recently evolved this rights. However LGBT citizen of india face certain social and legal difficulties not experienced by Non-LGBT. Despite recent political movements in favour of LGBT rights, there remains a significant amount of homophobia present among the Indian population, with around half of Indians objecting to same-sex relationships according to a 2019 opinion poll

Constitutional Rights of LGBTQ

Article 15 of the Indian constitution says-Prohibit to discrimination on the basis of sexual orientation and gender identity .But many legal protection does not provide same sex marriage. Transgender people have also constitutional rights to change their legal gender & third gender. LGBT person also

register themselves under a third gender. Additionaly some states protects "hijras" a traditional third gender population in south asia. As per Indian constitution this cast has to provide housing programme, offer welfare benefit ,pension scheme, free operation in government hospital.

Article 14 provides Right to equality--It states that the state shall not deny to any person equality before the law or equal protection of the laws within the territory of India.

Article15. Prohibition of discrimination on grounds of religion, race, caste, sex or place of birth

The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth or any of them No citizen shall, on grounds only of religion, race, caste, sex, place of birth or any of them, be subject to any disability, liability, restriction or condition with regard to access to shops, public restaurants, hotels and palaces of public entertainment; or the use of wells, tanks, bathing ghats, roads and places of public resort maintained wholly or partly out of State funds or dedicated to the use of the general public.

Section 377 of IPC-- that was enacted throughout British people during their rule in India in 1860 created an offence of voluntarily having a carnal intercourse "against the order of nature" with any man, lady or animal, punishable by up to 10 years imprisonment or a fine. The section appears neutral in that it criminalizes a couple of sexual acts and their identities.

RIGHT TO EDUCATION

LGBT various aspects of teaching rights. A LGBT students &reduce incidence of homophobia or closeted behavior for children. While in other discussion of this topic is boycott to the pedagogical discussion of LGBT children. That matter is violating religiously, or ideologically motivated rejection. LGBT education system work to safe learning environment for this students. Education system has to try to diverse expression of gender. Responses vary greatly in their scope, duration and level of support that they enjoy education to the highest levels of government.

CONCLUSION

Now, I conclude that LGBT has many more rights of their own. i.e Transgender rights, Military rights, Family rights, Discrimination protection. The Supreme Court issued its verdict that the court unanimously ruled that section 377 is unconstitutional as it infringed on the fundamental rights of autonomy, intimacy, identity of homosexuality in India.

FIGURE NO: 8 LGBT RIGHTS AT THE UNITED NATIONS

Since 1945, The United Nations body had not decide LGBT rights. UN Human rights committee which dicated that the International Convent on Civil & Political rights states that laws against homosexuality are a violation of human rights. After 1995 sexeual orientation become a topic of debate in the negotiation in 4 th world women conference. Brazil, Norway, South Africa led a resolution at the UNHRC requesting that the United Nations High Commissioner for Human Rights. This resolution passed 23 votes In favour to 19 against, with 3 abstentions. In July, 2014 UN announced it would extend equal benefits to employees in same-sex unions entered into in jurisdiction where they are legal. While appointing an Independent Expert in 2016, for finding out the causes of violence and discriminate against public. This long term OHCHR based mandate has been seen as the UN's most overt expression of human rights.

Joint statements

United Nations Human Rights council in Geneva 85 countries joined a joint statement Entitled "Ending acts of violence and related human rights based on Sexual Orientation & Gender Identity" Key facts of this statement is -30 countries are engaged in discussion relating of this statement.

This statement includes new references for issues as a part of the universal periodic review process.20 countries joined this statement that were neither signatory to the 2006 or 2008 statements. This statement support from every region of the world, that including part of 43 from Europe, 5 from Africa,16 from Asia/pacific region.

The United Nations LGBTI core Group

The United Nations LGBT core group is an informal cross regional group of United Nations member states established in 2008. This group is co chaired by Argentina and The Netherlands and includes Albania, Australia, Bolivia, France , Italy, Japan, Malta, etc…This UN LGBT core group in New York is to work within the United nations framework on ensuring the human rights & Fundamental freedoms for all.

On the 26th of July 2013 the UN launched 'Free & Equal', a global campaign designed to raise awareness of homophobic and transphobic violence and discrimination, and to help stop millions of LGBT people being abused for being who they are.

Followings are the main Objective of this Group:

This group work for raising awareness of LGBTI issues.

Cooperation of engaging in spirit of open and constructive dialogue with
UN Member states.

Contributing to multilateral work &negotiation at UN.

This LGBTI non conforming persons human rights work at the United Nation often focuses on the Political system, Since May 2015, ILGA implemented a programme to better engage with these bodies and has been gathering information on their work to ensure that they will include issues of sexual orientation, gender identity, gender expression, and sex characteristics (SOGIESC) where relevant.

In this preparing this report I examined all the concluding observation relating to UN joint statement.

FIGURE NO: 9 LIST OF COUNTRIES WHICH ARE SUPPORTING LGBT

9.1 Name of the countries which are supporting to LGBTQ

Following data are describe to homosexuality should be accepted by the society {50%Above}

Name of countries	% of accepted by public
South Africa	54
India	37
Philipines	73
Japan	68
US	86
France	86
Mexico	69
Brazil	67
Israel	47
Kenya	14
Canada	85

Italy	**75**
Australia	**81**
UK	**86**
Argentina	**76**
Spain	**89**
Germany	**86**

FIGURE NO: 10 LIST OF COUNTRIES WHICH ARE NOT SUPPORTING LGBT

10.1 Name of the countries which are not supporting to LGBTQ

Following countries are describe to homosexual marriage are not accepting by the society.

Afghanistan
Algeria
Anglo
Antigua &Burbuda
Bangladesh
Brunei
Burundi
Cameroon
Comoros
Dominica
Egypt
Ethiopia
Ghana
Guinea
Indonesia
Iran
Malaysia
Maldives
Myanmmar
Kenya
Kuwait
Lebanon
Mauritius
Morocco
Nigeria
Pakistan
Palestine
Qatar
Saudi Arabia
Singapor
Sudan
Srilanka
Tanzania
Tuvala

Tonga
United Arab Emirates
Uganda
Uzbekistan
Yemen
Zimbawe
Above all those countries have tottaly bane of Same-sex marriage and if any one has try to do something related this crime ,They must have capital Imprisonment.

FIGURE NO: 11 LIST OF MOVIES WHICH RELATING TO LGBT IN INDIA

Here's a list of 12 notable Indian LGBTQ movies, some well known, & some obscure.

Serial no.	Name of the Movies	Year
1	SAYANTAN MONDAL	2018
2	DAAYRA	1996
3	GULABI AAINA	1997
4	DARMIYAAN	1997
5	MANGO SOUFFLE	2002
6	SANCHARRAM	2004
7	AREKTI PREMER GOLPO	2010
8	MEMORIES OF MARCH	2010
9	CHINTRANGADA:THE CROWING WISH	2012
10	LOVE	2015
11	ALIGARH	2016
12	KAPOOR & SONS	2016
13	NJAN MARYKUTTY	2018

FIGURE NO: 12 LGBTQ RELATIONSHIP COUNCELLING

Gay and lesbian couples, like straight couples, deal with every day ups and downs of close relationships," Dr. Gottman observes. "We know that these ups and downs may occur in a social context of isolation from family, workplace prejudice, and other social barriers that are unique to gay and lesbian couples. The research uncovered differences, however, that suggest that workshops tailored to gay and lesbian couples can have a strong impact on relationships."

The nature of your problems is not nearly as important as your motivation to change. I have experience-based belief that almost all couples can heal their relationship history and restore their partnership to health. Whether you choose a weekly (link to Welcome/What to Expect) or marathon (link to marathon FAQ) therapy format, I will use my 40,000 hours of clinical expertise to provide a roadmap for your best possible connection.

There are compelling approaches to LGBTQ counseling, but the approaches I use are based on decades of solid scientific research.

1. Emotionally Focused Therapy 2. The Gottman Method 3. EMDR

The nature of your problems is not nearly as importanat as your motivation to change. I have experience base belief that almost all couples can heal their relationship history and restore their partnership to health

FIGURE 13. HISTORY OF LGBT MINORITY IN INDIA

LGBT in Republic of India has been documented for various times, in recent times thanks to unbanning of sexual activity and promotion of LGBT rights which has contributed to large number of researches and opinions concerning the LGBT in Republic of India. No individual has been executed for sexual activity in Indian history

FIGURE NO: 15 CONCLUSION AND SUGGESSIONS

Now, I conclude that attitudes towards LGBT people are clearly understood by the readers. The data shown that support and admire the countries And also conclude that howmany people's thought are bright and positive.& how many people have negative thought. But Now a days LGBT people's rights gavetheir views shape towards .The perception of people differ from how they see the LGBT Community. Therefore there are still negativity & some of have positivity towards LGBT.

In Republic of India, such relationships have been criminalized as in our country it has been termed as unnatural. In Republic of India the problem of homosexuals has been a controversial topic that has been heatedly debated and has attracted the eye of general public likewise as our judiciary. Although Republic of India is a lively member of UNHR and has signed most of the resolutions, however homosexuality topic is yet not within the books. According our judiciary, these are unnatural offences and currently the discretion to repeal this section is on parliament.

Public opinion regarding LGBT rights in India is complex. According to the International Lesbian, Gay, Bisexual, Trans and Intersex Association, approx 50% of Indian people were in favor of legalising same-sex marriage, with a further 50% opposed.A survey by the Varkey Foundation found that support for same-sex marriage was higher among 18-21 year olds at 53%

SUGGESSIONS

I have arrange a group discussion for LGBT community & relating same subject for their rights .The answer of a respondents have a big impact in comes of rating base on some discussion following **suggestion**

As per our constitution all Indian have equality before law & equal protection of life,

I suggest that gender equality should be addressed in the society.

I recommend that people should continue supporting LGBT,

There is still discrimination among the third sex community,

Peole should be open minded about LGBT.

In India Supere court give permission for same sex marriage rather than social acceptance has largly ignored this LGBT.

In India LGBT community faces a lot of problems, Main problem is acceptance from people outside the community because of LGBT community introduce like as "hijaras"

There is a need and requirement of 'Human Rights' and not men rights or women rights or gay rights because Women rights are human rights, Gay rights are human rights, Black rights are human rights and LGBT rights are human rights. We are all humans, and an initiative should be to treat each other that way. LGBT community give "shaap "for our during life so many of the people are afraid to them , But I believe this people are immature.

Many more people are differentiates in their treatment.

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The Evolution of LGBT Rights available on Navtej singh johar v. Union of India

National legal service authority V Union of India- SC decide to recognize the hijjaras & transgender mentione on Land mark judgemen

- *Books*

1.Name of author –Arundhati Roy

Name of book-The Ministry of Utmost Happiness

2. Name of author – A.Revathi & V.Geetha

Name of book-The Truth About me:A Hijra life Story

3.Name of author –Ruth Vanita & Saleem Kidwadi

Name of book-Same sex Love in India: A literary History

Landmark supreme court rules of LGBTQ are available on www.nbcnews.com

Figure 15: Reference Materials

Various books journals…

Various national as well as forogn law and court cases used as examples.

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4.Human rights law networks

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